LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

Board of Administration Agenda

REGULAR MEETING

TUESDAY, NOVEMBER 13, 2018

TIME: 10:00 A.M.

MEETING LOCATION:

LACERS Ken Spiker Boardroom
202 West First Street, Suite 500
Los Angeles, California 90012-4401

Sign Language Interpreters, Communication Access Real-Time Transcription, Assistive Listening Devices, or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. Due to difficulties in securing Sign Language Interpreters, five or more business days' notice is strongly recommended. For additional information, please contact: Board of Administration Office at (213) 473-7169.

I. PUBLIC COMMENTS ON MATTERS WITHIN THE BOARD'S JURISDICTION

II. APPROVAL OF MINUTES FOR SPECIAL BOARD MEETING OF OCTOBER 16, 2018 AND REGULAR BOARD MEETING OF OCTOBER 23, 2018 AND POSSIBLE BOARD ACTION

III. BOARD PRESIDENT VERBAL REPORT

IV. BOARD/DEPARTMENT ADMINISTRATION

A. ACTUARIAL VALUATIONS AS OF JUNE 30, 2018 INCLUDING PROPOSED CITY CONTRIBUTION RATES FOR FISCAL YEAR 2019-20 AND POSSIBLE BOARD ACTION

V. DISABILITY RETIREMENT APPLICATION(S)

A. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54957(b) TO CONSIDER THE DISABILITY RETIREMENT APPLICATION OF BELARMINA CARRERA AND POSSIBLE BOARD ACTION

VI. LEGAL/LITIGATION

- **A. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54956.9 (D)(4) TO CONFER WITH AND RECEIVE ADVICE FROM LEGAL COUNSEL REGARDING PENDING LITIGATION (ONE CASE) AND POSSIBLE BOARD ACTION**

VII. INVESTMENTS

- **A. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54956.81 TO CONSIDER THE PURCHASE OF ONE (1) PARTICULAR, SPECIFIC REAL ESTATE INVESTMENT AND POSSIBLE BOARD ACTION**
- B. CHIEF INVESTMENT OFFICER VERBAL REPORT
- C. PRESENTATION BY CLEARBRIDGE INVESTMENTS, LLC REGARDING ESG INVESTING
- D. PRESENTATION BY PRINCIPLES FOR RESPONSIBLE INVESTMENT (PRI) REGARDING SIGNATORY MEMBERSHIP

VIII. COMMITTEE REPORTS(S)

- A. AUDIT COMMITTEE AND INTERNAL AUDIT CHARTER UPDATES AND POSSIBLE BOARD ACTION

IX. GENERAL MANAGER VERBAL REPORT

- A. REPORT ON DEPARTMENT OPERATIONS
- B. UPCOMING AGENDA ITEMS

X. CONSENT AGENDA

- A. BENEFITS PAYMENTS APPROVED BY GENERAL MANAGER
- B. MARKETING CESSATION NOTIFICATION

XI. OTHER BUSINESS

XII. NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, November 27, 2018 at 10:00 a.m. in the LACERS Ken Spiker Boardroom, 202 West First Street, Suite 500, Los Angeles, CA 90012-4401.

XIII. ADJOURNMENT

MINUTES OF THE SPECIAL MEETING

BOARD OF ADMINISTRATION

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Los Angeles Zoo
5333 Zoo Drive
Los Angeles, California 90027

October 16, 2018

9:05 a.m.

Agenda of: **Nov. 13, 2018**

Item No: **II**

PRESENT:	President:		Cynthia M. Ruiz
	Vice President:	(arrived at 11:12 a.m.)	Elizabeth L. Greenwood
	Commissioners:	(arrived at 9:15 a.m.)	Elizabeth Lee
			Sandra Lee
			Nilza R. Serrano
			Sung Won Sohn
			Michael R. Wilkinson
	Manager-Secretary:		Neil M. Guglielmo
	Executive Assistant:		Ani Ghoukassian
	Legal Counsel:		Anya Freedman

The Items in the Minutes are numbered to correspond with the Agenda.

I

PUBLIC COMMENTS ON MATTERS WITHIN THE BOARD'S JURISDICTION – President Ruiz asked if there were any persons who wished to speak on matters within the Board's jurisdiction, to which there was no response and no public comment cards were received.

II

BOARD PRESIDENT WELCOME – President Ruiz thanked all of the attendees for attending and participating in the LACERS Strategic Planning Session.

III

GENERAL MANAGER OPENING – Neil M. Guglielmo, General Manager, provided an overview for the LACERS Strategic Planning Session and thanked all the attendees for engaging and participating in the experience.

IV

LACERS STRATEGIC PLANNING SESSION – Diana Del Bel Belluz, Consultant from Cortex introduced herself and discussed the plans and goals for the Strategic Planning Session.

The attendees were dismissed for lunch at 12:35 p.m. and returned at 1:07 p.m.

After discussion, the attendees separated into breakout sessions: Customer Service, Benefit Delivery, Health & Wellness, Investment, Board Governance, Organization, and Human Capital. The breakout session group leaders then each listed key items to tackle for each of the groups. Ms. Del Bel Belluz from Cortex stated that she and her team will compile the findings from the Strategic Planning Meeting into a report for LACERS.

Vice President Greenwood left the meeting at 12:45 p.m. and Commissioner Sandra Lee left the meeting at 2:50 p.m.

V

NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, October 23, 2018 at 10:00 a.m. in the LACERS Ken Spiker Boardroom, 202 West First Street, Suite 500, Los Angeles, CA 90012-4401.

VI

ADJOURNMENT – President Ruiz adjourned the Special meeting at 3:38 p.m.

Cynthia M. Ruiz
President

Neil M. Guglielmo
Manager-Secretary

MINUTES OF THE REGULAR MEETING
BOARD OF ADMINISTRATION
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

LACERS Ken Spiker Boardroom
202 West First Street, Fifth Floor
Los Angeles, California

October 23, 2018

10:04 a.m.

Agenda of: Nov. 13, 2018

Item No: II

PRESENT:	President:	Cynthia M. Ruiz
	Vice President:	Elizabeth L. Greenwood
	Commissioners:	Elizabeth Lee Sandra Lee Nilza R. Serrano Michael R. Wilkinson
	Manager-Secretary:	Neil M. Guglielmo
	Executive Assistant:	Ani Ghoukassian
	Legal Counsel:	Anya Freedman
ABSENT:	Commissioners:	Sung Won Sohn

The Items in the Minutes are numbered to correspond with the Agenda.

I

PUBLIC COMMENTS ON MATTERS WITHIN THE BOARD'S JURISDICTION – President Ruiz asked if there were any persons who wished to speak on matters within the Board's jurisdiction, to which there was no response and no public comment cards were received.

II

APPROVAL OF MINUTES FOR REGULAR BOARD MEETING OF OCTOBER 9, 2018 AND POSSIBLE BOARD ACTION – A motion to approve the Regular Board Meeting minutes of October 9, 2018 was moved by Commissioner Elizabeth Lee, seconded by Commissioner Serrano, and adopted by the following vote: Ayes, Commissioners Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, and President Ruiz -5; Nays, None.

III

BOARD PRESIDENT VERBAL REPORT – President Ruiz thanked all the attendees and participants of the Strategic Plannning Off-Site Meeting held at the Los Angeles Zoo on October 16, 2018. She also thanked the Los Angeles Zoo for the use of their facility for the Strategic Planning Meeting.

IV

GENERAL MANAGER VERBAL REPORT

A. REPORT ON DEPARTMENT OPERATIONS – Neil M. Guglielmo, General Manager, discussed the following items:

- Board Off-Site Meeting was very productive and both the Board and staff were engaged.
- LACERS awarded the Public Pension Standards Award for Funding and Administration by the Public Pension Coordinating Council for meeting professional standards for planned funding and administration and meeting requirements in five key areas: comprehensive benefit program, actuarial, audit, investments, and communications.
- LACERS staff provided requested documents to Commission on Revenue Generation.
- LACERS Customer Service Satisfaction at 97% based on the 2018 3rd Quarter Customer Service Surveys Report.
- More Open Enrollment session events coming up. A service at the events called Mom's Computer helps members use computers and electronic devices.
- Open Enrollment materials distributed to the Board.
- Alex Software is live and has been used by 306 users to date.
- Slight increase in Airport Peace Officers signing up for enhanced benefits.
- LACERS Holiday Party will be held in Pasadena on December 13, 2018.

B. UPCOMING AGENDA ITEMS – Neil M. Guglielmo, General Manager, stated there will be a Cyber Security Ad Hoc Committee meeting in November.

C. GENERAL MANAGER RESPONSE TO BOARD ON QUESTION REGARDING PROPOSITION 8 – Three public comment cards were submitted to the Commission Executive Assistant. President Ruiz announced that she received the three public comment cards regarding Item IV-C. The public comment cards were submitted by Kim Berzie with SEIU-UHW, Magellan, a Dialysis Nurse, and Myran Cotton, City of Los Angeles retiree and member of SEIU 721. Neil M. Guglielmo, General Manager, discussed this item with the Board. The Report was received by the Board and filed. The Board took no action as the item was not agendized for Board action.

V

CONSENT AGENDA

A. MONTHLY REPORT ON SEMINARS AND CONFERENCES FOR SEPTEMBER 2018 – The report was received by the Board and filed.

B. RECEIVE AND FILE – COMMISSIONER ELIZABETH LEE BOARD EDUCATION EVALUATION ON THE FIDUCIARY INVESTORS SYMPOSIUM, STANFORD, CALIFORNIA, SEPTEMBER 30 – OCTOBER 2, 2018 – The report was received by the Board and filed.

VI

COMMITTEE REPORTS(S)

A. AUDIT COMMITTEE VERBAL REPORT ON THE MEETING OF OCTOBER 23, 2018 – Commissioner Elizabeth Lee stated that since the Brown Armstrong reporesentative was absent, Rahoof “Wally” Oyewole, LACERS Departmental Audit Manager, discussed the 2018 Financial Statement Audit. Mr. Oyewole also discussed the Internal Audit and Audit Committee Charter Updates with the Committee. In addition, the Update on 2014 Management Audit was received by the Committee and filed.

VII

INVESTMENTS

A. CHIEF INVESTMENT OFFICER VERBAL REPORT – Bryan Fujita, Chief Operaing Officer, reported on the portfolio value, $17.06 Billion as of October 22, 2018. Mr. Fujita stated that Robert Miranda will be leaving Townsend Group. He also stated there will be Board education at a future meeting regarding Environmental, Social and Governance (ESG).

B. INVESTMENT MANAGER SEARCHES FOR MULTIPLE ASSET CLASS MANDATES AND POSSIBLE BOARD ACTION – Bryan Fujita, Chief Operating Officer, Barbara Sandoval, Investment Officer II, and Jimmy Wang, Investment Officer I, presented this item to the Board. Vice President Greenwood moved approval, seconded by Commissioner Serrano and adopted by the following vote: Ayes, Commissioners Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Greenwood and President Ruiz -6; Nays, None.

C. PRIVATE EQUITY PROGRAM 2019 STRATEGIC PLAN AND POSSIBLE BOARD ACTION – David Fann, President, Heidi Poon, Senior Vice President and Jeff Goldberger, Senior Vice President with TorreyCove Capital Partners presented this item to the Board. Commissioner Elizabeth Lee moved approval, seconded by Vice President Greenwood and adopted by the following vote: Ayes, Commissioners Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Greenwood and President Ruiz -6; Nays, None.

President Ruiz adjourned the Regular Meeting at 11:51 a.m. to convene in Closed Session. James Napier, Deputy City Attorney, was present for the Closed Session items for Disability Retirement Applications and Anya Freedman, Assistant City Attorney, was present for Closed Session items VII-D and IX-A.

D. **CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54956.81 TO CONSIDER THE PURCHASE OF ONE (1) PARTICULAR, SPECIFIC REAL ESTATE INVESTMENT AND POSSIBLE BOARD ACTION**

VIII

DISABILITY RETIREMENT APPLICATION(S)

A. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54957(b) TO CONSIDER THE DISABILITY RETIREMENT APPLICATION OF CHRISTOPHER BERNARD AND POSSIBLE BOARD ACTION

B. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54957(b) TO CONSIDER THE DISABILITY RETIREMENT APPLICATION OF ELAINE GOOD AND POSSIBLE BOARD ACTION

IX

LEGAL/LITGATION

A. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54956.9 (D)(4) TO CONFER WITH AND RECEIVE ADVICE FROM LEGAL COUNSEL REGARDING PENDING LITIGATION (ONE CASE) AND POSSIBLE BOARD ACTION

President Ruiz reconvened the Regular Meeting at 12:31 p.m. and announced that during Closed Session the Board unanimously approved the Real Estate Investment and the Disability Retirement Applications of Christopher Bernard and Elaine Good. She also announced that the Board conferred with and received legal advice from counsel.

X

OTHER BUSINESS – There was no other business.

XI

NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, November 13, 2018 at 10:00 a.m. in the LACERS Ken Spiker Boardroom, 202 West First Street, Suite 500, Los Angeles, CA 90012-4401.

XII

ADJOURNMENT – There being no further discussion before the Board, President Ruiz adjourned the meeting at 12:31 p.m.

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Cynthia M. Ruiz
President

____
Neil M. Guglielmo
Manager-Secretary

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

Report to Board of Administration

Neil M. Guglielmo

From: Neil M. Guglielmo, General Manager

Agenda of: **NOVEMBER 13, 2018**

ITEM: **IV-A**

SUBJECT: **ACTUARIAL VALUATIONS AS OF JUNE 30, 2018 INCLUDING PROPOSED CITY CONTRIBUTION RATES FOR FISCAL YEAR 2019-20 AND POSSIBLE BOARD ACTION**

Recommendation

That the Board adopt the Actuarial Valuation and Review of Retirement and Health Benefits reports of its consulting actuary, Segal Consulting, for the period ending June 30, 2018, including:

1) *Retirement Benefits Actuarial Valuation* and *Other Postemployment Benefits Actuarial Valuation* which establish the recommended City contribution rates for Fiscal Year 2019-20; and,

2) *Governmental Accounting Standards (GAS) 67 Pension Valuation* and *GAS 74 Other Post-Employment Benefit (OPEB) Valuation* which provide the financial disclosures to meet reporting requirements of the Governmental Accounting Standards Board.

Discussion

The Board's consulting actuary, Segal Consulting (Segal), performed an annual actuarial valuation of the retirement benefits and the retiree health benefits of LACERS based on census data as of June 30, 2018 (see Attachment). The actuarial valuation determines LACERS' funded status as of June 30, 2018 and the City's contribution rates for the next fiscal year. The report also updates actuarial and demographic information about LACERS and its Members.

Segal prepared separate valuation reports in accordance with the requirements of the Governmental Accounting Standards Board (GASB) Statements No. 67 – *Financial Reporting for Pension Plans* and No. 74 – *Financial Reporting for Postemployment Benefit Plans* (see Attachment). Information from these valuations will be reported in LACERS' June 30, 2018 financial statements.

Significant Valuation Results

Valuation Ending	**June 30, 2018**	**June 30, 2017**	**Percent Change**
Total System Assets			
A. Actuarial Value	$16,687,907,767	$15,686,973,131	6.4%
B. Market Value	16,989,616,344	15,689,570,310	8.3%
Unfunded Actuarial Accrued Liability (UAAL)			
A. Retirement Benefits	$5,962,143,593	$5,279,854,069	12.9%
B. Health Subsidy Benefits	627,984,336	567,348,102	10.7%
Funded Ratio (Based on Valuation Value of Assets)			
A. Retirement Benefits	70.1%	71.4%	(1.3)%
B. Health Subsidy Benefits	80.7%	81.1%	(0.4)%
C. Total	71.6%	72.8%	(1.2)%

The City's contribution is the sum of the Normal Cost plus an amortized payment of the Unfunded Actuarial Accrued Liability (UAAL). The Normal Cost is the portion of the actuarial present value of LACERS' plan benefits which is allocated to a valuation year using LACERS' adopted cost method – Entry Age Normal. The amortization of the UAAL is the payment stream required to fund the difference between the actuarial accrued liabilities and the actuarial value of assets, determined by methods prescribed by LACERS Amortization Policy. Following are the recommended City contribution rates as a percentage of the City payroll for Fiscal Year 2019-20 if received by July 15, 2019, as compared with current rates:

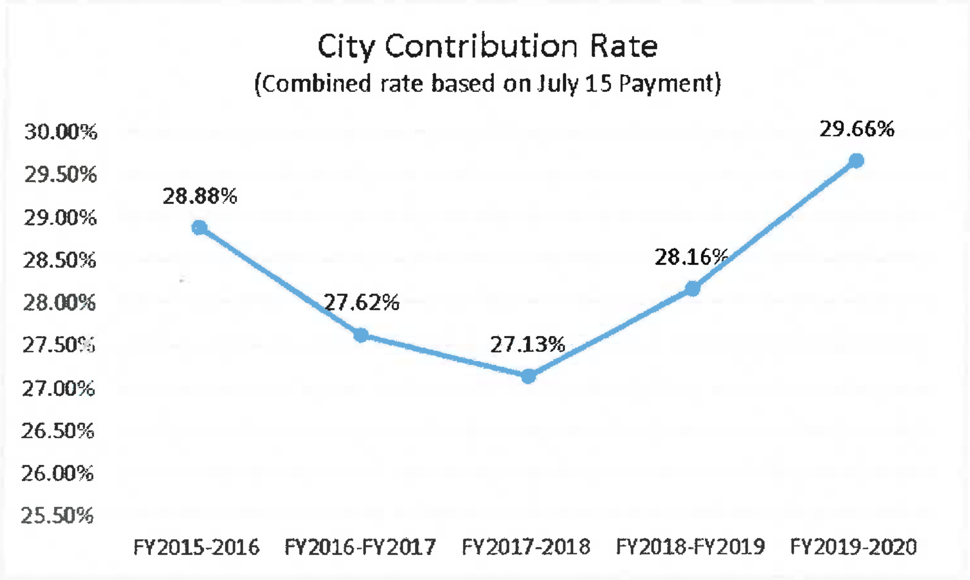
As a Percentage of City Payroll	**Recommended Rates Tier 1 and Tier 3 Combined FY 2019-20**	**Current Rates Tier 1 and Tier 3 Combined FY 2018-19**	**Difference**
Retirement	24.75%	23.06%	1.69%
Health	4.91%	5.10%	(0.19)%
Total	**29.66%**	**28.16%**	**1.50%**

The above Fiscal Year 2019-20 contribution rates reflect decisions made by the Board on August 14, 2018 and September 25, 2018 respectively as follows:

- The Board adopted demographic assumption changes including revising the mortality tables from static to generational. Economic assumptions remained unchanged at 7.25% rate-of-return and 3.00% inflation.

- The Board adopted annual actuarial assumptions for the June 30, 2018 *Retiree Health Actuarial Valuation*.

The full impact of assumption changes attributable to the June 30, 2017 triennial experience study review is 2.09% of pay for Tier 1 and Tier 3 combined. However, the impact is mitigated by experience gains such as lower than expected 2018/19 premium and subsidy levels. Overall, the recommended City contribution rate for Fiscal Year 2019-20 is 1.50% higher than the current year rate.



Other highlights of the valuation reports are as follows:

- The ratio of actuarial value of assets to actuarial accrued liabilities for retirement benefits decreased year-over-year from 71.4% to 70.1%. On a market value basis, the funded ratio for the retirement benefits remained steady at 71.4%.

- The funded ratio for the retiree health benefits on an actuarial basis decreased year-over-year from 81.1% to 80.7%. On a market value basis, the funded ratio for retiree health benefits increased from 81.1% to 82.2%.

- The actuarial value of total system assets as of June 30, 2018 increased 6.4% over the prior year, from $15.7 billion to $16.7 billion. On a market value basis, there was an 8.3% increase in assets from $15.69 billion to $16.99 billion.

- The UAAL for the retirement benefit increased 12.9% over the prior year, from $5.28 billion to $5.96 billion. For the retiree health benefits, the UAAL increased 10.7% over the prior year, from $567 million to $628 million. The total UAAL for both the retirement benefits and the retiree health benefits as of June 30, 2018 is $6.59 billion. Compared to the previous year, the total UAAL increased by $743 million, primarily due to assumption changes resulting in a $594 million ($484 million for the retirement benefit and $110 million for the retiree health benefits) increase to the UAAL; and a greater than assumed increase in salaries resulting in a $133 million increase to the retirement benefits' UAAL.

- As part of this valuation, actual membership information was available for the first time for Airport Peace Officers who elected to stay at LACERS and therefore entitled to enhanced Tier I retirement benefits, pursuant to adopted Ordinance No. 184853. The resultant change in the Normal Cost contribution rate is 0.06%.

- The Net Pension Liability (NPL) was determined to be $5.71 billion as of June 30, 2018 for the retirement benefits, compared to $5.28 billion as of June 30, 2017. The NPL is a required disclosure in the financial notes of a pension plan pursuant to GAS 67, and a required disclosure as a liability in the plan sponsor's financial statements pursuant to GAS 68 – *Accounting and Financial Reporting for Pensions*. The NPL measure differs from the UAAL as it is calculated on a market value basis and reflects all investment gains and losses as of the measurement date. Another required disclosure under GAS 67 is the Plan Fiduciary Net Position as a percentage of Total Pension Liability, which is 71.4% as of June 30, 2018, the same as the funded ratio on a market value basis reported in the *Retirements Benefit Actuarial Valuation*.

- The Net OPEB Liability (NOL) was determined to be $580.5 million as of June 30, 2018 for the retiree health benefits, compared to $566.9 million as of June 30, 2017. The NOL is a required disclosure in the financial notes of an OPEB plan pursuant to GAS 74, and a required disclosure as a liability in the plan sponsor's financial statements pursuant to GAS 75 – *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. Additionally, GAS 74 requires disclosure of the Plan Fiduciary Net Position as a percentage of Total OPEB Liability, which is 82.2% as of June 30, 2018, the same as the funded ratio on a market value basis reported in the *Other Postemployment Benefits Actuarial Valuation.*

- The GAS 74 valuation report provides a required and unique disclosure on the sensitivity of the NOL to changes in the medical trend rate at one percentage point higher and one percentage point lower than the current assumed rate.

- The GAS 67 valuation, Exhibit 5, demonstrates that the LACERS Retirement Plan's Fiduciary Net Position (Assets) was projected to be sufficient to make all projected future benefit payments for current members and their beneficiaries through 2116 when the last payment is due, under current actuarial assumptions including the 7.25% assumed rate of investment return.

Note for future valuation reports:

- The Actuarial Standards Board approved a new Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment. ASOP 51 will be effective with LACERS' June 30, 2019 actuarial valuation. ASOP 51 requires actuaries to identify risks that "may reasonably be anticipated to significantly affect the plan's future financial condition."

Paul Angelo of Segal Consulting will present the above-mentioned June 30, 2018 actuarial valuation reports.

This report was prepared by Todd Bouey, Assistant General Manager and Dale Wong-Nguyen, Chief Benefits Analyst.

NMG:TB:DWN

Attachment: Segal Actuarial Valuation and Review of Retirement and Health Benefits as of June 30, 2018.

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Retirement and Health Benefits as of June 30, 2018

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

100 MONTGOMERY STREET, SUITE 500 SAN FRANCISCO, CA 94104
T 415.263.8200 www.segalco.com

November 7, 2018

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

Re: June 30, 2018 Actuarial Valuations

Dear Board Members:

Enclosed please find the June 30, 2018 actuarial valuations for the retirement and health 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,

Andy Yeung

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

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

DNA/gxk

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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.

Exhibit A

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

		June 30, 2018	June 30, 2017	Percent Change
I.	**Total Membership**			
	A. Active Members	26,042	25,457	2.3%
	B. Pensioners and Beneficiaries	19,379	18,805	3.1%
II.	**Valuation Salary**			
	A. Total Annual Projected Payroll	$2,177,687,102	$2,062,316,129	5.6%
	B. Average Projected Monthly Salary	6,969	6,751	3.2%
III.	**Benefits to Current Retirees and Beneficiaries**(1)			
	A. Total Annual Benefits	$880,071,707	$819,515,912	7.4%
	B. Average Monthly Benefit Amount	3,784	3,632	4.2%
IV.	**Total System Assets**(2)			
	A. Actuarial Value	$16,687,907,767	$15,686,973,131	6.4%
	B. Market Value	16,989,616,344	15,689,570,310	8.3%
V.	**Unfunded Actuarial Accrued Liability (UAAL)**			
	A. Retirement Benefits	$5,962,143,593(3)	$5,279,854,069(4)	12.9%
	B. Health Subsidy Benefits	627,984,336(3)	567,348,102(4)	10.7%

(1) *Includes July COLA.*

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

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

(4) *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

VI.	Budget Items (as a Percent of Pay)[1]	FY 2019-2020		FY 2018-2019		Difference	
		Beginning of Year[2]	July 15	Beginning of Year	July 15	Beginning of Year	July 15
	A. Retirement Benefits (Tier 1 and Tier 3 Combined)						
	1. Normal Cost	6.38%	6.41%	6.50%	6.51%	(0.12)%	(0.10)%
	2. Amortization of UAAL	18.29%	18.34%	16.49%	16.55%	1.80%	1.79%
	3. Total Retirement Contribution	24.67%	24.75%	22.99%	23.06%	1.68%	1.69%
	B. Health Subsidy Benefits (Tier 1 and Tier 3 Combined)						
	1. Normal Cost	3.42%	3.44%	3.61%	3.63%	(0.19)%	(0.19)%
	2. Amortization of UAAL	1.47%	1.47%	1.47%	1.47%	0.00%	0.00%
	3. Total Health Subsidy Contribution	4.89%	4.91%	5.08%	5.10%	(0.19)%	(0.19)%
	C. Total Contribution (A + B)	29.56%	29.66%	28.07%	28.16%	1.49%	1.50%

VII.	Funded Ratio	June 30, 2018[1]	June 30, 2017	Difference
	(Based on Valuation Value of Assets)			
	A. Retirement Benefits	70.1%	71.4%	(1.3)%
	B. Health Subsidy Benefits	80.7%	81.1%	(0.4)%
	C. Total	71.6%	72.8%	(1.2)%
	(Based on Market Value of Assets)			
	D. Retirement Benefits	71.4%	71.4%	0.0%
	E. Health Subsidy Benefits	82.2%	81.1%	1.1%
	F. Total	72.9%	72.8%	0.1%

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

[2] *Alternative contribution payment date for FY 2019-2020:*

	Retirement	*Health*	*Total*
End of Pay Periods	*25.56%*	*5.07%*	*30.63%*

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
06/30/2018	25.56%	5.07%	30.63%	2,177,687

(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(1)	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
06/30/2018	2,354,026	11,079,053	6,511,500	13,982,435	100.0	100.0	8.4

(1) *Excludes assets transferred for Port Police.*

Exhibit D

Los Angeles City Employees' Retirement System
Retirees and Beneficiaries Added To and Removed From the Rolls[1]
For Years Ended June 30

Year Ended	No. of New Retirees/ Beneficiaries	Annual Allowances Added[2]	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
06/30/2018	1,312	86,917,553	738	26,361,758	19,379	880,071,707	7.4%	45,414

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

(2) *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, 2018

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, 2018

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, 2018. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2019/2020 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:

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

Andy Yeung

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

JRC/bbf

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, 2018. 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, 2018, provided by LACERS;
- The assets of the Plan as of June 30, 2018, 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:

Ref: Pgs. 38 and 16

- The results of this valuation reflect changes in the actuarial assumptions adopted by the Board on August 14, 2018. These new assumptions are described in Section 4, Exhibit III of this report. These assumption changes, in particular, the use of generational mortality tables to reflect future mortality improvement, resulted in an increase in the combined (Tier 1 and Tier 3) City contribution rate of 1.68% of payroll.

Ref: Pg. 13

- As part of this valuation, we obtained actual membership information available for the first time for the employees at the Airport who elected to stay at LACERS, and would therefore be entitled to enhanced Tier 1 benefits, instead of transferring to LAFPP on January 7, 2018. Using that data and applying the method we previously discussed with LACERS, we have calculated the increase in normal cost by comparing the normal cost for the Airport Peace Officers (APO) before and after the enhancement. The change in normal cost contribution amounts, expressed as a percentage of the City's entire Tier 1 payroll, is provided in Chart 14 of this report.

  Similarly, we have estimated the increase in the unfunded actuarial accrued liability (UAAL) to improve past service earned through January 6, 2018 from Tier 1 to enhanced Tier 1 by using salary and other demographic information reported in the June 30, 2018 valuation. That increase in UAAL was calculated based on service earned through

January 6, 2018.[1] That increase in the UAAL was determined using the actuarial assumptions in the June 30, 2018 valuation and has been adjusted to reflect the anticipated payment of the $5,700 required to receive the enhanced benefits by every APO member with past service. We have further adjusted the change in UAAL to reflect the UAAL contributions paid by the Airport for the period January 7, 2018 to June 30, 2018, and for the period July 1, 2018 to June 30, 2019. That change in UAAL, reflecting all those adjustments, was used in determining the change in UAAL contribution amounts, expressed as a percentage of the City's entire Tier 1 and Tier 3 payroll, as shown in Chart 14.

Ref: Pgs. 18 and 28

- The ratio of the valuation value of assets to actuarial accrued liabilities decreased from 71.40% to 70.11%. On a market value of assets basis, the funded ratio decreased from 71.41% to 71.37%. The UAAL increased from $5.280 billion to $5.962 billion. The increase was due to: (i) actual contributions less than expected as a result of the anticipated one-year delay in implementing the higher contribution rate in the prior valuation, (ii) higher than expected salary increases for continuing active members, (iii) changes in the actuarial assumptions, (iv) adoption of enhanced Tier 1 benefits for APO members, and (v) other miscellaneous actuarial losses, offset somewhat by (vi) a higher than expected return on the valuation value of assets (after smoothing) and (vii) lower than expected COLAs granted to retirees and beneficiaries. A complete reconciliation of the System's UAAL is provided in Section 3, Exhibit G. A schedule of the current UAAL amortization amounts is provided in Section 3, Exhibit H. Note that a graphical presentation of the UAAL amortization bases and payments has been provided as a new Exhibit I in Section 3.

Ref: Pg. 16

- The aggregate employer rate (if received on July 15) calculated in this valuation has increased from 23.06% of payroll (after reflecting enhanced benefits for APO) to 24.75% of payroll. The annual dollar employer contributions calculated in this valuation increased from about $475.7 million (after reflecting enhanced benefits for APO) to $539.0 million. The increase in the employer rate was due to: (i) actual contributions less than expected as a result of the anticipated one-year delay in implementing the higher contribution rate calculated in the prior valuation, (ii) higher than expected salary increases for continuing active members, (iii) changes in the actuarial assumptions, (iv) actual enhanced Tier 1 enrollment compared to expected, and (v) other miscellaneous actuarial losses, offset somewhat by (vi) a decrease in the normal cost rate due, in part, to the enrollment of new employees in Tier 3, (vii) a higher than expected return on the valuation value of assets (after smoothing), (viii) amortizing the prior year's UAAL over a larger than expected projected total payroll, and (ix) lower than expected COLAs granted to retirees and beneficiaries. A complete reconciliation of the aggregate employer contribution is provided in Section 2, Chart 15.
- Based on action taken by the Board on July 24, 2018, the net amount of unrecognized investment gain as of June 30, 2017 (i.e., $2,597,179) has been recognized in six level amounts, with five years of recognition remaining after the June 30, 2018 valuation.

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[1] *We have excluded benefit enhancement for service earned after January 6, 2018 because higher normal cost contributions would have already been paid by the Airport.*

Ref: Pg. 5

- As indicated in Section 2, Subsection B of this report, the total net unrecognized investment gain as of June 30, 2018 is $301,708,577[2] for the assets for Retirement, Health, Family Death, and Larger Annuity Benefits. This net 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 a net investment gain on the actuarial value of assets after June 30, 2018. Item 9 in Chart 7 shows how, under the asset smoothing method, the $301.7 million in unrecognized gains will be recognized in the next six years.

  The net deferred gain of $301.7 million represent 1.78% of the market value of assets as of June 30, 2018. Unless offset by future investment losses or other unfavorable experience, the recognition of the net $301.7 million market gain is expected to have an impact on the System's future funded percentage and contribution rate requirements. This potential impact may be illustrated as follows:

  - If the retirement plan component of the deferred gains were recognized immediately in the valuation value of assets, the funded percentage would increase from 70.11% to 71.37%.

    For comparison purposes, if all the net deferred gains for the retirement plan in the June 30, 2017 valuation had been recognized immediately in the June 30, 2017 valuation, the funded percentage would have increased 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 (if received on July 15, 2019) would decrease from 24.75% to about 23.77% of payroll.

    For comparison purposes, if all the net deferred gains for the retirement plan in the June 30, 2017 valuation had been recognized immediately in the June 30, 2017 valuation, the aggregate employer rate (if received on July 15, 2018) would have decreased from 23.06% of payroll to 23.05% of payroll.

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

  (1) The beginning of the fiscal year, or

  (2) On July 15, 2019, or

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

---

[2] *For comparison purposes, the total net unrecognized investment gain as of June 30, 2017 was $2,597,179.*

Ref: Pg. 29

- Carrying over the prior instructions from the Board of Administration, the recommended contribution is set equal to the contributions under the current funding policy plus 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 amortization of the 40-year minimum for 2003/2004 and 2004/2005 will be fully completed in the next two valuations.
- The actuarial valuation report as of June 30, 2018 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.

Impact of Future Experience on Contribution Rates

Future contribution requirements may differ from those determined in the valuation because of:

1) difference between actual experience and anticipated experience;
2) changes in actuarial assumptions or methods;
3) changes in statutory provisions; and
4) difference between the contribution rates determined by the valuation and those adopted by the Board.

New Actuarial Standard of Practice on Risk Assessment

The Actuarial Standards Board approved a new Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment. ASOP 51 will be effective with LACERS’ June 30, 2019 actuarial valuation. ASOP 51 requires actuaries to identify risks that “may reasonably be anticipated to significantly affect the plan’s future financial condition”. Investment risk, asset/liability mismatch risk, interest rate risk, longevity and other demographic risks and contribution risk are also cited as examples in ASOP 51. The standard does not require the actuary to evaluate the likelihood of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

The actuary’s assessment can be qualitative or quantitative (e.g., based on numerical demonstrations). The actuary may use non-numerical methods for assessing risks that might take the form of commentary about potential adverse experience and the likely effect on future results. While the standard does not require that every valuation include a quantitative risk assessment, the actuary may recommend that a more detailed risk assessment be performed. When making that decision, the actuary will take into account such factors as the Plan’s design, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

We will discuss with LACERS what would be most appropriate to include in LACERS’ risk report for the June 30, 2019 valuation.

Summary of Key Valuation Results

	2018	2017
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	24.98%	23.17%
On July 15	25.06%	23.25%
At the end of each pay period	25.88%	24.00%
Tier 3		
At the beginning of the year	22.05%	20.15%
On July 15	22.12%	20.20%
At the end of each pay period	22.85%	20.86%
Combined		
At the beginning of the year	24.67%	22.99%
On July 15	24.75%	23.06%
At the end of each pay period	25.56%	23.81%
Funding elements for plan year ended June 30:		
Normal cost	$370,409,073[1]	$352,282,612[2]
Market value of assets (MVA)[3]	16,989,616,344	15,689,570,310
Actuarial value of assets (AVA)[3]	16,687,907,767	15,686,973,131
Valuation value of retirement assets (VVA)	13,982,435,465	13,178,333,884
Market value of retirement assets (MVA)	14,235,230,528	13,180,515,725
Actuarial accrued liability (AAL)	19,944,579,058[1]	18,458,187,953[2]
Unfunded actuarial accrued liability (UAAL) on VVA basis	5,962,143,593	5,279,854,069
Unfunded actuarial accrued liability (UAAL) on MVA basis	5,709,348,530	5,277,672,228
Funded ratio on VVA basis for retirement (VVA/AAL)	70.11%	71.40%
Funded ratio on MVA basis for retirement (MVA/AAL)	71.37%	71.41%

(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)

	2018	2017
Employer contributions for fiscal year ended June 30:		
Actuarially determined employer contributions	$450,195,254	$453,356,059
Actual contributions	450,195,254	453,356,059
Percentage contributed	100.00%	100.00%
Demographic data for plan year ended June 30:		
Number of retired members and beneficiaries	19,379	18,805
Number of inactive members	8,028	7,428
Number of active members	26,042	25,457
Projected total payroll(4)	$2,177,687,102	$2,062,316,129
Projected average payroll(4)	$83,622	$81,012

(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 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 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, 2018

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, 2018, 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, 2017. 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, 2018 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, 2018

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 of 7.25% and Preparation of GASB 67 Report as of June 30, 2018*

* Source: Segal's GASB Statement No. 67 valuation report as of June 30, 2018.

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, 2009 – 2018

Year Ended June 30	Active Members	Inactive Members*	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
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
2018	26,042	8,028	19,379	1.05

* *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 26,042 active members with an average age of 47.4, average years of service of 13.7 years and average payroll of $83,622.

The 25,457 active members in the prior valuation had an average age of 48.0, average service of 14.1 years and average payroll of $81,012.

Inactive Members

In this year’s valuation, there were 8,028 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 7,428 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, 2018

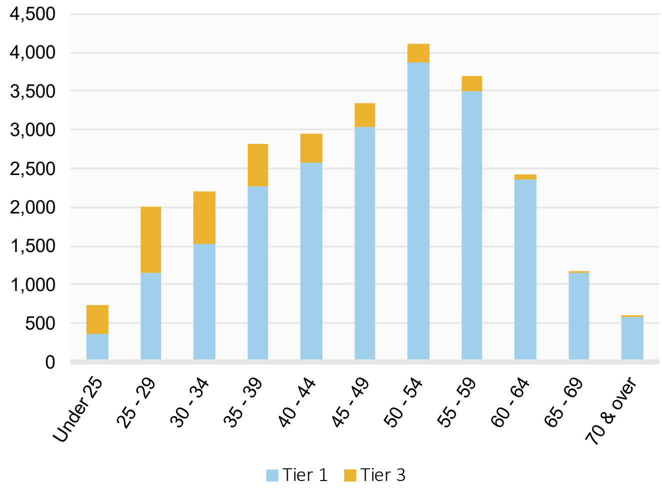
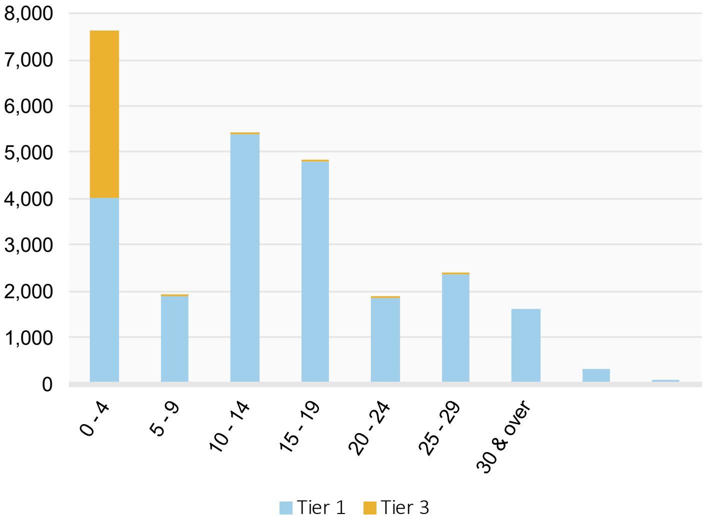


CHART 3

Distribution of Active Members by Years of Service as of June 30, 2018



Retired Members and Beneficiaries

As of June 30, 2018, 15,477 retired members and 3,902 beneficiaries were receiving total monthly benefits of $73,339,309. For comparison, in the previous valuation, there were 14,888 retired members and 3,917 beneficiaries receiving total monthly benefits of $68,292,993. 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, 2018

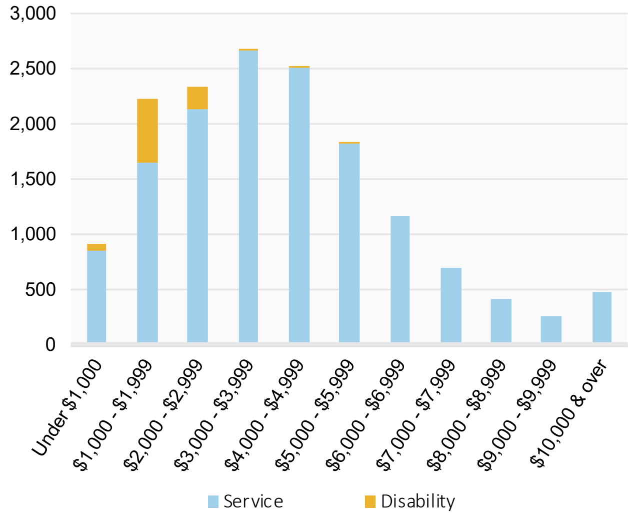
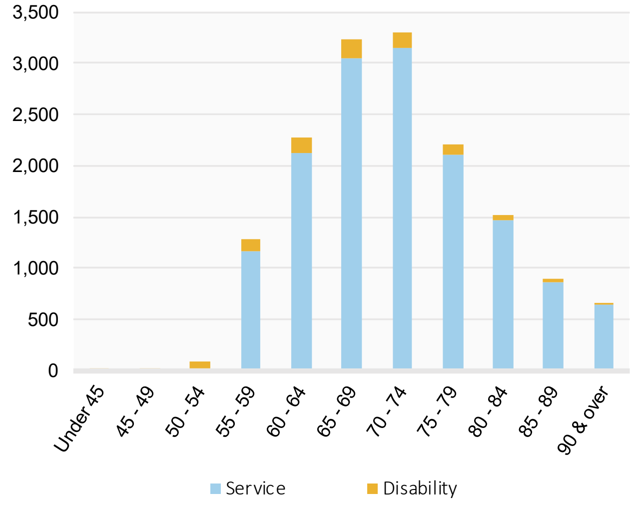


CHART 5

Distribution of Retired Members by Type and by Age as of June 30, 2018



B. FINANCIAL INFORMATION

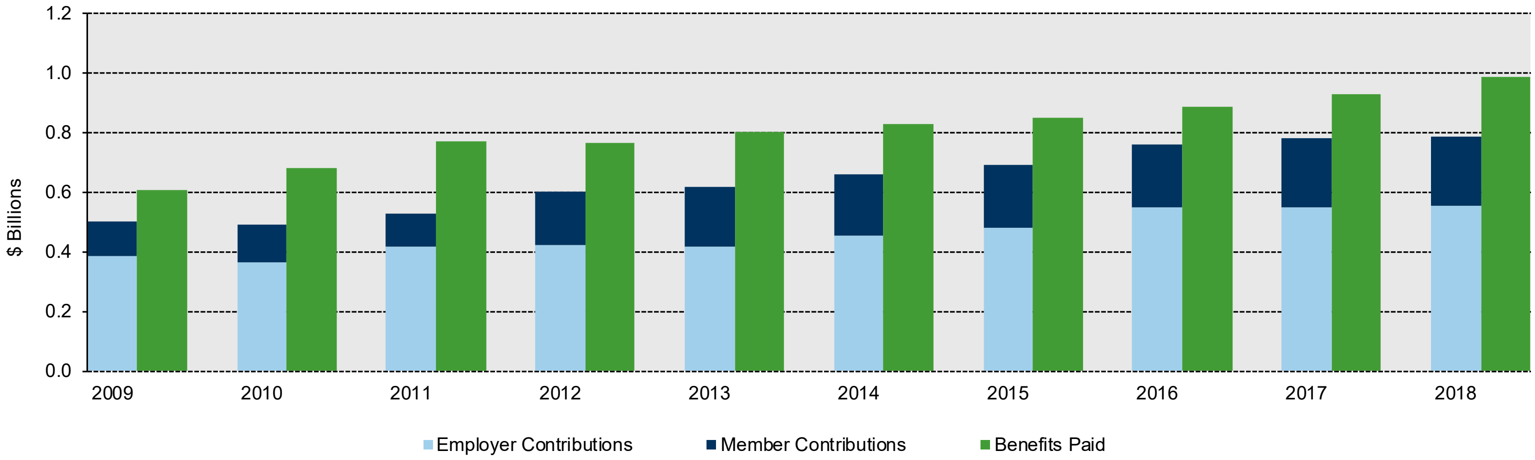
Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

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 two components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets due to contributions during each year while the second bar details the decreases due to benefit payments.

CHART 6

Comparison of Contributions with Benefits for Years Ended June 30, 2009 – 2018



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, 2018

		Original Amount	Portion Not Recognized	Amount Not Recognized	
1.	Market value of assets				$16,989,616,344
2.	Calculation of unrecognized return[1]				
	(a) Year ended June 30, 2018	$349,468,305	6/7	$299,544,261	
	(b) Year ended June 30, 2017	770,969,472			
	(c) Year ended June 30, 2016	-1,065,023,569			
	(d) Year ended June 30, 2015	-707,760,540	see footnote (2) below		
	(e) Year ended June 30, 2014	1,246,285,581			
	(f) Combined net deferred loss as of June 30, 2013	-81,571,421	5/6	2,164,316	
	(g) Total unrecognized return				$301,708,577
3.	Preliminary actuarial value: (1) - (2g)				$16,687,907,767
4.	Adjustment to be within 40% corridor				0
5.	Final actuarial value of assets: (3) + (4)				$16,687,907,767
6.	Actuarial value as a percentage of market value: (5) ÷ (1)				98.2%
7.	Market value of retirement assets				$14,235,230,528
8.	Valuation value of retirement assets (5) ÷ (1) x (7)				$13,982,435,465
9.	Deferred return recognized in each of the next 6 years:				
	(a) Amount recognized on 6/30/2019				$50,356,907
	(b) Amount recognized on 6/30/2020				50,356,907
	(c) Amount recognized on 6/30/2021				50,356,907
	(d) Amount recognized on 6/30/2022				50,356,907
	(e) Amount recognized on 6/30/2023				50,356,907
	(f) Amount recognized on 6/30/2024				49,924,044
	(g) Subtotal (may not total exactly due to rounding)				$301,708,577

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

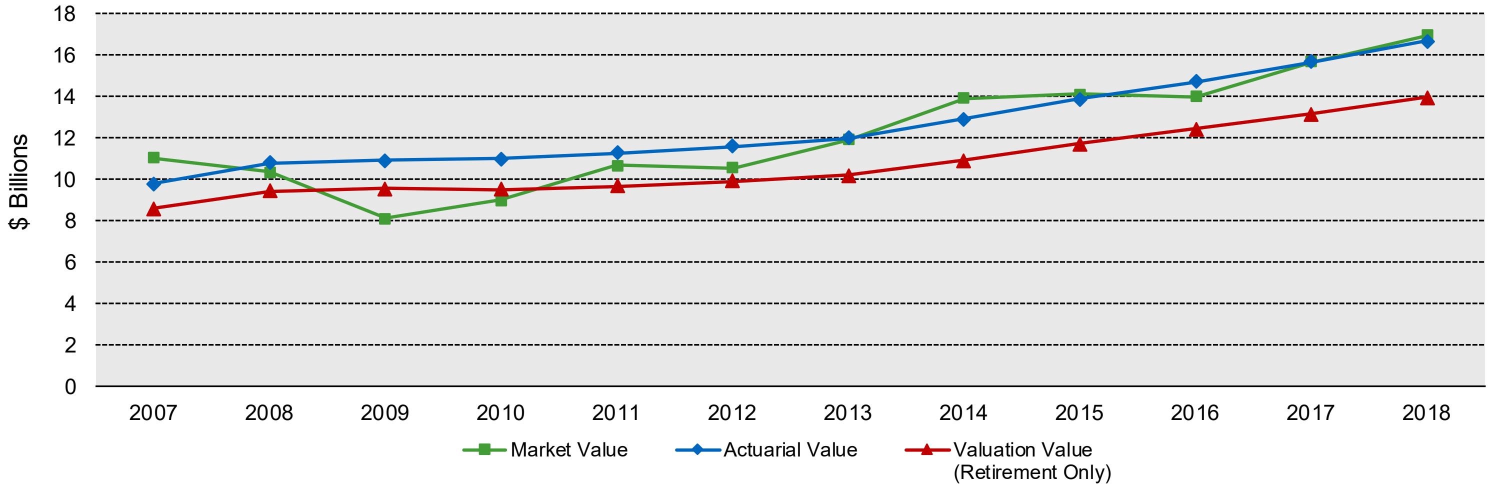
(2) *Based on action taken by the Board on July 24, 2018, the net unrecognized gain as of June 30, 2017 (i.e., $2,597,179) has been recognized in six level amounts, with five years of recognition remaining after the June 30, 2018 valuation.*

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 twelve years.

CHART 8

Market Value, Actuarial Value, and Valuation Value (Retirement Only) of Assets as of June 30, 2007– 2018



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 loss of $147,418,362 was due to an investment gain of $11,346,787 (after smoothing), and a loss of $158,765,149 from all other sources. The net experience variation from all other sources was 0.80% 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, 2018

1.	Net gain from investments*	$11,346,787
2.	Net loss from other experience**	-144,729,707
3.	Net loss from scheduled one-year delay in implementing the higher contribution rate calculated in the June 30, 2017 valuation until fiscal year 2018/2019	-14,035,442
4.	Net experience loss: (1) + (2) + (3)	-$147,418,362

* *Details in Chart 10.*

** *Details in Chart 13. The net loss is attributed to actual liability experience from July 1, 2017 through June 30, 2018 compared to the projected experience based on the actuarial assumptions as of June 30, 2017.*

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 7.25% (for the June 30, 2017 valuation). The actual rate of return on the valuation value of assets basis for the 2018 plan year was 7.34%.

Since the actual return for the year was more than the assumed return, LACERS experienced an actuarial gain during the year ended June 30, 2018 with regard to its investments.

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

CHART 10

Investment Experience for Year Ended June 30, 2018

	Market Value (Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits)	Actuarial Value (Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits)	Valuation Value (Includes assets for Retirement Only)
1. Actual return	$1,498,100,177	$1,198,988,779	$975,505,148
2. Average value of assets	$15,843,198,235	$15,840,601,056	$13,298,736,019
3. Actual rate of return: (1) ÷ (2)	9.46%	7.57%	7.34%
4. Assumed rate of return	7.25%	7.25%	7.25%
5. Expected return: (2) x (4)	$1,148,631,872	$1,148,443,577	$964,158,361
6. Actuarial gain/(loss): (1) – (5)	$349,468,305	$50,545,202	$11,346,787

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, 2009 – 2018

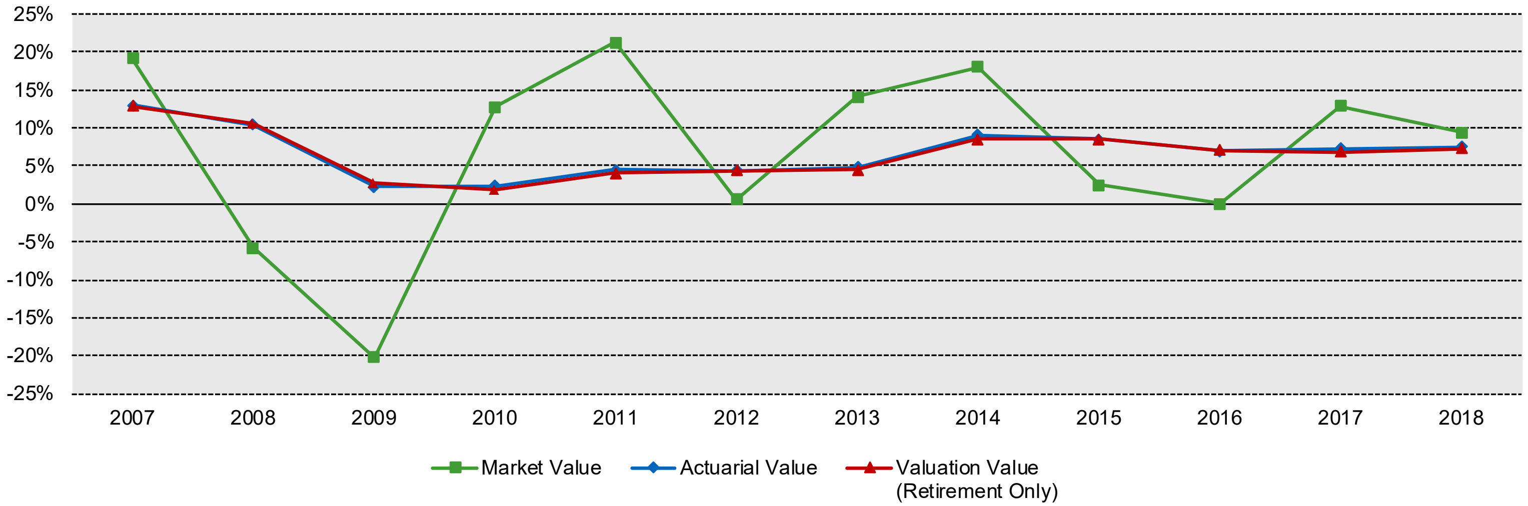
	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	**Amount**	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**
2009	$237,249,377	2.17%	$9,861,278	0.09%	$247,110,655	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%
2018	291,385,736	1.84%	907,603,043	5.73%	1,198,988,779	7.57%	1,498,100,177	9.46%
Total	$2,374,493,733		$5,196,270,508		$7,570,764,241		$8,306,120,104	
					Five-year average return:	7.89%		8.40%
					Ten-year average return:	5.76%		6.49%

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 - 2018.

CHART 12

Market Value, Actuarial Value, and Valuation Value (Retirement Only) Rates of Return for Years Ended June 30, 2007– 2018



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 loss from this other experience for the year ended June 30, 2018 amounted to $144,729,707 which is 0.73% of the actuarial accrued liability.

A brief summary of the demographic loss experience of LACERS for the year ended June 30, 2018 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, 2018

1.	Loss due to higher than expected salary increases for continuing actives	-$132,619,617
2.	Gain due to lower than expected COLA granted to retirees and beneficiaries	19,600,829
3.	Other demographic experience losses	-31,710,919
4.	Total loss	-$144,729,707

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 24.75% of payroll, if received by LACERS on July 15, 2019. The recommended contribution is set equal to the contributions under the current funding policy plus 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 amortization of the 40-year minimum for 2003/2004 and 2004/2005 will be fully completed in the next two valuations.

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		**2018**		**2017**	
	Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO	**Amount**	**% Payroll**	**Amount**	**% Payroll**
1.	Total normal cost	$336,013,540	17.26%	$334,390,089	17.26%
2.	Expected employee contributions[1]	-206,802,784	-10.63%	-205,720,520	-10.63%
3.	Employer normal cost: (1) + (2)	$129,210,756	6.63%	$128,669,569	6.63%
4.	Actuarial accrued liability	19,878,462,120		18,447,394,187	
5.	Valuation value of assets	-13,908,770,325		-13,161,660,563	
6.	Unfunded actuarial accrued liability	$5,969,691,795		$5,285,733,624	
7.	Amortization of unfunded accrued liability	354,180,665	18.19%[2],[3]	318,001,527	16.42%[2]
8.	Total recommended contribution, beginning of year: (3) + (7)	$483,391,421	24.82%	$446,671,096	23.05%
9.	Total recommended contribution, July 15	484,783,849	24.90%	447,957,750	23.13%
10.	Total recommended contribution, end of pay periods	500,607,773	25.71%	462,579,626	23.88%
	Increase in Contribution Rates due to Enhanced Benefits for APO				
11.	Employer normal cost, July 15		0.06%[4]		0.05%
12.	Unfunded actuarial accrued liability, July 15		0.10%[4]		0.07%
13.	Total recommended contribution, July 15		0.16%		0.12%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
14.	Total recommended contribution, beginning of year	$486,645,060	24.98%	$448,800,203	23.17%
15.	Total recommended contribution, July 15	488,046,860	25.06%	450,349,794	23.25%
16.	Total recommended contribution, end of pay periods	503,977,293	25.88%	464,877,207	24.00%
17.	Projected payroll	$1,947,223,478		$1,936,988,361	

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[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, 2017 and June 30, 2018 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 purchasing service with the Water and Power Employees' Retirement Plan (WPERP) for Tier 1, the UAAL rate as of June 30, 2018 is 18.19% before reflecting enhanced benefits for APO, plus an additional 0.10% for the cost increase for the enhanced APO benefits for a total of 18.29%, if received at the beginning of the year. If received on July 15, the total UAAL rate of 18.29% increases to 18.34%.*

[4] *As previously discussed with LACERS, these rate increases have been re-measured for the June 30, 2018 valuation, since the actual elections for APO members remaining at LACERS and eligible to receive enhanced benefits were known for the first time as of this valuation date. These re-measured rates reflect all of the changes in the actuarial assumptions adopted by the Board for this valuation (i.e., after the June 30, 2016 valuation, which was the prior measurement date of the cost of the enhanced benefits for APO). Note that the UAAL rate increase of 0.10% measured as of June 30, 2018 and payable during FY 2019/2020 already reflects the pre-payment of the (a) the Normal Cost rate increase of 0.05% of Tier 1 payroll, and (b) the UAAL rate increase of 0.07% of all Tier 1 and Tier 3 payroll, both for the cost of the APO enhanced benefits resulting from the June 30, 2017 valuation and received on July 15, 2018 for FY 2018/2019.*

CHART 14
Recommended Contribution

Tier 3	Year Ended June 30 2018 Amount	 % Payroll	 2017 Amount	 % Payroll
Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
1. Total normal cost	$33,148,485	14.38%	$17,892,523	14.28%
2. Expected employee contributions(1)	-24,471,538	-10.62%	-13,307,624	-10.62%
3. Employer normal cost: (1) + (2)	$8,676,947	3.76%	$4,584,899	3.66%
4. Actuarial accrued liability	40,943,716		10,793,766	
5. Valuation value of assets	-73,665,140		-16,673,321	
6. Unfunded actuarial accrued liability	-$32,721,424		-$5,879,555	
7. Amortization of unfunded accrued liability	41,919,051	18.19%(2),(3)	20,575,457	16.42%(2)
8. Total recommended contribution, beginning of year: (3) + (7)	$50,595,998	21.95%	$25,160,356	20.08%
9. Total recommended contribution, July 15	50,741,742	22.02%	25,232,831	20.13%
10. Total recommended contribution, end of pay periods	52,398,013	22.74%	26,056,461	20.79%
Increase in Contribution Rates due to Enhanced Benefits for APO				
11. Employer normal cost, July 15		0.00%(4)		0.00%
12. Unfunded actuarial accrued liability, July 15		0.10%(4)		0.07%
13. Total recommended contribution, July 15		0.10%		0.07%
After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
14. Total recommended contribution, beginning of year	$50,833,488	22.05%	$25,253,545	20.15%
15. Total recommended contribution, July 15	50,979,916	22.12%	25,316,209	20.20%
16. Total recommended contribution, end of pay periods	52,643,961	22.85%	26,143,372	20.86%
17. Projected payroll	$230,463,624		$125,327,768	

(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, 2017 and June 30, 2018 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 cost of the purchase is based, in part, on the "City Contribution Rate," pursuant to the Administrative Code. As Tier 3 has no UAAL as of June 30, 2018, the City's normal cost rate of 3.76% (beginning of year) is used for purposes of these buybacks.*

(4) *As previously discussed with LACERS, these rate increases have been re-measured for the June 30, 2018 valuation, since the actual elections for APO members remaining at LACERS and eligible to receive enhanced benefits were known for the first time as of this valuation date. These re-measured rates reflect all of the changes in the actuarial assumptions adopted by the Board for this valuation (i.e., after the June 30, 2016 valuation, which was the prior measurement date of the cost of the enhanced benefits for APO). Note that the UAAL rate increase of 0.10% measured as of June 30, 2018 and payable during FY 2019/2020 already reflects the pre-payment of the UAAL rate increase of 0.07% of all Tier 1 and Tier 3 payroll for the cost of the APO enhanced benefits resulting from the June 30, 2017 valuation and received on July 15, 2018 for FY 2018/2019.*

CHART 14
Recommended Contribution

Combined		Year Ended June 30			
		2018		2017	
	Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO	**Amount**	**% Payroll**	**Amount**	**% Payroll**
1.	Total normal cost	$369,162,025	16.95%	$352,282,612	17.08%
2.	Expected employee contributions	-231,274,322	-10.63%	-219,028,144	-10.63%
3.	Employer normal cost: (1) + (2)	$137,887,703	6.32%	$133,254,468	6.45%
4.	Actuarial accrued liability	19,919,405,836		18,458,187,953	
5.	Valuation value of assets	-13,982,435,465		-13,178,333,884	
6.	Unfunded actuarial accrued liability	$5,936,970,371		$5,279,854,069	
7.	Amortization of unfunded accrued liability	396,099,716	18.19%	338,576,984	16.42%
8.	Total recommended contribution, beginning of year: (3) + (7)	$533,987,419	24.51%	$471,831,452	22.87%
9.	Total recommended contribution, July 15	535,525,591	24.59%	473,190,581	22.94%
10.	Total recommended contribution, end of pay periods	553,005,786	25.39%	488,636,087	23.69%
	Increase in Contribution Rates due to Enhanced Benefits for APO				
11.	Employer normal cost, July 15		0.06%		0.05%
12.	Unfunded actuarial accrued liability, July 15		0.10%		0.07%
13.	Total recommended contribution, July 15		0.16%		0.12%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
14.	Total normal cost	$370,409,073	17.01%		
15.	Expected employee contributions	-231,274,322	-10.63%		
16.	Employer normal cost: (14) + (15)	$139,134,751	6.38%		
17.	Actuarial accrued liability	19,944,579,058			
18.	Valuation value of assets	-13,982,435,465			
19.	Unfunded actuarial accrued liability	$5,962,143,593			
20.	Amortization of unfunded accrued liability	398,343,797	18.29%		
21.	Total recommended contribution, beginning of year: (16) + (19)	$537,478,548	24.67%	$474,053,748	22.99%
22.	Total recommended contribution, July 15	539,026,776	24.75%	475,666,003	23.06%
23.	Total recommended contribution, end of pay periods	556,621,254	25.56%	491,020,579	23.81%
24.	Projected payroll	$2,177,687,102		$2,062,316,129	

The contribution rates as of June 30, 2018 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, 2017 to June 30, 2018

Recommended Contribution as of June 30, 2017	23.06%
Effect of decrease in employer normal cost due to payroll and demographic changes (including the enrollment of new employees in Tier 3)	-0.28%
Effect of anticipated one-year delay in implementing the higher combined contribution rate calculated in the prior valuation	0.05%
Effect of investment gain on smoothed value of assets	-0.04%
Effect of higher than expected salary increases for actives	0.52%
Effect of amortizing prior year's UAAL over a larger than expected projected total payroll	-0.32%
Effect of lower than expected COLAs granted to retirees and beneficiaries	-0.08%
Effect of changes in actuarial assumptions	1.68%
Effect of actual enhanced Tier 1 elections(2)	0.04%
Effect of other demographic experience losses on accrued liability	0.12%
Total change	1.69%
Recommended Contribution as of June 30, 2018	24.75%

(1) *If received on July 15.*

(2) *The re-measured cost of the APO Tier 1 enhancements was 0.16% of payroll as of June 30, 2018, as shown in Chart 14. This item represents the 0.04% of payroll increase over the prior measurement of 0.12% (which was measured as of June 30, 2016). The increase was primarily a result of measuring the increase in the UAAL to improve past service earned through January 6, 2018 by using salary and other demographic information reported in the June 30, 2018 valuation.*

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– 2018

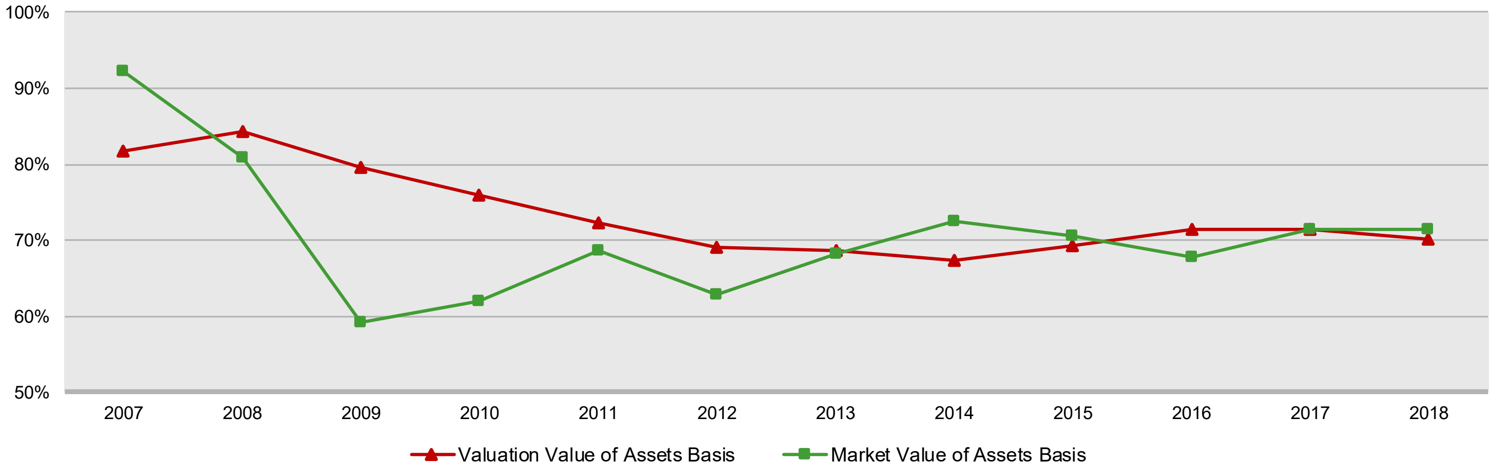

CHART 17

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)
06/30/2009	$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%
06/30/2018	13,982,435,465	19,944,579,058	5,962,143,593	70.11%	2,177,687,102	273.78%

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 6.5. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 6.5% of one-year's payroll. Since LACERS amortizes actuarial gains and losses over a period of 15 years, there would be a 0.6% 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 9.2. This is about 42% 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, 2009 – 2018

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
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
2018	6.5	9.2

EXHIBIT A

Table of Plan Coverage

i. Tier 1

Category	Year Ended June 30 2018***	Year Ended June 30 2017	Change From Prior Year
Active members in valuation:			
Number	22,409	23,426	-4.3%
Average age	49.2	48.9	0.3
Average service	15.7	15.2	0.5
Projected total payroll*	$1,947,223,478	$1,936,988,361	0.5%
Projected average payroll*	$86,895	$82,685	5.1%
Account balances	$2,143,199,216	$2,076,407,564	3.2%
Total active vested members	18,406	19,187	-4.1%
Inactive members:			
Number	7,490	7,238	3.5%
Average age	45.3	44.9	0.4
Average contribution balance for those with under 5 years of service	$6,329	$5,710	10.8%
Average monthly benefit at age 60 for those with 5 or more years of service	$1,538	$1,562**	1.3%
Retired members:			
Number in pay status	14,583	13,986	4.3%
Average service at retirement	26.6	26.6	0.0
Average age at retirement	60.3	60.3	0.0
Average age	71.8	71.9	-0.1
Average monthly benefit (includes July COLA)	$4,326	$4,167	3.8%
Disabled members:			
Number in pay status	894	902	-0.9%
Average service at retirement	11.6	11.7	-0.1
Average age at retirement	47.3	47.1	0.2
Average age	66.5	65.9	0.6
Average monthly benefit (includes July COLA)	$1,714	$1,669	2.7%
Beneficiaries:			
Number in pay status	3,902	3,917	-0.4%
Average age	76.2	76.3	-0.1
Average monthly benefit (includes July COLA)	$2,236	$2,171	3.0%

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

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

*** *Includes the following number of Airport Peace Officers eligible for enhanced benefits:*

Active members	*457*	*Retired members*	*31*	*Beneficiaries*	*0*
Inactive members	*7*	*Disabled members*	*0*		

Note that of the 457 active APO Tier 1 members as of June 30, 2018, 10 of them were active Tier 3 members as of June 30, 2017.

EXHIBIT A

Table of Plan Coverage

ii. Tier 3

Category	Year Ended June 30 2018	2017	Change From Prior Year
Active members in valuation:			
Number	3,633	2,031	78.9%
Average age	36.6	36.5	0.1
Average service	1.2	0.6	0.6
Projected total payroll*	$230,463,624	$125,327,768	83.9%
Projected average payroll*	$63,436	$61,707	2.8%
Account balances	$26,302,529	$8,647,360	204.2%
Total active vested members	54	1	5300.0%
Inactive members:			
Number	538	190	183.2%
Average age	36.1	35.8	0.3
Average contribution balance for those with under 5 years of service	$4,152	$2,070	100.6%
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.*

EXHIBIT B

Members in Active Service as of June 30, 2018
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	363	363	- -	- -	- -	- -	- -	- -	- -	- -
	$44,115	$44,115	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	1,150	1,032	108	10	- -	- -	- -	- -	- -	- -
	57,749	57,238	$62,376	$60,513	- -	- -	- -	- -	- -	- -
30 - 34	1,520	792	374	350	4	- -	- -	- -	- -	- -
	70,201	64,956	75,261	76,743	$63,258	- -	- -	- -	- -	- -
35 - 39	2,273	544	360	1,067	298	4	- -	- -	- -	- -
	82,899	73,048	81,186	87,679	85,999	$70,407	- -	- -	- -	- -
40 - 44	2,583	367	247	946	888	131	4	- -	- -	- -
	89,148	75,890	84,252	88,642	95,443	95,982	$106,411	- -	- -	- -
45 - 49	3,048	335	217	789	971	466	243	27	- -	- -
	91,313	71,756	79,387	83,854	97,453	104,482	102,999	$94,545	- -	- -
50 - 54	3,870	214	197	740	894	494	833	481	17	- -
	95,129	76,017	76,016	79,865	91,123	105,846	111,857	102,154	$102,505	- -
55 - 59	3,507	201	178	597	730	374	697	578	149	3
	94,483	70,288	69,830	77,644	89,264	100,843	106,853	111,966	107,105	$136,839
60 - 64	2,363	115	115	524	532	236	383	318	105	35
	91,897	70,032	72,711	79,060	85,430	97,268	104,597	113,877	107,519	95,511
65 - 69	1,151	43	63	250	309	109	154	146	44	33
	86,649	57,829	71,373	71,442	84,137	94,442	100,412	98,735	107,392	120,991
70 & over	581	24	47	119	161	64	52	61	20	33
	76,907	62,503	56,000	60,202	73,129	83,055	93,135	92,112	104,455	113,530
Total	22,409	4,030	1,906	5,392	4,787	1,878	2,366	1,611	335	104
	$86,895	$64,663	$76,098	$82,148	$90,894	$101,231	$107,132	$107,171	$106,881	$110,506

** Based on employment service. Average employment service for Tier 1 is 15.7 compared to average benefit service of 15.0.*

EXHIBIT B

Members in Active Service as of June 30, 2018
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	377	377	- -	- -	- -	- -	- -	- -	- -	- -
	$47,140	$47,140	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	852	851	1	- -	- -	- -	- -	- -	- -	- -
	55,296	55,250	$94,096	- -	- -	- -	- -	- -	- -	- -
30 - 34	685	678	4	3	- -	- -	- -	- -	- -	- -
	64,664	64,365	101,321	$83,332	- -	- -	- -	- -	- -	- -
35 - 39	544	537	3	3	1	- -	- -	- -	- -	- -
	68,091	68,007	75,499	78,254	$60,826	- -	- -	- -	- -	- -
40 - 44	362	353	4	2	2	1	- -	- -	- -	- -
	69,353	68,922	101,691	92,014	59,919	$65,650	- -	- -	- -	- -
45 - 49	297	283	2	6	4	- -	2	- -	- -	- -
	74,271	71,565	74,625	109,844	123,707	- -	$251,206	- -	- -	- -
50 - 54	249	238	4	- -	6	1	- -	- -	- -	- -
	73,324	72,753	78,018	- -	87,690	104,272	- -	- -	- -	- -
55 - 59	180	175	1	2	- -	- -	2	- -	- -	- -
	68,648	67,453	63,880	161,837	- -	- -	82,353	- -	- -	- -
60 - 64	64	64	- -	- -	- -	- -	- -	- -	- -	- -
	69,034	69,034	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	21	21	- -	- -	- -	- -	- -	- -	- -	- -
	85,421	85,421	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	2	2	- -	- -	- -	- -	- -	- -	- -	- -
	126,147	126,147	- -	- -	- -	- -	- -	- -	- -	- -
Total	3,633	3,579	19	16	13	2	4	- -	- -	- -
	$63,436	$62,899	$87,255	$103,220	$92,433	$84,962	$166,779	- -	- -	- -

* *Based on employment service. Average employment service for Tier 3 is 1.2 compared to average benefit service of 1.0. We understand that several Tier 3 members entered LACERS with incoming reciprocal (i.e., employment) service.*

EXHIBIT C

Reconciliation of Member Data

	Active Members	Inactive Members	Disableds	Retired Members	Beneficiaries	Total
Number as of June 30, 2017	25,457	7,428	902	13,986	3,917	51,690
New members	2,369	N/A	N/A	N/A	N/A	2,369
Terminations – with vested rights	-1,003	1,003	0	0	0	0
Retirements	-902	-140	N/A	1,042	N/A	0
New disabilities	0	-25	25	N/A	N/A	0
Died with beneficiary	N/A	N/A	N/A	N/A	245	245
Deaths or benefits expired	-57	-45	-31	-445	-259	-837
Refund of members contributions	-97	-110	0	0	0	-207
Rehired	275	-274	-1	0	N/A	0
Data adjustments	0	191*	-1	0	-1	189
Number as of June 30, 2018	26,042	8,028	894	14,583	3,902	53,449

* *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, 2018		June 30, 2017	
Contribution income:				
Employer contributions	$551,247,264		$550,961,514	
Employee contributions	236,222,166		227,531,810	
Net contribution income		$787,469,430		$778,493,324
Investment income:				
Interest, dividends and other income	$391,326,284		$371,193,752	
Recognition of capital appreciation	907,603,043		807,293,418	
Less investment and administrative fees	-99,940,548		-93,469,731	
Net investment income		$1,198,988,779		$1,085,017,439
Total income available for benefits		$1,986,458,209		$1,863,510,763
Less benefit payments:				
Payment of benefits	-$975,112,058		-$918,837,634	
Refunds of contributions	-10,411,515		-9,802,623	
Net benefit payments		-$985,523,573		-$928,640,257
Change in reserve for future benefits		$1,000,934,636		$934,870,506

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, 2018		June 30, 2017	
Cash equivalents		$470,390,317		$491,514,054
Accounts receivable:				
Accrued investment income	$57,236,792		$52,776,887	
Proceeds from sales of investments	86,261,200		112,600,821	
Other	13,985,260		13,529,376	
Total accounts receivable		$157,483,252		$178,907,084
Investments:				
Fixed income	$4,054,094,716		$3,726,445,570	
Equities	9,783,373,660		9,019,681,282	
Real estate and alternative investment	2,608,972,084		2,413,497,346	
Other	911,404,923		962,815,829	
Total investments at market value		$17,357,845,384		$16,122,440,027
Capital assets		$9,184,627		$6,489,879
Total assets		$17,994,903,579		$16,799,351,044
Less accounts payable:				
Accounts payable and accrued expenses		-$40,966,628		-$37,587,430
Accrued investment expenses		-10,455,435		-10,779,563
Purchases of investments		-158,788,428		-197,722,529
Security lending collateral		-795,076,744		-863,691,212
Total accounts payable		-$1,005,287,235		-$1,109,780,734
Net assets at market value		$16,989,616,344		$15,689,570,310
Net assets at actuarial value		$16,687,907,767		$15,686,973,131
Net assets at valuation value (retirement benefits)		$13,982,435,465		$13,178,333,884

Note: Results may be slightly off due to rounding.

EXHIBIT F

Development of the Fund Through June 30, 2018 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
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(2)	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
2018	551,247,264	236,222,166	1,198,988,779	985,523,573(3)	16,687,907,767

(1) *Based on actuarial value of assets. Net of investment fees and administrative expenses.*

(2) *Includes transfer of $2,614,765 to Fire and Police Pension for Office of Public Safety.*

(3) *Includes approximately $3.0 million transferred to LAFPP on January 5, 2018 for the APO who transferred from LACERS to LAFPP on January 7, 2018.*

EXHIBIT G

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2018

1. Unfunded actuarial accrued liability at beginning of year	$5,279,854,069
2. Normal cost at beginning of year	352,282,612
3. Expected contributions at beginning of year*	-684,971,324
4. Interest	358,669,488
5. Expected unfunded actuarial accrued liability	$5,305,834,845
6. Changes due to net experience loss**	147,418,362
7. Changes due to new actuarial assumptions	483,717,164
8. Changes due to APO Enhanced Tier 1	25,173,222
9. Unfunded actuarial accrued liability at end of year	$5,962,143,593

* *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 loss is as follows:*

Loss due to actual contributions less than expected (with interest to end of year)	*$14,035,442*
Investment gain on smoothed value of assets	*-11,346,787*
Loss due to higher than expected salary increases for continuing actives	*132,619,617*
Gain due to lower than expected COLAs granted to retirees and beneficiaries	*-19,600,829*
Other losses on demographic experience	*31,710,919*
Total loss	*$147,418,362*

EXHIBIT H

Table of Amortization Bases

Type	Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment(1)
Plan amendment (2009 ERIP)	06/30/2009	15	$300,225,354	$198,679,322	6	$36,127,827
Combined base	06/30/2012	30	4,173,548,280	4,601,972,146	24	280,147,598
Experience loss	06/30/2013	15	116,022,989	101,507,481	10	11,851,886
Experience gain	06/30/2014	15	-215,549,892	-195,909,066	11	-21,144,601
Change in assumptions	06/30/2014	20	785,439,114	777,311,341	16	62,599,783
Experience gain	06/30/2015	15	-185,473,782	-174,102,784	12	-17,513,174
Experience gain	06/30/2016	15	-255,444,007	-245,950,817	13	-23,216,814
Experience gain	06/30/2017	15	-99,814,895	-98,002,951	14	-8,732,142
Change in assumptions	06/30/2017	20	340,717,846	340,330,173	19	24,212,454
Experience loss	06/30/2018	15	147,418,362	147,418,362	15	12,460,534
Change in assumptions	06/30/2018	20	483,717,164	483,717,164	20	33,212,003
Plan amendment (APO Tier 1 Enhancement)	01/07/2018	15	25,170,149	25,173,222(2)	14.5	N/A(3)
Subtotal before GASB amount				**$5,962,143,593**		$392,249,435(3)
40-year minimum GASB 25/27	06/30/2004	15	$29,189,615	$4,296,981	1	$4,296,981
40-year minimum GASB 25/27	06/30/2005	15	12,708,684	3,531,917	2	1,797,381
Total				$5,969,972,491		**$398,343,797(3)**

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

(2) *Note that this amount is slightly larger than the initial amount since the pre-paid employer contribution received on July 15, 2017 was less than the amount required to pay the actual FY 2017/2018 cost of the APO Tier 1 enhancement based on the membership that actually chose to remain at LACERS and be eligible for the enhancement.*

(3) *These annual payments do not equal the sum of the amounts shown above. (The sum of the annual payments shown, including the GASB amounts, totals $396,099,716.) Note that the annual payment amount for the APO Tier 1 Enhancement amortization base established 1/7/2018 is not shown, since the calculated payment amount for that base was determined as of June 30, 2019 over a 13.5-year amortization period and rolled back to June 30, 2018. This was done to reflect the City's pre-payment received by LACERS on July 15, 2018 for FY 2018/2019 of the Normal Cost rate increase of 0.05% of Tier 1 payroll, and the UAAL rate increase of 0.07% of all Tier 1 and Tier 3 payroll for the cost of the APO enhanced benefits, both based on the results of the June 30, 2017 valuation.*

Note: The equivalent single amortization period is about 21 years.

EXHIBIT I

Projection of UAAL Balances and Payments (1 of 2)

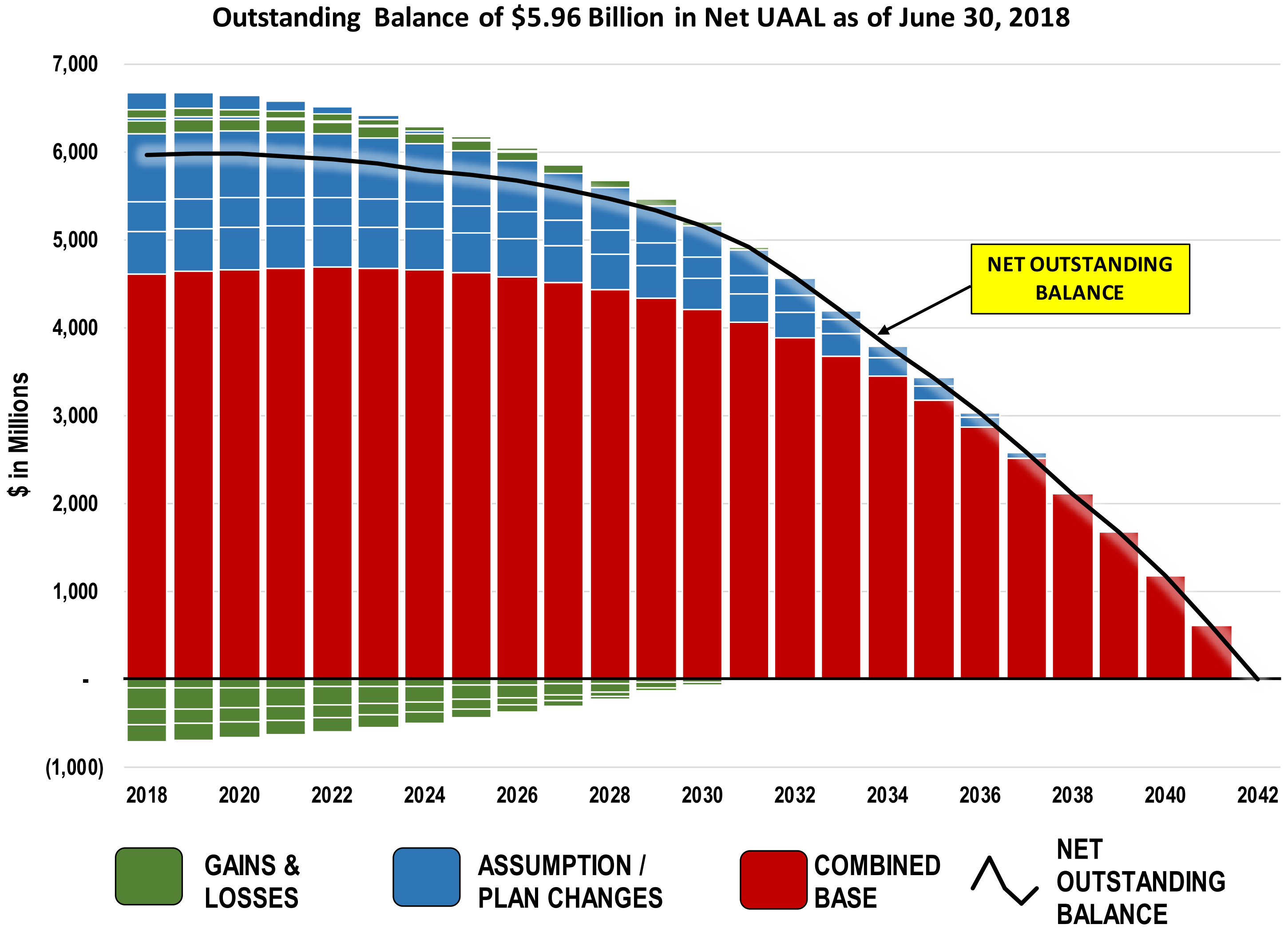

EXHIBIT I

Projection of UAAL Balances and Payments (2 of 2)

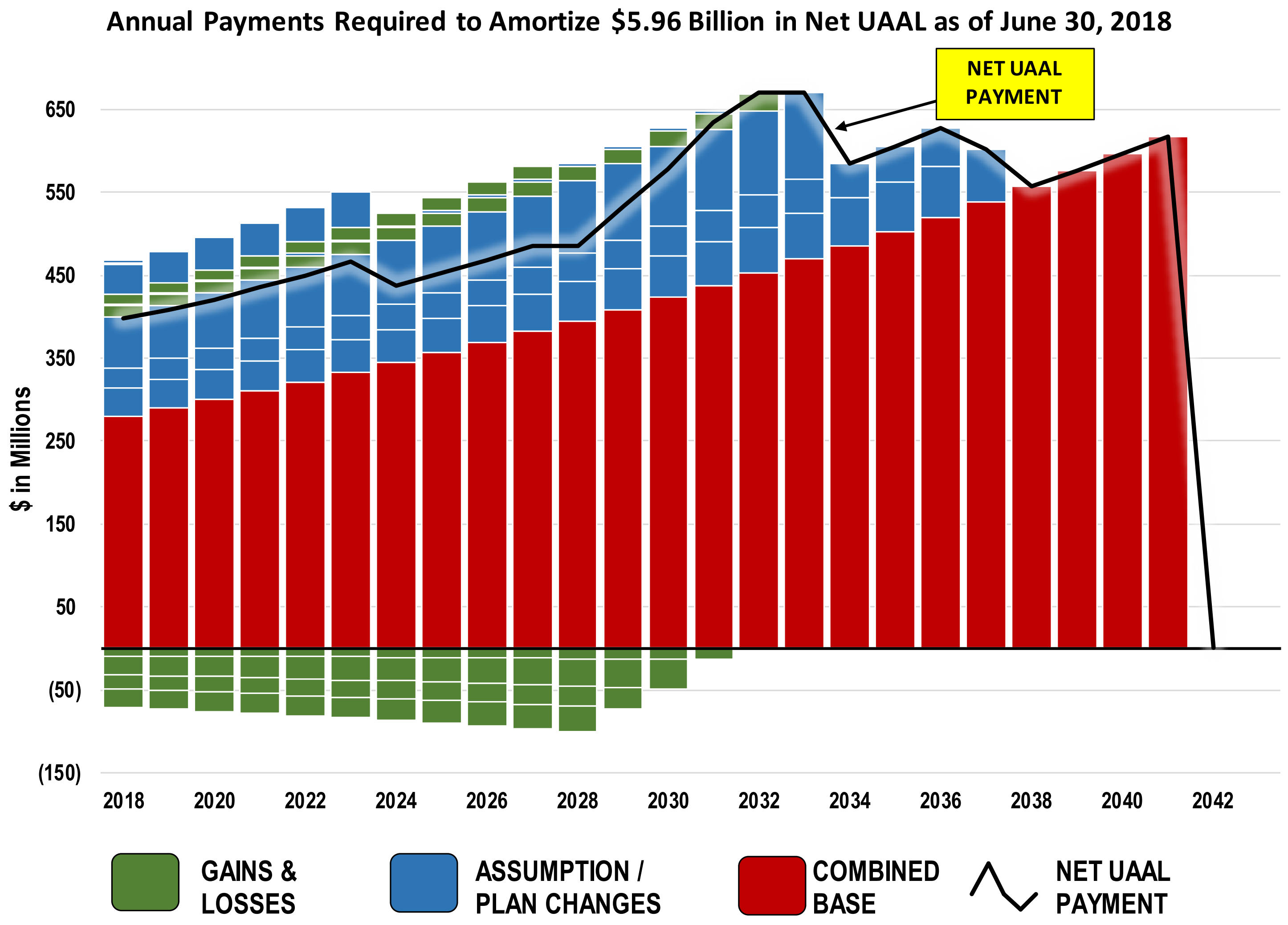

EXHIBIT J

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 $220,000 for 2018. 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 K
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 3,902 beneficiaries in pay status)		19,379
2. Inactive members during year ended June 30, 2018 (including 5,158 members with under 5 years of service eligible for a refund of contributions)		8,028
3. Members active during the year ended June 30, 2018		26,042
Fully vested	18,460	
Not vested	7,582	

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

Assets		
1. Valuation value of assets ($16,989,616,344 at market value as reported by LACERS and $16,687,907,767 at actuarial value*)		$13,982,435,465
2. Present value of future normal costs		
Employee	$1,791,352,447	
Employer	1,091,131,372	
Total		2,882,483,819
3. Unfunded actuarial accrued liability		5,962,143,593
4. Present value of current and future assets		$22,827,062,877
Liabilities		
5. Present value of future benefits		
Retired members and beneficiaries	$10,778,202,813	
Inactive members	485,374,682	
Active members	11,563,485,382	
Total		$22,827,062,877

* *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 Increase in Contribution Rates due to Enhanced Benefits for APO			
1.	Total normal cost	$336,013,540	$33,148,485	$369,162,025
2.	Expected employee contributions(1)	-206,802,784	-24,471,538	-231,274,322
3.	Employer normal cost: (1) + (2)	$129,210,756	$8,676,947	$137,887,703
4.	Payment on projected unfunded actuarial accrued liability	354,180,665	41,919,051	396,099,716
5.	Total recommended contribution: (3) + (4), beginning of year	$483,391,421	$50,595,998	$533,987,419
6.	Total recommended contribution: adjusted for July 15 timing	484,783,849	50,741,742	535,525,591
7.	Total recommended contribution: adjusted for biweekly timing	500,607,773	52,398,013	553,005,786
8.	Item 5 (beginning of year contribution) as a percentage of projected payroll: (5) ÷ (17)	24.82%	21.95%	24.51%
9.	Item 6 (July 15 contribution) as a percentage of projected payroll: (6) ÷ (17)	24.90%	22.02%	24.59%
10.	Item 7 (biweekly contribution) as a percentage of projected payroll: (7) ÷ (17)	25.71%	22.74%	25.39%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO			
11.	Total recommended contribution: beginning of year	$486,645,060	$50,833,488	$537,478,548
12.	Total recommended contribution: adjusted for July 15 timing	488,046,860	50,979,916	539,026,776
13.	Total recommended contribution: adjusted for biweekly timing	503,977,293	52,643,961	556,621,254
14.	Item 11 (beginning of year contribution) as a percentage of projected payroll: (11) ÷ (17)	24.98%	22.05%	24.67%
15.	Item 12 (July 15 contribution) as a percentage of projected payroll: (12) ÷ (17)	25.06%	22.12%	24.75%
16.	Item 13 (biweekly contribution) as a percentage of projected payroll: (13) ÷ (17)	25.88%	22.85%	25.56%
17.	Projected payroll	$1,947,223,478	$230,463,624	$2,177,687,102

(1) *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
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%
2018	450,195,254	450,195,254	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, 2014 through June 30, 2017 Actuarial Experience Study dated June 29, 2018, 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:	Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.
Disabled Members:	Headcount-Weighted RP-2014 Disabled Retiree Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.

The RP-2014 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

Termination Rates Before Retirement:

Pre-Retirement Mortality:	Headcount-Weighted RP-2014 Employee Mortality Table (separate tables for males and females) times 90%, projected generationally with the two-dimensional mortality improvement scale MP-2017.

	Rate (%)	
Age	**Disability**	**Termination***
25	0.01	7.00
30	0.02	7.00
35	0.05	5.50
40	0.07	3.90
45	0.13	3.20
50	0.19	2.70
55	0.20	2.50
60	0.20	2.50

* *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	12.00
1	10.00
2	9.00
3	8.25
4	7.75

Retirement Rates:

	Rate (%)					
	Tier 1		APO Tier 1[(1)]		Tier 3	
Age	Non-55/30	55/30	Non-55/30	55/30	Non-55/30	55/30
50	6.0	0.0	7.0	0.0	6.0	0.0
51	3.0	0.0	4.0	0.0	3.0	0.0
52	3.0	0.0	4.0	0.0	3.0	0.0
53	3.0	0.0	4.0	0.0	3.0	0.0
54	17.0	0.0	18.0	0.0	16.0	0.0
55	6.0	24.0	7.0	25.0	0.0(2)	23.0
56	6.0	16.0	7.0	17.0	0.0(2)	15.0
57	6.0	16.0	7.0	17.0	0.0(2)	15.0
58	6.0	16.0	7.0	17.0	0.0(2)	15.0
59	6.0	16.0	7.0	17.0	0.0(2)	15.0
60	7.0	16.0	8.0	17.0	6.0	15.0
61	7.0	16.0	8.0	17.0	6.0	15.0
62	7.0	16.0	8.0	17.0	6.0	15.0
63	7.0	16.0	8.0	17.0	6.0	15.0
64	7.0	16.0	8.0	17.0	6.0	15.0
65	13.0	20.0	14.0	21.0	12.0	19.0
66	13.0	20.0	14.0	21.0	12.0	19.0
67	13.0	20.0	14.0	21.0	12.0	19.0
68	13.0	20.0	14.0	21.0	12.0	19.0
69	13.0	20.0	14.0	21.0	12.0	19.0
70	100.0	100.0	100.0	100.0	100.0	100.0

(1) *Consistent with the cost study prepared for the adoption of enhanced Tier 1 benefits, we have estimated the rates above by increasing the retirement rates for Tier 1 by a flat 1%.*

(2) *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 59 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 3 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 credit 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 contribution under the current funding policy plus 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 amortization of the 40-year minimum for 2003/2004 and 2004/2005 will be fully completed in the next two valuations.
Changes in Actuarial Assumptions:	Based on the July 1, 2014 through June 30, 2017 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were as follows:

Changes in Actuarial Assumptions (continued):

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.*

Changes in Actuarial Assumptions (continued):

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		APO Tier 1(1)		Tier 3	
Age	**Non-55/30**	**55/30**	**Non-55/30**	**55/30**	**Non-55/30**	**55/30**
50	6.0	0.0	7.0	0.0	6.0	0.0
51	3.0	0.0	4.0	0.0	3.0	0.0
52	3.0	0.0	4.0	0.0	3.0	0.0
53	3.0	0.0	4.0	0.0	3.0	0.0
54	16.0	0.0	17.0	0.0	15.0	0.0
55	6.0	20.0	7.0	21.0	0.0(2)	19.0
56	6.0	14.0	7.0	15.0	0.0(2)	13.0
57	6.0	14.0	7.0	15.0	0.0(2)	13.0
58	6.0	14.0	7.0	15.0	0.0(2)	13.0
59	6.0	14.0	7.0	15.0	0.0(2)	13.0
60	6.0	14.0	7.0	15.0	5.0	13.0
61	6.0	14.0	7.0	15.0	5.0	13.0
62	7.0	15.0	8.0	16.0	6.0	14.0
63	7.0	15.0	8.0	16.0	6.0	14.0
64	7.0	16.0	8.0	17.0	6.0	15.0
65	12.0	17.0	13.0	18.0	11.0	16.0
66	12.0	17.0	13.0	18.0	11.0	16.0
67	12.0	17.0	13.0	18.0	11.0	16.0
68	12.0	17.0	13.0	18.0	11.0	16.0
69	12.0	17.0	13.0	18.0	11.0	16.0
70	100.0	100.0	100.0	100.0	100.0	100.0

(1) *Consistent with the cost study prepared for the adoption of enhanced Tier 1 benefits, we have estimated the rates above by increasing the retirement rates for Tier 1 by a flat 1%.*

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

Changes in Actuarial Assumptions (continued):

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.
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.

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 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 1 Enhanced *(§4.1002(e))*	All Tier 1 Airport Peace Officers (including certain fire fighters) appointed to their positions before January 7, 2018 who elected to remain at LACERS after January 6, 2018.
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 & Tier 1 Enhanced	
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.

Normal Retirement Benefit: (continued)

Tier 1

Amount (§ 4.1007(a))	2.16% per year of service credit (not greater than 100%) of the Final Average Monthly Compensation.

Tier 1 Enhanced

Amount (§ 4.1007(a))	2.30% per year of service credit (not greater than 100%) of the Final Average Monthly Compensation.

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 & Tier 1 Enhanced

Age & Service Requirement (§ 4.1005(b))	Age 55 with 10 years of continuous City service; or Any age with 30 years of City service.

Early Retirement Benefit: (continued)

Tier 1 & Tier 1 Enhanced

Amount (§ 4.1007(a) & (b))

2.16% and 2.30% per year of service credit for Tier 1 and Tier 1 Enhanced, respectively, (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

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 & Tier 1 Enhanced

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.

➤ *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, Tier 1 Enhanced & Tier 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 & Tier 1 Enhanced	
(§ 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 & Tier 1 Enhanced	
(§ 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 & Tier 3	
(§ 4.1010(c), § 4.1080.10(c), & § 4.1012(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 after Retirement: (continued)

Tier 1 Enhanced

(§ 4.1010.1(b), § 4.1010.1(i), and § 4.1010.1(j))

- *While on service-connected disability*
  - (i) 80% 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.

  * *If the death occurs within three years of the retiree's retirement, the eligible survivor shall receive 80% of the Final Average Monthly Compensation (adjusted with Cost of Living benefit).*

  ** *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 provision of Section 4.1010.1(c).*

- *While on nonservice-connected disability*
  - (i) 70% 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 provision of Section 4.1010.1(c).*

Death before Retirement:

Tier 1, Tier 1 Enhanced & Tier 3

(§ 4.1010(a), § 4.1010.1(b), & § 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:

Service Credit	Total 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

Tier 1 & Tier 3

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.

Tier 1 Enhanced

Service-Connected Death

Option #2:

(i) Eligibility – None.

(ii)Benefit – 80% of member's Final Average Monthly Compensation.

Nonservice-Connected Death

(i) Eligibility – 5 years of service (unless on military leave and killed while on military duties).

(ii)Benefit – 50% of member's Final Average Monthly Compensation.

Member Contributions:

Tier 1 & Tier 1 Enhanced

(§ 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).

For Tier 1, 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.*

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 & Tier 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.
Tier 1 Enhanced	
Service Requirement *(§ 4.1008.1)*	
Service-Connected Disability	None
Nonservice-Connected Disability	5 years of continuous service
*Amount** *(§ 4.1008.1)*	
Service-Connected Disability	30% to 90% of the Final Average Monthly Compensation depending on severity of disability, with a minimum of 2% of the Final Average Monthly Compensation per year of service.
Nonservice-Connected Disability	30% to 50% of the Final Average Monthly Compensation depending on severity of disability.

* *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 & Tier 1 Enhanced

(§ 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).
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.

Deferred Retirement Benefit (Vested): (continued)

Tier 3 (continued)

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).
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:	Effective January 7, 2018, Tier 1 enhanced benefits are available to APO members who elected to remain at LACERS. The Plan Provisions shown above reflect these enhanced benefits.

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.*

Segal Consulting

Los Angeles City Employees' Retirement System

Funding Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2018

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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T 415.263.8200 www.segalco.com

November 7, 2018

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, 2018. The report summarizes the actuarial data used in the valuation, establishes the Actuarially Determined Contribution (ADC) for the Fiscal Year 2019/2020, 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. The health care trend and other related medical assumptions have been reviewed by Melissa Bissett, FSA, MAAA.

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.

Andy Yeung

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

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, 2018 for funding purposes. The results are also consistent 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

- The recommended contribution rate has decreased from 5.10% of payroll to 4.91% of payroll while the recommended contribution amount has increased from $105.1 million to $106.8 million after reflecting an increase in the City's total payroll, assuming contributions are received by LACERS on July 15. The main reasons for the decline in the contribution rate were: (i) investment gain (after smoothing), (ii) 2018/2019 premium and subsidy levels less than expected, and (iii) decrease in Unfunded Actuarial Accrued Liability (UAAL) rate from greater than expected increase in payroll, all offset to some degree by (iv) new actuarial assumptions from the triennial experience study and (v) miscellaneous demographic losses. 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.
- The ratio of the actuarial value of assets to actuarial accrued liabilities decreased from 81.12% to 80.72%. On a market value of assets basis, the funded ratio increased from 81.14% to 82.18%. The unfunded actuarial accrued liability increased from $567.3 million to $628.0 million. A complete reconciliation of the System's unfunded actuarial accrued liability is provided in Chart 2.
- The GAS 74 report with a measurement date of June 30, 2018 for financial reporting purposes for the Plan was provided as a separate report.
- The GAS 75 report with a measurement date of June 30, 2018 for financial reporting purposes for the employer (with a reporting date of June 30, 2019) will be provided in the next few months.
- The actuarial valuation report as of June 30, 2018 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 received by LACERS on any of the following dates:
  (1) The beginning of the fiscal year, or
  (2) On July 15, 2019, or
  (3) Throughout the year (i.e., LACERS will receive contributions at the end of every pay period).
- As part of this valuation, we obtained actual membership information available for the first time for the employees at the Airport who elected to stay at LACERS, and would therefore be entitled to enhanced Tier 1 retirement benefits, instead of transferring to LAFPP on January 7, 2018. Note that a new Tier 1

Enhanced Plan providing a higher retirement benefit was adopted pursuant to Ordinance No. 184853. However, other than Segal applying higher retirement rate assumptions to anticipate somewhat earlier retirement, there are no differences between the retiree health benefits paid by LACERS to those members. Using that data and applying the method we previously discussed with LACERS, we have calculated the increase in normal cost by comparing the normal cost for the Airport Peace Officers (APO) before and after the enhancement due to that earlier than expected retirement. The change in normal cost contribution amounts, expressed as a percentage of the City's entire Tier 1 payroll, is less than 0.01%. Similarly, we have estimated the increase in UAAL to be less than $1 million due to earlier than expected retirement. The change in UAAL contribution amounts, expressed as a percentage of the City's entire Tier 1 and Tier 3 payroll, is less than 0.01%. Due to the minimal cost impact as the change in each of the normal cost rate and the UAAL rate is less than 0.01% of payroll, we have not established a plan change amortization base in this valuation. Additionally, we have not shown an enhanced Tier 1 contribution rate separately in this valuation report and do not plan to show such contribution rate separately in future OPEB funding valuation reports.

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

SUMMARY OF VALUATION RESULTS

	June 30, 2018	June 30, 2017
Actuarial Accrued Liability (AAL)	$3,256,827,847	$3,005,806,234
Actuarial Value of Assets	2,628,843,511	2,438,458,132
Unfunded Actuarial Accrued Liability	627,984,336	567,348,102
Funded Ratio on Actuarial Value Basis	80.72%	81.12%
Market Value of Assets	$2,676,371,615	$2,438,861,850
Funded Ratio on Market Value Basis	82.18%	81.14%
Actuarially Determined Contribution (ADC)		
Normal cost (beginning of year)	$74,477,507	$74,610,881
Amortization of the unfunded actuarial accrued liability	32,047,427	30,230,115
Total Actuarially Determined Contribution (beginning of year)	$106,524,934	$104,840,996
Total Actuarially Determined Contribution (July 15)	$106,836,051	$105,147,195
Total Actuarially Determined Contribution (end of each pay period)	$110,318,900	$108,574,988
Projected total payroll(1)	$2,177,687,102	$2,062,316,129
ADC as a percentage of pay (there is a 12-month delay until the rate is effective)(2)		
Beginning of year	4.89%	5.08%
July 15	4.91%	5.10%
End of each pay period	5.07%	5.26%
Total Participants	47,731	46,276

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

(2) *A breakdown of the ADC by tier is provided in Chart 4.*

IMPORTANT INFORMATION ABOUT ACTUARIAL VALUATIONS

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of an OPEB plan. 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 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.
- **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 health care trends and member enrollment in retiree health benefits. 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.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the System.

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, 2018

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, 2018, 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, 2017.

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 for 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, 2018 actuarial valuation. A listing of the supporting schedules Segal prepared for inclusion in the Financial Section, 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*

* Source: Segal's GASB Statement No. 74 valuation report as of June 30, 2018.

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 fund the Plan 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
Retiree Health 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, 2018	**June 30, 2017**
Participant Category		
Current retirees, beneficiaries, and dependents	$1,497,370,105	$1,379,356,850
Current active members	2,315,910,753	2,208,263,048
Terminated members entitled but not yet eligible	67,137,848	62,252,306
Total	$3,880,418,706	$3,649,872,204

	June 30, 2018	**June 30, 2017**
Actuarial Balance Sheet		
The actuarial balance sheet as of the valuation date is as follows:		
Assets		
1. Actuarial value of assets	$2,628,843,511	$2,438,458,132
2. Present value of future normal costs	623,590,859	644,065,970
3. Unfunded actuarial accrued liability	627,984,336	567,348,102
4. Present value of current and future assets	$3,880,418,706	$3,649,872,204
Liabilities		
5. Actuarial Present Value of total Projected Benefits	$3,880,418,706	$3,649,872,204

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, 2018	June 30, 2017
Participant Category		
Current retirees, beneficiaries, and dependents	$1,497,370,105	$1,379,356,850
Current active members	1,692,319,894	1,564,197,078
Terminated members entitled but not yet eligible	67,137,848	62,252,306
Total actuarial accrued liability	$3,256,827,847	$3,005,806,234
Unfunded Actuarial Accrued Liability		
Total actuarial accrued liability	$3,256,827,847	$3,005,806,234
Actuarial value of assets	2,628,843,511	2,438,458,132
Unfunded actuarial accrued liability	$627,984,336	$567,348,102

Development of Unfunded Actuarial Accrued Liability for the Year Ended June 30, 2018

1.	Unfunded actuarial accrued liability as of June 30, 2017	$567,348,102
2.	Employer normal cost as of June 30, 2017	74,610,881
3.	Expected employer contributions during 2017/2018 fiscal year	-104,840,996
4.	Interest	38,941,054
5.	Adjustment due to prior year's UAAL payment limited to reflect a 30-year effective amortization period	1,797,364
6.	Expected unfunded actuarial accrued liability as of June 30, 2018 (1 + 2 + 3 + 4 + 5)	$577,856,405
7.	Change due to investment gain, after smoothing	-38,401,014
8.	Change due to actual contributions less than expected	4,521,884
9.	Change due to miscellaneous demographic gains and losses	32,375,587
10.	Change due to reallocation between Present Value of Future Normal Cost and AAL as part of adjustment to Entry Age cost methodology(1)	43,428,951
11.	Change due to updated 2018/2019 premium and subsidy levels	-90,960,346
12.	Change due to adopted future medical trend rates and HIT after 2018/2019(2)	-17,704,919
13.	Effect of new actuarial assumptions adopted in triennial experience study	109,882,560
14.	Change due to new enrollment and spouse coverage assumptions	11,754,340
15.	Change due to reflecting deferred starting date for projected ACA excise tax on high-cost health plan	-4,769,112
16.	Unfunded actuarial accrued liability as of June 30, 2018 (6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 14 + 15)	$627,984,336

(1) *This is done as part of an adjustment to Entry Age cost methodology. There is a small contribution rate decrease of 0.07% of payroll as a result of this adjustment.*

(2) *The 2020-2021 premium increases include additional estimated increases of 1.0% (non-Medicare) and 0.5% (Medicare) from the impact of the Health Insurance Tax (HIT).*

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.

As we discussed with LACERS, the minimum 30-year amortization of UAAL rule under the old GASB 43/45 no longer applied under the new GASB 74/75.

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	$36,222,261	$6,586,652	6
Combined Base**	06/30/2012	30	597,984,614	659,369,046	40,139,455	24
Experience Loss	06/30/2013	15	16,206,142	14,178,611	1,655,477	10
Change in Assumptions	06/30/2014	20	135,287,549	133,887,585	10,782,467	16
Experience Gain	06/30/2014	15	-101,972,860	-92,681,130	-10,003,139	11
Experience Gain	06/30/2015	15	-193,346,818	-181,493,140	-18,256,577	12
Plan Change	06/30/2015	15	17,466,894	16,396,035	1,649,294	12
Experience Gain	06/30/2016	15	-21,878,470	-21,065,390	-1,988,492	13
Change in Assumptions	06/30/2017	20	121,183,087	121,045,204	8,611,641	19
Experience Gain	06/30/2017	15	-109,999,503	-108,002,677	-9,623,125	14
Change in Assumptions	06/30/2018	20	109,882,560	109,882,560	7,544,533	20
Experience Gain	06/30/2018	15	-59,754,629	-59,754,629	-5,050,759	15
Total				$627,984,336	$32,047,427	

* *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.*

The Actuarially Determined Contribution (ADC) is the amount calculated to determine the annual cost of the OPEB plan for funding 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 funding period and adjusted as if the annual cost were to be received throughout the fiscal year or on July 15th.

CHART 4

Determination of Actuarially Determined Contribution (ADC)

Tier 1 - Cost Element		**Determined as of June 30, 2018**		**June 30, 2017**	
		Amount	**Percentage of Compensation**	**Amount**	**Percentage of Compensation**
1.	Normal cost	$65,056,794	3.34%	$69,351,491	3.58%
2.	Amortization of the unfunded actuarial accrued liability	28,655,863	1.47%	28,392,522	1.47%
3.	Total Actuarially Determined Contribution (beginning of year)	$93,712,657	4.81%	$97,744,013	5.05%
4.	Projected Payroll[1]	$1,947,223,478		$1,936,988,361	
5.	Adjustment for timing (July 15)	$273,698	0.02%	$285,472	0.01%
6.	Total Actuarially Determined Contribution (July 15)	$93,986,355	4.83%	$98,029,485	5.06%
7.	Adjustment for timing (end of pay period)	$3,337,647	0.17%	$3,481,227	0.18%
8.	Total Actuarially Determined Contribution (end of pay period)	$97,050,304	4.98%	$101,225,240	5.23%

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

CHART 4 (continued)

Determination of Actuarially Determined Contribution (ADC)

Tier 3 - Cost Element		**Determined as of**			
		June 30, 2018		**June 30, 2017**	
		Amount	**Percentage of Compensation**	**Amount**	**Percentage of Compensation**
1.	Normal cost	$9,420,713	4.09%	$5,259,390	4.20%
2.	Amortization of the unfunded actuarial accrued liability	3,391,564	1.47%(2)(3)	1,837,593	1.47%(2)
3.	Total Actuarially Determined Contribution (beginning of year)	$12,812,277	5.56%	$7,096,983	5.67%
4.	Projected Payroll(1)	$230,463,624		$125,327,768	
5.	Adjustment for timing (July 15)	$37,419	0.02%	$20,727	0.01%
6.	Total Actuarially Determined Contribution (July 15)	$12,849,696	5.58%	$7,117,710	5.68%
7.	Adjustment for timing (end of pay period)	$456,319	0.20%	$252,765	0.19%
8.	Total Actuarially Determined Contribution (end of pay period)	$13,268,596	5.76%	$7,349,748	5.86%

(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 cost of the purchase is based, in part, on the "City Contribution Rate," pursuant to the Administrative Code. For this purpose, the UAAL rate as of June 30, 2018 is 0.05%, if received at the beginning of the year. It is calculated by: (i) amortizing $1,637,208 over separate layers (i.e., 15 years for new actuarial (gains)/losses and 20 years for new assumption changes), or a debit of $125,176, and (ii) dividing that debit over Tier 3 payroll (or $230,463,624). If received on July 15, the UAAL rate remains at 0.05%, even though the debit increases to $125,542.*

CHART 4 (continued)

Determination of Actuarially Determined Contribution (ADC)

Combined - Cost Element		**Determined as of June 30, 2018**		**June 30, 2017**	
		Amount	**Percentage of Compensation**	**Amount**	**Percentage of Compensation**
1.	Normal cost	$74,477,507	3.42%	$74,610,881	3.61%
2.	Amortization of the unfunded actuarial accrued liability	32,047,427	1.47%	30,230,115	1.47%
3.	Total Actuarially Determined Contribution (beginning of year)	$106,524,934	4.89%	$104,840,996	5.08%
4.	Projected Payroll(1)	$2,177,687,102		$2,062,316,129	
5.	Adjustment for timing (July 15)	$311,117	0.02%	$306,199	0.02%
6.	Total Actuarially Determined Contribution (July 15)	$106,836,051	4.91%	$105,147,195	5.10%
7.	Adjustment for timing (end of pay period)	$3,793,966	0.18%	$3,733,992	0.18%
8.	Total Actuarially Determined Contribution (end of pay period)	$110,318,900	5.07%	$108,574,988	5.26%

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

The schedule of employer contributions compares actual contributions to the Actuarially Determined Contributions.

CHART 5

Schedule of Employer Contributions

Fiscal Year Ended June 30	Actuarially Determined Contributions[1]	Actual Contributions	Percentage Contributed
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%
2018	100,909,010	100,909,010	100.00%

(1) *Prior to plan year ending June 30, 2018, this amount was the Annual Required Contribution (ARC).*

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

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)]
06/30/2013	$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%
06/30/2018	2,628,843,511	3,256,827,847	627,984,336	80.72%	2,177,687,102	28.84%

* *Reflects amount calculated in the pension valuation.*

VOLATILITY RATIOS

OPEB plans are subject to volatility in the level of determined 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 1.23. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 1.23% 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 determined 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 1.50. This is about 22% 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 7

Volatility Ratios for Years Ended June 30, 2011 – 2018

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
2018	1.23	1.50

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 8

Member Population: 2009 – 2018

Year Ended June 30	Active Participants	Inactive Members	Retired Members and Surviving Spouses**	Ratio of Non-Actives to Actives
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
2018	26,042	1,401	15,144	0.64

* *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

Category	Year Ended June 30 2018	Year Ended June 30 2017	Change From Prior Year
Active members in valuation:			
Number	26,042	25,457	2.3%
Average age	47.5	47.9	-0.4
Average service	13.7	14.1	-0.4
Projected total payroll	$2,177,687,102	$2,062,316,129	5.6%
Inactive members:			
Number	1,401	1,280	9.5%
Average age	50.9	50.8	0.1
Retirees:*			
Number of non-disabled	13,029	12,529	4.0%
Number of disabled	326	325	0.3%
Total number of retirees	13,355	12,854	3.9%
Average age of retirees	71.9	71.9	0.0
Number of spouses	5,144	4,887	5.3%
Average age of spouses	68.5	68.5	0.0
Surviving Spouses:*			
Number in pay status	1,789	1,798	-0.5%
Average age	79.6	79.7	-0.1

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

EXHIBIT A (continued)

Summary of Participant Data

Tier 1

Category	Year Ended June 30 2018**	2017	Change From Prior Year
Active members in valuation:			
Number	22,409	23,426	-4.3%
Average age	49.2	48.9	0.3
Average service	15.7	15.2	0.5
Projected total payroll	$1,947,223,478	$1,936,988,361	0.5%
Inactive members:			
Number	1,397	1,280	9.1%
Average age	50.9	50.8	0.1
Retirees:*			
Number of non-disabled	13,029	12,529	4.0%
Number of disabled	326	325	0.3%
Total number of retirees	13,355	12,854	3.9%
Average age of retirees	71.9	71.9	0.0
Number of spouses	5,144	4,887	5.3%
Average age of spouses	68.5	68.5	0.00
Surviving Spouses:*			
Number in pay status	1,789	1,798	-0.5%
Average age	79.6	79.7	-0.1

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

** *Includes the following number of Airport Peace Officers eligible for enhanced benefits:*

Active members	*457*	*Retired members*	*31*	*Beneficiaries*	*0*
Inactive members	*7*	*Disabled members*	*0*		

Note that of the 457 active APO Tier 1 members as of June 30, 2018, 10 of them were active Tier 3 members as of June 30, 2017.

EXHIBIT A (continued)

Summary of Participant Data

Tier 3

Category	Year Ended June 30 2018	Year Ended June 30 2017	Change From Prior Year
Active members in valuation:			
Number	3,633	2,031	78.9%
Average age	36.6	36.5	0.1
Average service	1.3	0.6	0.7
Projected total payroll	$230,463,624	$125,327,768	83.9%
Inactive members:			
Number	4	0	N/A
Average age	48.0	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	
	2018	**2017**
Active		
Pension valuation	26,042	25,457
Health valuation	26,042	25,457
Retirees		
Pension valuation	14,583	13,986
Retirees with no subsidy due to service or decision not to enroll	-1,532	-1,431
Deferred retirees eligible for future health benefits	-22	-26
Health valuation	13,029	12,529
Disableds		
Pension valuation	894	902
Disabled with no subsidy due to service or decision not to enroll	-512	-519
Deferred disableds eligible for future health benefits	-56	-58
Health valuation	326	325
Surviving Spouses		
Pension valuation	3,902	3,917
Surviving spouses with no subsidy due to service or decision not to enroll	-2,043	-2,041
Deferred surviving spouses eligible for future health benefits	-70	-78
Health valuation	1,789	1,798
Inactive Vested		
Pension valuation	8,028	7,428
Inactive vesteds with less than 10 years of service	-6,627	-6,148
Health valuation	1,401	1,280

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
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
2018	1,104	17,413,241	612	3,649,382	15,144	135,865,750	11.3	8,972

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

EXHIBIT D
Cash Flow Projections

The ADC 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 ADC in a well-funded plan. The following table projects the paygo cost as the projected payment over the next ten years.

Year Ending June 30	Projected Number of Retirees*			Projected Benefit Payments		
	Current	**Future**	**Total**	**Current**	**Future**	**Total**
2018	20,288	1,699	21,987	$127,337,355	$12,056,918	$139,394,273
2019	19,694	2,809	22,503	124,683,545	22,035,176	146,718,721
2020	19,072	3,963	23,035	125,898,909	34,265,777	160,164,686
2021	18,445	5,113	23,558	126,366,656	47,382,703	173,749,359
2022	17,818	6,232	24,050	126,176,140	62,324,278	188,500,418
2023	17,185	7,323	24,508	125,670,361	76,858,899	202,529,260
2024	16,552	8,336	24,888	124,276,423	91,571,439	215,847,862
2025	15,914	9,313	25,227	122,739,048	105,988,035	228,727,083
2026	15,271	10,234	25,505	120,611,665	119,942,121	240,553,786
2027	14,630	11,127	25,757	118,705,087	133,274,403	251,979,490

* *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, 2018		June 30, 2017	
Contribution income:				
Employer contributions	$551,247,264		$550,961,514	
Employee contributions	236,222,166		227,531,810	
Net contribution income		$787,469,430		$778,493,324
Investment income:				
Interest, dividends and other income	$391,326,284		$371,193,752	
Recognition of capital appreciation	907,603,043		807,293,418	
Less investment and administrative fees	-99,940,548		-93,469,731	
Net investment income		$1,198,988,779		$1,085,017,439
Total income available for benefits		$1,986,458,209		$1,863,510,763
Less benefit payments:				
Payment of benefits	-$975,112,058		-$918,837,634	
Refunds of contributions	-10,411,515		-9,802,623	
Net benefit payments		-$985,523,573		-$928,640,257
Change in reserve for future benefits		$1,000,934,636		$934,870,506

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, 2018		June 30, 2017	
Cash equivalents		$470,390,317		$491,514,054
Accounts receivable:				
Investment income	$57,236,792		$52,776,887	
Proceeds from sales of investments	86,261,200		112,600,821	
Other	13,985,260		13,529,376	
Total accounts receivable		$157,483,252		$178,907,084
Investments:				
Fixed Income	$4,054,094,716		$3,726,445,570	
Equities	9,783,373,660		9,019,681,282	
Real Estate and Alternative Investment	2,608,972,084		2,413,497,346	
Other	911,404,923		962,815,829	
Total investments at market value		$17,357,845,384		$16,122,440,027
Capital assets		$9,184,627		$6,489,879
Total assets		$17,994,903,579		$16,799,351,044
Less accounts payable:				
Accounts payable and accrued expenses		-$40,966,628		-$37,587,430
Accrued investment expenses		-10,455,435		-10,779,563
Purchases of investments		-158,788,428		-197,722,529
Security lending collateral		-795,076,744		-863,691,212
Total accounts payable		-$1,005,287,235		-$1,109,780,734
Net assets at market value		$16,989,616,344		$15,689,570,310
Net assets at actuarial value		$16,687,907,767		$15,686,973,131
Net assets at valuation value (health benefits)		$2,628,843,511		$2,438,458,132

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, 2018

	Original Amount	Portion Not Recognized	Amount Not Recognized	
1. Market value of assets				$16,989,616,344
2. Calculation of unrecognized return[1]				
(a) Year ended June 30, 2018	$349,468,305	6/7	$299,544,261	
(b) Year ended June 30, 2017	770,969,472			
(c) Year ended June 30, 2016	-1,065,023,569			
(d) Year ended June 30, 2015	-707,760,540	see footnote (2) below		
(e) Year ended June 30, 2014	1,246,285,581			
(f) Combined net deferred loss as of June 30, 2013	-81,571,421	5/6	2,164,316	
(g) Total unrecognized return				$301,708,577
3. Preliminary actuarial value: (1) - (2g)				$16,687,907,767
4. Adjustment to be within 40% corridor				0
5. Final actuarial value of assets: (3) + (4)				$16,687,907,767
6. Actuarial value as a percentage of market value: (5) ÷ (1)				98.2%
7. Market value of health assets				$2,676,371,615
8. Valuation value of health assets (5) ÷ (1) x (7)				$2,628,843,511
9. Deferred return recognized in each of the next 6 years:				
(a) Amount recognized on 6/30/2019				$50,356,907
(b) Amount recognized on 6/30/2020				50,356,907
(c) Amount recognized on 6/30/2021				50,356,907
(d) Amount recognized on 6/30/2022				50,356,907
(e) Amount recognized on 6/30/2023				50,356,907
(f) Amount recognized on 6/30/2024				49,924,044
(g) Subtotal (may not total exactly due to rounding)				$301,708,577

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

[2] *Based on action taken by the Board on July 24, 2018, the net unrecognized gain as of June 30, 2017 (i.e., $2,597,179) has been recognized in six level amounts, with five years of recognition remaining after the June 30, 2018 valuation.*

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

EXHIBIT H

Reconciliation of Recommended Contribution from June 30, 2017 to June 30, 2018[1]

Recommended Contribution as of June 30, 2017[1]	5.10%
Change due to investment gain, after smoothing	-0.15
Change due to reallocation between normal cost and AAL as part of adjustment to Entry Age cost method	-0.07
Change due to miscellaneous demographic gains and losses, including lower normal cost for new members	0.24
Change due to updated 2018/2019 premium and subsidy levels	-0.45
Change due to new future medical trend rates after 2018/2019	-0.11
Change due to new actuarial assumptions adopted in triennial experience study	0.41
Change due to new enrollment and spouse coverage assumptions	0.04
Change due to reflecting deferred starting date for projected ACA excise tax on high-cost health plans	-0.02
Effect of decrease in UAAL rate from greater than expected increase in payroll	-0.10
Effect of actual contributions less than expected	0.02
Recommended Contribution as of June 30, 2018[1]	4.91%

[1] *If received on July 15.*

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
06/30/2013	$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
06/30/2018	67,137,848	1,497,370,105	1,692,319,894	2,628,843,511	100	100	63

EXHIBIT I

Summary of Supplementary Information

Valuation date	June 30, 2018
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 38.

Plan participants:	June 30, 2018	June 30, 2017
Current retirees, beneficiaries, and dependents receiving benefits	20,288	19,539
Current active participants	26,042	25,457
Terminated participants entitled but not yet eligible	1,401	1,280
Total	47,731	46,276

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, 2014 through June 30, 2017 Actuarial Experience Study dated June 29, 2018, economic assumption review dated June 30, 2017 and retiree health assumptions letter dated September 18, 2018. 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, 2018
Data:	LACERS provided detailed census data and financial data for post-employment benefits.
Post-Retirement Mortality Rates:	
Healthy Members and All Beneficiaries:	Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.
Disabled Members:	Headcount-Weighted RP-2014 Disabled Retiree Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.

The RP-2014 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

Termination Rates Before Retirement:

Pre-Retirement Mortality: Headcount-Weighted RP-2014 Employee Mortality Table (separate tables for males and females) times 90%, projected generationally with the two-dimensional mortality improvement scale MP-2017.

	Rate (%)	
Age	**Disability**	**Termination***
25	0.01	7.00
30	0.02	7.00
35	0.05	5.50
40	0.07	3.90
45	0.13	3.20
50	0.19	2.70
55	0.20	2.50
60	0.20	2.50

* *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	12.00
1	10.00
2	9.00
3	8.25
4	7.75

Retirement Rates:

	Rate (%)					
	Tier 1		APO Tier 1(1)		Tier 3	
Age	Non-55/30	55/30	Non-55/30	55/30	Non-55/30	55/30
50	6.0	0.0	7.0	0.0	6.0	0.0
51	3.0	0.0	4.0	0.0	3.0	0.0
52	3.0	0.0	4.0	0.0	3.0	0.0
53	3.0	0.0	4.0	0.0	3.0	0.0
54	17.0	0.0	18.0	0.0	16.0	0.0
55	6.0	24.0	7.0	25.0	0.0(2)	23.0
56	6.0	16.0	7.0	17.0	0.0(2)	15.0
57	6.0	16.0	7.0	17.0	0.0(2)	15.0
58	6.0	16.0	7.0	17.0	0.0(2)	15.0
59	6.0	16.0	7.0	17.0	0.0(2)	15.0
60	7.0	16.0	8.0	17.0	6.0	15.0
61	7.0	16.0	8.0	17.0	6.0	15.0
62	7.0	16.0	8.0	17.0	6.0	15.0
63	7.0	16.0	8.0	17.0	6.0	15.0
64	7.0	16.0	8.0	17.0	6.0	15.0
65	13.0	20.0	14.0	21.0	12.0	19.0
66	13.0	20.0	14.0	21.0	12.0	19.0
67	13.0	20.0	14.0	21.0	12.0	19.0
68	13.0	20.0	14.0	21.0	12.0	19.0
69	13.0	20.0	14.0	21.0	12.0	19.0
70	100.0	100.0	100.0	100.0	100.0	100.0

(1) *Consistent with the cost study prepared for the adoption of enhanced Tier 1 retirement benefits, we have estimated the rates above by increasing the retirement rates for Tier 1 by a flat 1%.*

(2) *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 59 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 2018-2019 Fiscal Year Subsidy
Delta Dental PPO	79.2%	$44.60
DeltaCare USA	20.8%	$13.19

Per Capita Cost Development – Tier 1, Not Subject to Medical Subsidy Cap:
Participant Under Age 65 or Not Eligible for Medicare A & B

2018-2019 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	**62.4%**	$853.39	$1,790.80	**$853.39**	$1,706.78	$1,790.80	**$1,706.78**	$853.39	$853.39	**$853.39**
Anthem Blue Cross PPO	**21.9%**	$1,270.81	$1,790.80	**$1,270.81**	$2,537.02	$1,790.80	**$1,790.80**	$1,270.81	$853.39	**$853.39**
Anthem Blue Cross HMO	**15.7%**	$1,003.40	$1,790.80	**$1,003.40**	$2,002.19	$1,790.80	**$1,790.80**	$1,003.40	$853.39	**$853.39**

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

Participant Eligible for Medicare A & B

2018-2019 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	**58.1%**	$259.86	$259.86	**$259.86**	$519.72	$519.72	**$519.72**	$259.86	$259.86	**$259.86**
Anthem Blue Cross Medicare Supplement	**30.6%**	$542.51	$542.51	**$542.51**	$1,080.42	$1,062.50	**$1,062.50**	$542.51	$542.51	**$542.51**
UHC Medicare Adv. HMO for California**	**11.3%**	$273.69	$273.69	**$273.69**	$542.78	$542.78	**$542.78**	$273.69	$273.69	**$273.69**

* 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	$478.43	$478.43
UHC Medicare Adv. HMO for California	$219.09	$396.47	$219.09

These rates only apply to a few inactive members. No active members are subject to the retiree medical subsidy cap.

Adjustments to per-capita costs (as shown on page 35) based on age, gender, and status, are as follows:

	Retiree		Spouse	
Age	**Male**	**Female**	**Male**	**Female**
55	0.9037	0.9330	0.7112	0.8055
60	1.0732	1.0056	0.9521	0.9342
64	1.2312	1.0668	1.2019	1.0515
65	0.9193	0.7814	0.9193	0.7814
70	1.0655	0.8421	1.0655	0.8421
75	1.1482	0.9064	1.1482	0.9064
80+	1.2365	0.9772	1.2365	0.9772

Spouse/Domestic Partner Coverage:	60% of male and 35% 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	60%
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:

MEDICAL TRENDS FOR THE JUNE 30, 2018 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, 2018 through June 30, 2019)

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 2018-2019 Fiscal Year premium	3.50%	3.25%	3.50%	4.29%	-1.75%	3.25%

			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
2019-2020	6.87%	6.37%	2019	7.00%*	6.50%*
2020-2021	6.62%**	6.12%**	2020	6.75%	6.25%
2021-2022	6.37%	5.87%	2021	6.50%	6.00%
2022-2023	6.12%	5.62%	2022	6.25%	5.75%
2023-2024	5.87%	5.37%	2023	6.00%	5.50%
2024-2025	5.62%	5.12%	2024	5.75%	5.25%
2025-2026	5.37%	4.87%	2025	5.50%	5.00%
2026-2027	5.12%	4.62%	2026	5.25%	4.75%
2027-2028	4.87%	4.50%	2027	5.00%	4.50%
2028-2029	4.62%	4.50%	2028	4.75%	4.50%
2029 and later	4.50%	4.50%	2029	4.50%	4.50%

Dental Premium Trend	4.00% for all years
Medicare Part B Premium Trend	Trend for the 2018-19 fiscal year will be calculated based on the actual increase in Medicare B premium from 2018 to 2019, when it becomes available. 4.00% for years following the 2019 calendar year.

** For example, the 7.00% assumption when applied to the 2019 non-Medicare medical premiums would provide the projected 2020 non-Medicare medical premiums. This trend would also be applied to the maximum medical subsidy, based on the non-Medicare Kaiser premium.*

*** The 2020-2021 premium increases include additional estimated increases of 1.0% (non-Medicare) and 0.5% (Medicare) from the impact of the Health Insurance Tax (HIT).*

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 require the inclusion of the excise tax in the liability.

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 ultimate trend rate was reduced from 4.50% to 4.00% for Medicare Part B and Dental.

Starting premium costs and first year trends were revised to reflect 2019 calendar year premium data.

Medical and dental carrier election assumptions were updated.

The spouse coverage and retiree medical participation assumptions were updated.

Based on the June 30, 2017 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were as follows:

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.

Changes in Actuarial Assumptions (continued):

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

Changes in Actuarial Assumptions (continued):

Retirement Rates:

	Rate (%)					
	Tier 1		APO Tier 1(1)		Tier 3	
Age	Non-55/30	55/30	Non-55/30	55/30	Non-55/30	55/30
50	6.0	0.0	7.0	0.0	6.0	0.0
51	3.0	0.0	4.0	0.0	3.0	0.0
52	3.0	0.0	4.0	0.0	3.0	0.0
53	3.0	0.0	4.0	0.0	3.0	0.0
54	16.0	0.0	17.0	0.0	15.0	0.0
55	6.0	20.0	7.0	21.0	0.0(2)	19.0
56	6.0	14.0	7.0	15.0	0.0(2)	13.0
57	6.0	14.0	7.0	15.0	0.0(2)	13.0
58	6.0	14.0	7.0	15.0	0.0(2)	13.0
59	6.0	14.0	7.0	15.0	0.0(2)	13.0
60	6.0	14.0	7.0	15.0	5.0	13.0
61	6.0	14.0	7.0	15.0	5.0	13.0
62	7.0	15.0	8.0	16.0	6.0	14.0
63	7.0	15.0	8.0	16.0	6.0	14.0
64	7.0	16.0	8.0	17.0	6.0	15.0
65	12.0	17.0	13.0	18.0	11.0	16.0
66	12.0	17.0	13.0	18.0	11.0	16.0
67	12.0	17.0	13.0	18.0	11.0	16.0
68	12.0	17.0	13.0	18.0	11.0	16.0
69	12.0	17.0	13.0	18.0	11.0	16.0
70	100.0	100.0	100.0	100.0	100.0	100.0

(1) *Consistent with the cost study prepared for the adoption of enhanced Tier 1 benefits, we have estimated the rates above by increasing the retirement rates for Tier 1 by a flat 1%.*

(2) *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.

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, 2018, the maximum health subsidy is $1,790.80 per month, remaining unchanged in calendar year 2019. This amount includes coverage of dependent premium costs.

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. This refers to dependents of retired members with Medicare Parts A and B. It does not apply to those without Medicare or Part B only.

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, 2018, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2019.

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 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 ($853.39 per month as of July 1, 2018, remaining unchanged in calendar year 2019).
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: Note that a new Tier 1 Enhanced Plan providing a higher retirement benefit was adopted pursuant to Ordinance No. 184853. However, other than Segal applying higher retirement rate assumptions to anticipate somewhat earlier retirement, there are no differences between the retiree health benefits paid by LACERS to those members.

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.
ADC as a Percentage of Covered Payroll:	The ratio of the actuarially determined contribution to covered payroll.
Health Care Cost Trend Rates:	The annual rate of increase in net claims costs per individual benefiting from the Plan.
Actuarially Determined Contribution (ADC):	The ADC is equal to the sum of the normal cost and the amortization of the unfunded actuarial accrued liability.

Segal Consulting

Los Angeles City Employees' Retirement System

Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2018

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, 2018

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, 2018. 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:

Andy Yeung

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

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

DNA/HY

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, 2018. 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, 2018, provided by LACERS;
- The assets of the Plan as of June 30, 2018, 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, 2018 and 2017 have been determined from the actuarial valuations as of June 30, 2018 and June 30, 2017, respectively.

Significant Issues in Valuation Year

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

- As part of this valuation, we obtained actual membership information available for the first time for the Airport Peace Officers (APO) who elected to stay at LACERS, and would therefore be entitled to enhanced Tier 1 benefits, instead of transferring to LAFPP on January 7, 2018. Using that data and applying the method we previously discussed with LACERS, we have estimated the increase in NPL to improve past service earned through January 6, 2018 from Tier 1 to enhanced Tier 1 by using salary and other demographic information reported in the June 30, 2018 valuation. That increase in NPL was calculated by using service earned through January 6, 2018.[1] That increase in the NPL determined using the actuarial assumptions in the June 30, 2018 valuation has been adjusted to reflect the anticipated payment of the $5,700 required to receive the enhanced benefits by every APO member with past service. We have further adjusted the change in the NPL to reflect the contributions paid by the Airport for the period January 7, 2018 to June 30, 2018.
- The NPL increased from $5.28 billion as of June 30, 2017 to $5.71 billion as of June 30, 2018 mainly due to changes in the actuarial assumptions (that change was about $0.48 billion), inclusion of the enhanced benefits for the APO discussed above (that change was about $0.03 billion), and other miscellaneous losses (including about $0.13 billion due to higher than expected salaries for continuing active members), offset somewhat by the return on the market value of retirement plan assets of 9.35%[2] during 2017/2018 that was more than the assumption of 7.25% used in the June 30, 2017 valuation (that gain was about $0.28 billion). Changes in these values during the last two fiscal years ending June 30, 2017 and June 30, 2018 can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL as of June 30, 2018 and 2017 was 7.25% 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, 2018 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.

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[1] *We have excluded benefit enhancement for service earned after January 6, 2018 because higher normal cost contributions would have already been paid by the Airport.*

[2] *Net of investment expenses only.*

Summary of Key Valuation Results

	2018	2017
Disclosure elements for fiscal year ending June 30:		
Service cost[1]	$352,282,612	$340,758,622
Total Pension Liability	19,944,579,058	18,458,187,953
Plan Fiduciary Net Position	14,235,230,528	13,180,515,725
Net Pension Liability	5,709,348,530	5,277,672,228
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	$450,195,254	$453,356,059
Actual contributions	450,195,254	453,356,059
Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:		
Number of retired members and beneficiaries	19,379	18,805
Number of vested terminated members[2]	8,028	7,428
Number of active members	26,042	25,457
Key assumptions as of June 30:		
Investment rate of return	7.25%	7.25%
Inflation rate	3.00%	3.00%
Projected salary increases[3]	Ranges from 10.00% to 3.90%, based on years of service	Ranges from 10.00% to 3.90%, based on years of service

[1] *The service cost is based on the previous year's valuation, meaning the 2018 and 2017 values are based on the valuations as of June 30, 2017 and June 30, 2016, respectively. The 2018 service cost has been calculated using the assumptions shown in the 2017 column and the 2017 service cost has been calculated using the following assumptions:*

Key assumptions as of June 30, 2016:	
Investment rate of return	*7.50%*
Inflation rate	*3.25%*
*Projected salary increases**	*Ranges from 10.50% to 4.40%, based on years of service*

**Includes inflation of 3.25% plus real across the board salary increases of 0.75% plus merit and promotional increases.*

[2] *Includes terminated members due a refund of employee contributions.*

[3] *Includes inflation at 3.00% plus real across the board salary increase of 0.50%, 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, 2018, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	19,379
Vested terminated members entitled to, but not yet receiving benefits(1)	8,028
Active members	26,042
Total	53,449

(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. All Tier 1 Airport Peace Officers (including certain fire fighters) appointed to their positions before January 7, 2018 who elected to remain at LACERS after January 7, 2018 are designated as Tier 1 Enhanced. 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 and Tier 1 Enhanced 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. Tier 1 Enhanced members are eligible to retire for service-connected disability without a service requirement, and once they have 5 or more years of continuous service for a nonservice-connected disability.

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. Under the Tier 1 Enhanced formula, the monthly service retirement allowance at normal retirement age is 2.30% of final average monthly compensation per year of service credit. Reduced retirement allowances are available for early retirement for Tier 1 and Tier 1 Enhanced 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 and Tier 1 Enhanced 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 and Tier 1 Enhanced, 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 and Tier 1 Enhanced 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, Tier 1 Enhanced, and Tier 3 formulas ("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, Tier 1 Enhanced, 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 Tier 1 Enhanced, and at 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, 2018 was 21.88% of compensation.[3]

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 1 Enhanced and Tier 3 members contribute at 11.0% of compensation.

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[3] *Based on the June 30, 2016 funding valuation (which established funding requirements for fiscal year 2017/2018). 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, 2018	**June 30, 2017**
Total Pension Liability	$19,944,579,058	$18,458,187,953
Plan Fiduciary Net Position	-14,235,230,528	-13,180,515,725
System's Net Pension Liability	$5,709,348,530	$5,277,672,228
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	71.37%	71.41%

The NPL was measured as of June 30, 2018 and 2017. The Plan's Fiduciary Net Position was valued as of the measurement date, while the TPL was determined based upon the results of the actuarial valuations as of June 30, 2018 and 2017, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of June 30, 2018 and 2017 are the same as those used in the LACERS funding valuations as of June 30, 2018 and 2017, respectively.

Actuarial assumptions. The TPL as of June 30, 2018 was determined by an actuarial valuation as of June 30, 2018. The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an experience study for the period from July 1, 2014 through June 30, 2017. They are the same as the assumptions used in the June 30, 2018 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 and including inflation
Other assumptions	Same as those used in the June 30, 2018 actuarial valuation

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. 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 and including inflation
Other assumptions	Same as those used in the June 30, 2017 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 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 are summarized in the following table. These values were used in the derivation of the long-term expected investment rate of return assumption for the actuarial valuation as of June 30, 2018. This information is subject to change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term (Arithmetic) Expected Real Rate of Return
U.S. Large Cap Equity	14.00%	5.32%
U.S. Small Cap Equity	5.00%	6.07%
Developed International Large Cap Equity	17.00%	6.67%
Developed International Small Cap Equity	3.00%	7.14%
Emerging Market Equity	7.00%	8.87%
Core Bond	13.75%	1.04%
High Yield Bond	2.00%	3.09%
Bank Loan	2.00%	3.00%
TIPS	3.50%	0.97%
Emerging Market Debt (External)	4.50%	3.44%
Real Estate	7.00%	4.68%
Cash	1.00%	0.01%
Commodities	1.00%	3.36%
Additional Public Real Assets	1.00%	4.76%
Real Estate Investment Trust (REIT)	0.50%	5.91%
Private Debt	3.75%	5.50%
Private Equity	14.00%	8.97%
Total	100.00%	

Discount rate: The discount rate used to measure the Total Pension Liability was 7.25% as of June 30, 2018 and June 30, 2017. 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 employee 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, 2018 and June 30, 2017.

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, 2018, 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, 2018	$8,449,878,967	$5,709,348,530	$3,451,002,831

EXHIBIT 3

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

	2018	2017
Total Pension Liability		
Service cost(1)	$352,282,612	$340,758,622
Interest	1,332,878,299	1,302,278,282
Change of benefit terms	25,173,222	0
Differences between expected and actual experience	144,224,403	-146,474,065
Changes of assumptions	483,717,164	340,717,846
Benefit payments, including refunds of employee contributions	-851,884,595	-804,089,061
Net change in Total Pension Liability	$1,486,391,105	$1,033,191,624
Total Pension Liability – beginning	18,458,187,953	17,424,996,329
Total Pension Liability – ending (a)	$19,944,579,058	$18,458,187,953
Plan Fiduciary Net Position		
Contributions – employer	$450,195,254	$453,356,059
Contributions – employee	230,756,920	221,828,781
Net investment income	1,243,817,173	1,517,544,363
Benefit payments, including refunds of employee contributions	-851,884,595	-804,089,061
Administrative expense	-17,698,803	-17,453,832
Other	-471,146(2)	0
Net change in Plan Fiduciary Net Position	$1,054,714,803	$1,371,186,310
Plan Fiduciary Net Position – beginning	13,180,515,725	11,809,329,415
Plan Fiduciary Net Position – ending (b)	$14,235,230,528	$13,180,515,725
System's Net Pension Liability – ending (a) – (b)	$5,709,348,530	$5,277,672,228
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	71.37%	71.41%
Covered payroll(3)	$2,057,565,478	$1,973,048,633
Plan Net Pension Liability as percentage of covered payroll	277.48%	267.49%

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(1) *The service cost is based on the previous year's valuation, meaning the 2018 and 2017 values are based on the valuations as of June 30, 2017 and June 30, 2016, respectively. The 2018 service cost has been calculated using the assumptions shown in the 2017 column on page iii and the 2017 service cost has been calculated using the following assumptions:*

Key assumptions as of June 30, 2016:

Investment rate of return	*7.50%*
Inflation rate	*3.25%*
*Projected salary increases**	*Range from 10.50% to 4.40%, based on years of service*

**Includes inflation of 3.25% plus real across the board salary increases of 0.75% plus merit and promotional increases.*

(2) *Correction made by LACERS to beginning of year interest posted to member reserves.*

(3) *Covered payroll is defined as the payroll on which contributions to a pension plan are based.*

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 Payroll[1]	Contributions as a Percentage of Covered Payroll
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%
2018	450,195,254	450,195,254	0	2,057,565,478	21.88%

(1) *Covered payroll is defined as the payroll on which contributions to a pension plan are based.*

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, 2018 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: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement Scale MP-2017.
Other assumptions	Same as those used in the June 30, 2018 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, 2018

($ 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)
2017	$13,181	$681	$852	$18	$1,243	$14,235
2018	14,235	757	991	19	1,019	15,000
2019	15,000	752	1,023	20	1,073	15,783
2020	15,783	750	1,085	21	1,127	16,553
2021	16,553	750	1,149	22	1,180	17,312
2022	17,312	750	1,214	23	1,232	18,057
2023	18,057	750	1,279	24	1,284	18,787
2024	18,787	704	1,347	25	1,332	19,452
2025	19,452	709	1,413	26	1,378	20,100
2044	27,268	115 *	2,404	37	1,883	26,826
2045	26,826	110 *	2,414	36	1,850	26,336
2046	26,336	105 *	2,421	35	1,814	25,799
2047	25,799	99 *	2,426	35	1,775	25,212
2048	25,212	93 *	2,429	34	1,732	24,573
2081	2,526	16 *	501	3	163	2,201
2082	2,201	15 *	450	3	142	1,904
2083	1,904	13 *	401	3	122	1,636
2084	1,636	12 *	355	2	105	1,395
2085	1,395	11 *	313	2	89	1,181
2101	22	1 *	10	0	1	14
2102	14	1 *	7	0	1	9
2103	9	1 *	5	0	0	6
2104	6	1 *	3	0	0	3
2105	3	0 *,**	2	0	0	2
2106	2	0 *,**	1	0	0	1
2107	1	0 *,**	1	0	0	0
2108	0	0 *,**	1	0	0	0
2109	0	0 *,**	0 **	0	0	0
2110	0	0 *,**	0 **	0	0	0
2111	0	0 *,**	0 **	0	0	0
2112	0	0 *,**	0 **	0	0	0
2113	0	0 *,**	0 **	0	0	0
2114	0	0 *,**	0 **	0	0	0
2115	0	0 *,**	0 **	0	0	0
2116	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, 2018

($ in millions) – continued

Notes:

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

(2) Amounts shown for the year beginning July 1, 2017 row are actual amounts, based on the unaudited financial statements provided by LACERS.

(3) Years 2026-2043, 2049-2080, and 2086-2100 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, 2018); 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, 2018. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2018 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 0.13% of the projected beginning Plan Fiduciary Net Position amount. The 0.13% portion was based on the actual fiscal year 2017 - 2018 administrative expenses as a percentage of the beginning Plan Fiduciary Net Position amount as of July 1, 2017. 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, 2018 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

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, 2018

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, 2018

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, 2018. 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. The health care trend and other related medical assumptions have been reviewed by Melissa Bissett, FSA, MAAA. 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, 2018. 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 surviving spouses as of June 30, 2018, provided by LACERS;
- The assets of the Plan as of June 30, 2018, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other (health and non-health) actuarial assumptions, regarding employee terminations, retirement, death, health care trend and enrollment, etc. as of June 30, 2018.

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, 2018 is the assumed investment return on Plan assets (e.g. 7.25% for the June 30, 2018 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 increased from $566.9 million as of June 30, 2017 to $580.5 million as of June 30, 2018. This increase is primarily as a result of changes in actuarial assumptions and unfavorable demographic experience, offset to some degree by favorable investment and premium renewal experience.
- The NOLs measured as of June 30, 2018 and 2017 have been determined from the valuations as of June 30, 2018 and 2017, respectively.

Summary of Key Valuation Results

	2018	2017
Disclosure elements for fiscal year ending June 30:		
Service cost(1)	$74,610,881	$68,385,120
Total OPEB Liability	3,256,827,847	3,005,806,234
Plan Fiduciary Net Position	2,676,371,615	2,438,861,850
Net OPEB Liability	580,456,232	566,944,384
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	$100,909,010	$97,457,455
Actual contributions	100,909,010	97,457,455
Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:		
Number of retired members and surviving spouses(2)	15,144	14,652
Number of vested terminated members	1,401	1,280
Number of active members	26,042	25,457
Key assumptions as of June 30:		
Discount rate	7.25%	7.25%
Health care premium trend rates		
Non-Medicare medical plan	Graded from 6.87% to ultimate 4.50% over 10 years(3)	Graded from 6.87% to ultimate 4.50% over 10 years
Medicare medical plan	Graded from 6.37% to ultimate 4.50% over 8 years(3)	Graded from 6.37% to ultimate 4.50% over 8 years
Dental and Medicare Part B	4.00%	4.50%

(1) *The service cost is always based on the previous year's valuation, meaning the 2018 and 2017 values are based on the valuations as of June 30, 2017 and June 30, 2016, respectively. The key assumptions used in the June 30, 2016 valuation are as follows:*

Discount rate	*7.50%*
Health care premium trend rates	
Non-Medicare medical plan	*Graded from 6.38% to ultimate 5.00% over 6 years*
Medicare medical plan	*Graded from 6.38% to ultimate 5.00% over 6 years*
Dental and Medicare Part B	*5.00%*

(2) *The total number of participants, including married dependents, receiving benefits is 20,288 as of June 30, 2018 and 19,539 as of June 30, 2017.*

(3) *The 2020-2021 premium increases include additional estimated increases of 1.0% (non-Medicare) and 0.5% (Medicare) from the impact of the Health Insurance Tax (HIT).*

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of an OPEB plan. 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 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.
- **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 health care trends and member enrollment in retiree health benefits. 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.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the System.

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 surviving spouses. 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, 2018, OPEB plan membership consisted of the following:

Retired members or surviving spouses currently receiving benefits(1)	15,144
Vested terminated members entitled to, but not yet receiving benefits	1,401
Active members	26,042
Total	42,587

(1) The total number of participants, including married dependents, receiving benefits is 20,288.

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, 2018, the maximum health subsidy is $1,790.80 per month; remaining unchanged in calendar year 2019. This amount includes coverage of dependent premium costs.

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. This refers to dependents of retired members with Medicare Parts A and B. It does not apply to those without Medicare or Part B only.

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, 2018, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2019.

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 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 ($853.39 per month as of July 1, 2018; remaining unchanged in calendar year 2019).

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%

Note that a new Tier 1 Enhanced Plan providing a higher retirement benefit was adopted pursuant to Ordinance No. 184853. However, other than Segal applying higher retirement rate assumptions to anticipate somewhat earlier retirement, there are no differences between the retiree health benefits paid by LACERS to those members.

EXHIBIT 2

Net OPEB Liability

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

	June 30, 2018	June 30,2017
Total OPEB Liability	$3,256,827,847	$3,005,806,234
Plan Fiduciary Net Position	-2,676,371,615	-2,438,861,850
System's Net OPEB Liability	$580,456,232	$566,944,384
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	82.18%	81.14%

The Net OPEB Liability was measured as of June 30, 2018 and 2017. 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, 2018 and 2017, respectively.

Plan provisions. The plan provisions used in the measurement of the NOL as of June 30, 2018 and 2017 are the same as those used in the LACERS funding valuations as of June 30, 2018 and 2017, respectively.

Actuarial assumptions. The Total OPEB Liabilities as of June 30, 2018 and June 30, 2017 were determined by actuarial valuations as of June 30, 2018 and June 30, 2017, respectively. The actuarial assumptions used in both the June 30, 2018 and June 30, 2017 valuations were based on the results of an economic actuarial assumptions study as of June 30, 2017. However, based on the results of an experience study for the period from July 1, 2014 through June 30, 2017, the demographic assumptions were changed for the 2018 valuation. The assumptions used in the June 30, 2018 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 and 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, 2018 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 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, are summarized in the following table. These values were used in the derivation of the long-term expected investment rate of return assumption for the actuarial valuation as of June 30, 2018. This information is subject to change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term (Arithmetic) Expected Real Rate of Return
U.S. Large Cap Equity	14.00%	5.32%
U.S. Small Cap Equity	5.00%	6.07%
Developed International Large Cap Equity	17.00%	6.67%
Developed International Small Cap Equity	3.00%	7.14%
Emerging Market Equity	7.00%	8.87%
Core Bond	13.75%	1.04%
High Yield Bond	2.00%	3.09%
Bank Loan	2.00%	3.00%
TIPS	3.50%	0.97%
Emerging Market Debt (External)	4.50%	3.44%
Real Estate	7.00%	4.68%
Cash	1.00%	0.01%
Commodities	1.00%	3.36%
Additional Public Real Assets	1.00%	4.76%
Real Estate Investment Trust (REIT)	0.50%	5.91%
Private Debt	3.75%	5.50%
Private Equity	14.00%	8.97%
Total	100.00%	

Discount rate: The discount rate used to measure the Total OPEB Liability was 7.25% as of June 30, 2018 and June 30, 2017. 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, 2018, 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, 2018	$1,048,382,470	$580,456,232	$198,029,442

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, 2018, 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, 2018	$144,917,663	$580,456,232	$1,151,432,691

**Current trend rates: 6.87% graded down to 4.5% over 10 years for Non-Medicare medical plan costs and 6.37% graded down to 4.5% over 8 years for Medicare medical plan costs. The 2020-2021 premium increases include additional estimated increases of 1.0% (non-Medicare) and 0.5% (Medicare) from the impact of the Health Insurance Tax (HIT). 4.0% 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

	2018	2017
Total OPEB Liability		
Service cost[1]	$74,610,881	$68,385,120
Interest	218,687,305	210,169,949
Change of benefit terms (retirement rates adjusted for Enhanced Tier 1)	948,264	0
Differences between expected and actual experience[2]	-7,321,481	19,666,471
Changes of assumptions	92,177,641	33,511,927
Benefit payments	-128,080,997	-119,616,188
Net change in Total OPEB Liability	$251,021,613	$212,117,279
Total OPEB Liability – beginning	3,005,806,234	2,793,688,955
Total OPEB Liability – ending (a)	$3,256,827,847	$3,005,806,234
Plan Fiduciary Net Position		
Contributions – employer	$100,909,010	$97,457,455
Contributions – employee	0	0
Net investment income	269,065,074	330,707,601
Benefit payments	-128,080,997	-119,616,188
Administrative expense	-4,383,322	-4,564,135
Other	0	0
Net change in Plan Fiduciary Net Position	$237,509,765	$303,984,733
Plan Fiduciary Net Position – beginning	2,438,861,850	2,134,877,117
Plan Fiduciary Net Position – ending (b)	$2,676,371,615	$2,438,861,850
System’s Net OPEB Liability – ending (a) – (b)	$580,456,232	$566,944,384
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	82.18%	81.14%
Covered payroll[3]	$2,057,565,478	$1,973,048,633
Plan Net OPEB Liability as percentage of covered payroll	28.21%	28.73%

(1) *The service cost is always based on the previous year’s valuation, meaning the 2018 and 2017 values are based on the valuations as of June 30, 2017 and June 30, 2016, respectively.*

(2) *Includes a reallocation of liability between service cost and TOL as a result of adjustment to Entry Age cost methodology.*

(3) *Covered payroll is defined as the payroll on which contributions to an OPEB plan are based.*

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 Payroll[1]	Contributions as a Percentage of Covered Payroll
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%
2018	100,909,010	100,909,010	0	2,057,565,478	4.90%

(1) *Covered payroll is defined as the payroll on which contributions to an OPEB plan are based.*

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:	<u>June 30, 2018 valuation date</u>
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 Post-Retirement: RP-2014 Healthy Annuitant Mortality Table projected generationally with two-dimensional Scale MP-2017
Other assumptions	Same as those used in the June 30, 2018 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 3

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

	2018	2017
Total OPEB Liability		
Service cost[1]	$74,610,881	$68,385,120
Interest	218,687,305	210,169,949
Change of benefit terms (retirement rates adjusted for Enhanced Tier 1)	948,264	0
Differences between expected and actual experience[2]	-7,321,481	19,666,471
Changes of assumptions	92,177,641	33,511,927
Benefit payments	-128,080,997	-119,616,188
Net change in Total OPEB Liability	$251,021,613	$212,117,279
Total OPEB Liability – beginning	3,005,806,234	2,793,688,955
Total OPEB Liability – ending (a)	$3,256,827,847	$3,005,806,234
Plan Fiduciary Net Position		
Contributions – employer	$100,909,010	$97,457,455
Contributions – employee	0	0
Net investment income	269,380,196	330,707,601
Benefit payments	-128,080,997	-119,616,188
Administrative expense	-4,698,444	-4,564,135
Other	0	0
Net change in Plan Fiduciary Net Position	$237,509,765	$303,984,733
Plan Fiduciary Net Position – beginning	2,438,861,850	2,134,877,117
Plan Fiduciary Net Position – ending (b)	$2,676,371,615	$2,438,861,850
System's Net OPEB Liability – ending (a) – (b)	$580,456,232	$566,944,384
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	82.18%	81.14%
Covered payroll[3]	$2,057,565,478	$1,973,048,633
Plan Net OPEB Liability as percentage of covered payroll	28.21%	28.73%

(1) *The service cost is always based on the previous year's valuation, meaning the 2018 and 2017 values are based on the valuations as of June 30, 2017 and June 30, 2016, respectively.*

(2) *Includes a reallocation of liability between service cost and TOL as a result of adjustment to Entry Age cost methodology.*

(3) *Covered payroll is defined as the payroll on which contributions to an OPEB plan are based.*

ClearBridge
Investments

Los Angeles City Employees' Retirement System

Environmental, Social and Governance Investing

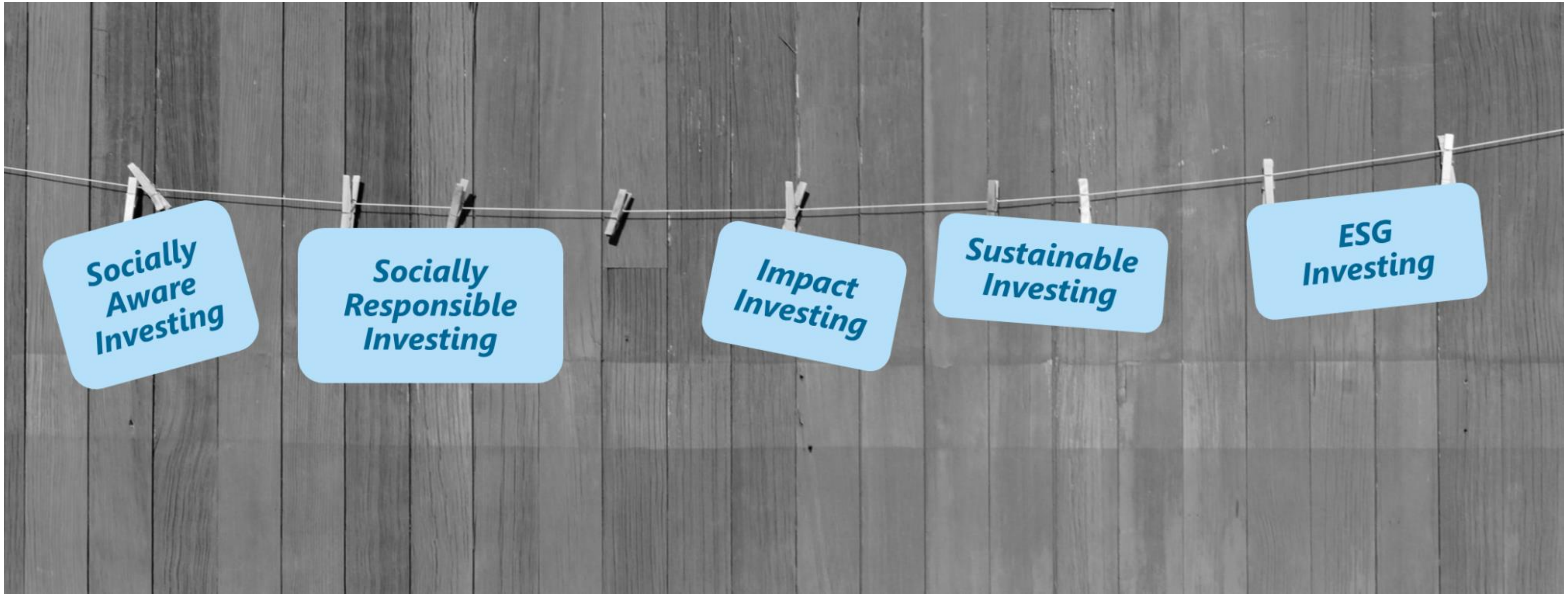
Mary Jane McQuillen
Managing Director, Portfolio Manager,
Head of ESG Investment

Vinay Nadkarni
Managing Director,
Head of Global Business Development

November 13, 2018

Agenda

An Industry With Many Names



ClearBridge Investments

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What is Environmental, Social & Governance (ESG) Investing?

Fundamentals

ESG analysis is integral to understanding the fundamentals of a business, leading to a broader view of companies and industries and contributing to better investment decisions

Risk

Companies with negative ESG characteristics represent significant risk to shareholder value

Performance

Companies with positive environmental, social and governance attributes are more likely to outperform their peers over the long term

Active Ownership

Active ownership – active proxy voting and engagement with companies to improve ESG practices – is an essential aspect of active investment management

ClearBridge
Investments

Three Key Issues in ESG Today

Fiduciary Duty

Performance

ESG Integration into Financial Analysis

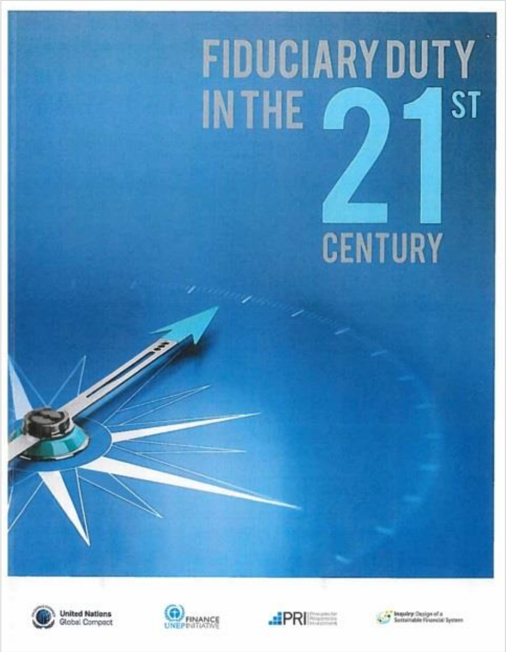
ESG Becoming a Fiduciary Priority

Perception

- Fiduciary duty is a barrier to asset owners integrating ESG issues into their investment process

Reality

- Many countries have added regulations requiring institutional investors to consider ESG issues in their investment due diligence



FIDUCIARY DUTY IN THE 21ST CENTURY

United Nations Global Compact

UNEP FINANCE INITIATIVE

PRI

"The literature on SRI is robust enough to say that there is a serious question around whether or not ESG issues are important to investment performance. This suggests that, at a minimum, due diligence processes must include assessment of the need to take account of these issues in investment decision making."

- *Larry Beeferman (Director, Pensions and Capital Stewardship Project, Labor and Worklife Program, Harvard Law School)*

Performance Question Has Been Answered

Perception

- A common objection of asset owners and consultants is that **"Holding companies to high ESG standards means sacrificing performance"**

Reality

- Third-party studies and our own experience confirm that **stocks with strong ESG characteristics perform as well or better than stocks overall**

"*Sustainable strategies* have performed the same or slightly better than traditional strategies with volatility equal or lower than traditional strategies."

– *Audrey Choi, CEO Morgan Stanley Institute for Sustainable Investing, October 2015*

"*High Sustainability* companies significantly outperform their counterparts over the long term, both in terms of stock market as well as accounting performance."

"We find that *High Sustainability* firms also perform better when we consider accounting rates of return, such as return-on-equity (ROE) and return-on-assets (ROA)."

– *Harvard Business School study, 2013*

"We show that employee satisfaction is associated with positive abnormal [stock] returns in countries with high labor market flexibility, such as the U.S. and U.K."

– *Wharton School of Business working paper, 2014*

Financial Analysis

Perception

- ESG factors are **superfluous** or only **qualitative** in nature

Reality

- ESG factors are critical **components of financial and risk analyses**

CFA Institute

ESG ISSUES IN INVESTING: INVESTORS DEBUNK THE MYTHS

This survey explains how investors view environmental, social, and governance (ESG) issues and data and the role ESG issues play in their investing process.

Which, if any, of the following ESG issues do you take into account in your investment analysis or decisions?

MYTH #1
Firms offer ESG products primarily for reputational reasons.

REALITY
The top reason investors consider ESG products is to adequately manage risk, and client demand is growing.

Why do you or why do you not take ESG issues into account in your investment decisions?

Top Reasons Why[1]

- **63%** To help manage investment risks
- **44%** Client/investors demand it
- **38%** ESG performance is a proxy for management quality
- **37%** It's my fiduciary duty
- **37%** To help identify investment opportunities
- **30%** My firm derives reputational benefit

Top Reasons Why Not[2]

- **47%** Lack of demand from clients/investors
- **35%** These issues are not material—no added value
- **21%** Lack of information/data
- **21%** Insufficient knowledge of how to consider these issues
- **15%** Inability to integrate ESG info in my quantitative models

[1] Results are representative of the 73% who take ESG issues into account, n=967.
[2] Results are representative of the 27% who do not take ESG issues into account, n=358.

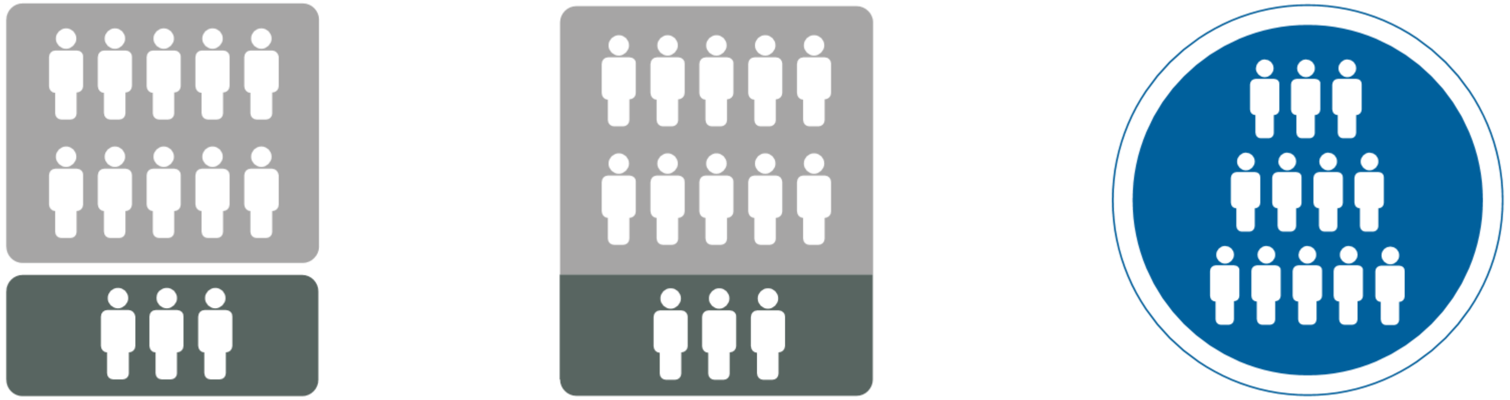
- 90% of the studies on the cost of capital show that sound sustainability standards lower the cost of capital of companies*
- 88% of the research shows that solid ESG practices result in better operational performance of firms*
- 80% of the studies show that stock price performance of companies is positively influenced by good sustainability practices*

---

* Source: From the Stockholder to the Stakeholder: How Sustainability Can Drive Financial Outperformance, Gordon L. Clark, Andreas Feiner and Michael Viehs, March 2015.

ESG in Practice

Infrastructure for ESG Integration



Model 1:

Third party ESG research firm

Model 2:

Segregated internal ESG research team

ClearBridge:

One team integrating ESG and fundamental research

ClearBridge Investments

Five Main Segments of ESG Integration in Practice

Portfolio construction and ESG integration

Company and thought leader engagement

Advocacy via proxy voting

Client interaction

Public education

ESG Considerations Vary by Sub-Sector

Sample Sector Considerations

	Retailer	Software and Technology Services
Environmental	**Green Buildings, HVAC, Power Efficiency, Retail Footprint, Packaging, Transportation**	**Energy Management, Waste and Wastewater Management**
Social	**Hourly Wages** **Supply Chains** **Employee Productivity**	**Data Security**
Governance	**Gender Diversity** **Board Independence** **Executive Compensation**	**Systemic Risk Management** **Competitive Behavior**

ESG Engagements Blueprint

Typical Industry Model(s)

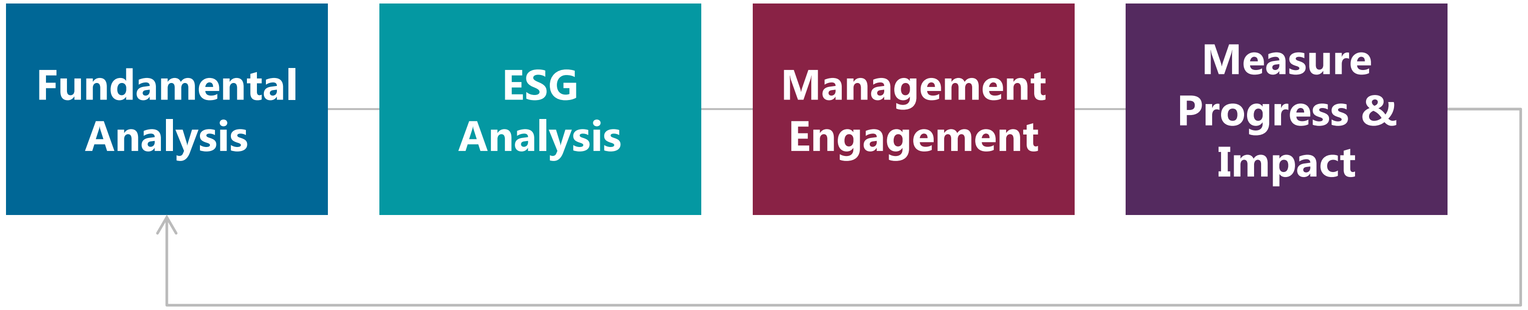
Business Focus

Issue Focus

example: **Margin Expansion**

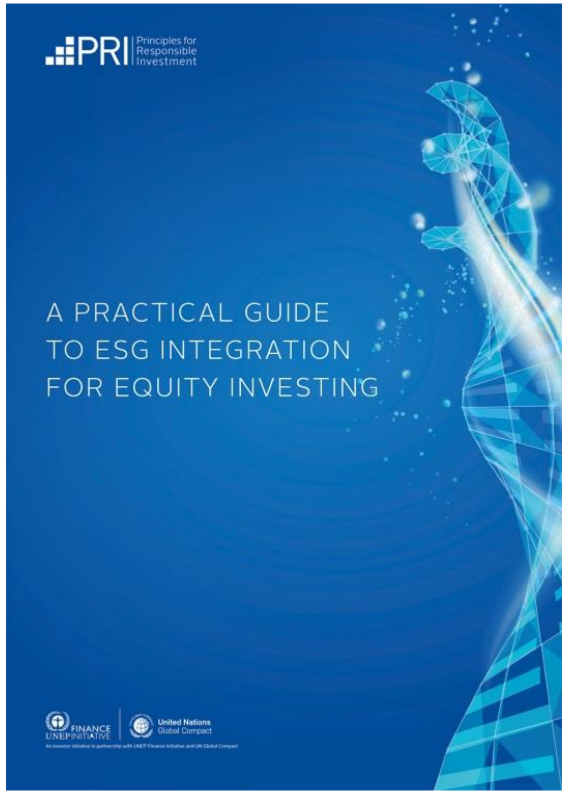
example: **Water Conservation**

ClearBridge Model: One Integrated Team



- Deep regular engagements on fundamental and ESG issues
- Interwoven discussions on sustainability issues that impact performance with key corporate executives

Case Study

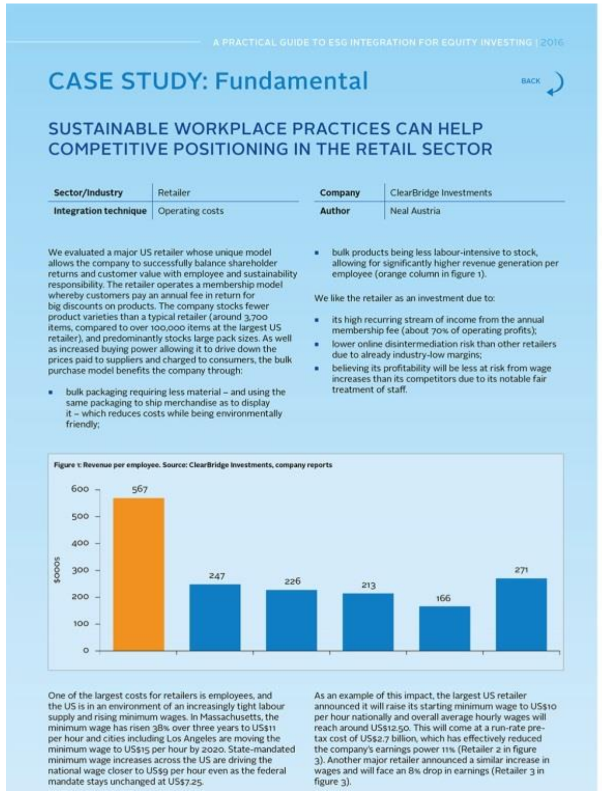


PRI Principles for Responsible Investment

A PRACTICAL GUIDE
TO ESG INTEGRATION
FOR EQUITY INVESTING

FINANCE UNEP INITIATIVE | United Nations Global Compact

An investor initiative in partnership with UNEP Finance Initiative and UN Global Compact



A PRACTICAL GUIDE TO ESG INTEGRATION FOR EQUITY INVESTING | 2016

CASE STUDY: Fundamental

BACK

SUSTAINABLE WORKPLACE PRACTICES CAN HELP COMPETITIVE POSITIONING IN THE RETAIL SECTOR

Sector/Industry	Retailer	**Company**	ClearBridge Investments
Integration technique	Operating costs	**Author**	Neal Austria

We evaluated a major US retailer whose unique model allows the company to successfully balance shareholder returns and customer value with employee and sustainability responsibility. The retailer operates a membership model whereby customers pay an annual fee in return for big discounts on products. The company stocks fewer product varieties than a typical retailer (around 3,700 items, compared to over 100,000 items at the largest US retailer), and predominantly stocks large pack sizes. As well as increased buying power allowing it to drive down the prices paid to suppliers and charged to consumers, the bulk purchase model benefits the company through:

- bulk packaging requiring less material – and using the same packaging to ship merchandise as to display it – which reduces costs while being environmentally friendly;
- bulk products being less labour-intensive to stock, allowing for significantly higher revenue generation per employee (orange column in figure 1).

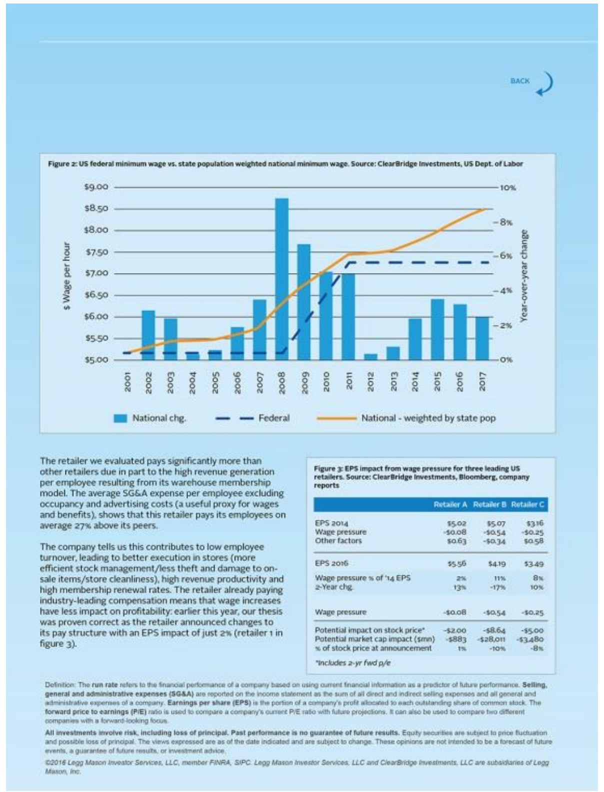
We like the retailer as an investment due to:

- its high recurring stream of income from the annual membership fee (about 70% of operating profits);
- lower online disintermediation risk than other retailers due to already industry-low margins;
- believing its profitability will be less at risk from wage increases than its competitors due to its notable fair treatment of staff.

Figure 1: Revenue per employee. Source: ClearBridge Investments, company reports

One of the largest costs for retailers is employees, and the US is in an environment of an increasingly tight labour supply and rising minimum wages. In Massachusetts, the minimum wage has risen 38% over three years to US$11 per hour and cities including Los Angeles are moving the minimum wage to US$15 per hour by 2020. State-mandated minimum wage increases across the US are driving the national wage closer to US$9 per hour even as the federal mandate stays unchanged at US$7.25.

As an example of this impact, the largest US retailer announced it will raise its starting minimum wage to US$10 per hour nationally and overall average hourly wages will reach around US$12.50. This will come at a run-rate pre-tax cost of US$2.7 billion, which has effectively reduced the company's earnings power 11% (Retailer 2 in figure 3). Another major retailer announced a similar increase in wages and will face an 8% drop in earnings (Retailer 3 in figure 3).



BACK

Figure 2: US federal minimum wage vs. state population weighted national minimum wage. Source: ClearBridge Investments, US Dept. of Labor

The retailer we evaluated pays significantly more than other retailers due in part to the high revenue generation per employee resulting from its warehouse membership model. The average SG&A expense per employee excluding occupancy and advertising costs (a useful proxy for wages and benefits), shows that this retailer pays its employees on average 27% above its peers.

The company tells us this contributes to low employee turnover, leading to better execution in stores (more efficient stock management/less theft and damage to on-sale items/store cleanliness), high revenue productivity and high membership renewal rates. The retailer already paying industry-leading compensation means that wage increases have less impact on profitability: earlier this year, our thesis was proven correct as the retailer announced changes to its pay structure with an EPS impact of just 2% (retailer 1 in figure 3).

Figure 3: EPS impact from wage pressure for three leading US retailers. Source: ClearBridge Investments, Bloomberg, company reports

	Retailer A	Retailer B	Retailer C
EPS 2014	$5.02	$5.07	$3.16
Wage pressure	-$0.08	-$0.54	-$0.25
Other factors	$0.63	-$0.34	$0.58
EPS 2016	$5.56	$4.19	$3.49
Wage pressure % of '14 EPS	2%	11%	8%
2-Year chg.	13%	-17%	10%
Wage pressure	-$0.08	-$0.54	-$0.25
Potential impact on stock price*	-$2.00	-$8.64	-$5.00
Potential market cap impact ($mn)	-$883	-$28,011	-$3,480
% of stock price at announcement	1%	-10%	-8%

*Includes 2-yr fwd p/e

Definition: The **run rate** refers to the financial performance of a company based on using current financial information as a predictor of future performance. **Selling, general and administrative expenses (SG&A)** are reported on the income statement as the sum of all direct and indirect selling expenses and all general and administrative expenses of a company. **Earnings per share (EPS)** is the portion of a company's profit allocated to each outstanding share of common stock. The **forward price to earnings (P/E)** ratio is used to compare a company's current P/E ratio with future projections. It can also be used to compare two different companies with a forward-looking focus.

All investments involve risk, including loss of principal. Past performance is no guarantee of future results. Equity securities are subject to price fluctuation and possible loss of principal. The views expressed are as of the date indicated and are subject to change. These opinions are not intended to be a forecast of future events, a guarantee of future results, or investment advice.

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Neal Austria, ClearBridge Global Consumer Analyst, authored a case study that was selected for inclusion in the landmark report.

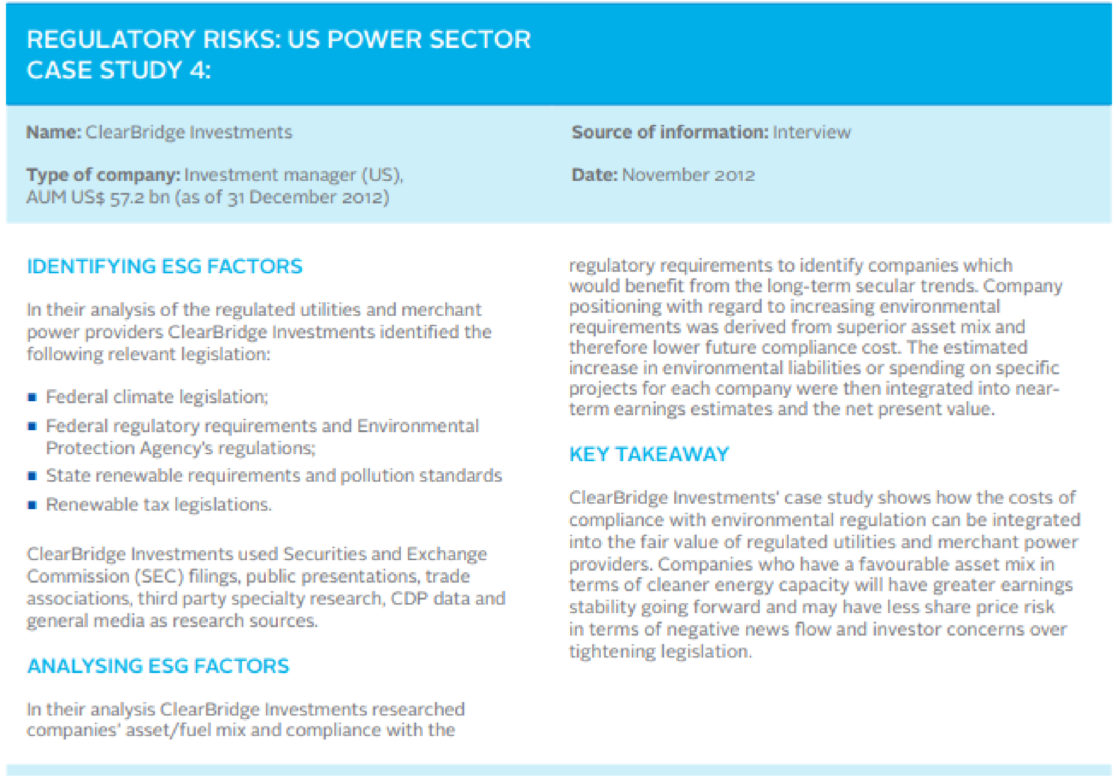
UN PRI Report: A Practical Guide to ESG Integration for Equity Investing

Case Study

PRI Principles for Responsible Investment

INTEGRATED ANALYSIS

HOW INVESTORS ARE ADDRESSING ENVIRONMENTAL, SOCIAL AND GOVERNANCE FACTORS IN FUNDAMENTAL EQUITY VALUATION



REGULATORY RISKS: US POWER SECTOR CASE STUDY 4:

Name: ClearBridge Investments

Type of company: Investment manager (US), AUM US$ 57.2 bn (as of 31 December 2012)

Source of information: Interview

Date: November 2012

IDENTIFYING ESG FACTORS

In their analysis of the regulated utilities and merchant power providers ClearBridge Investments identified the following relevant legislation:

- Federal climate legislation;
- Federal regulatory requirements and Environmental Protection Agency's regulations;
- State renewable requirements and pollution standards
- Renewable tax legislations.

ClearBridge Investments used Securities and Exchange Commission (SEC) filings, public presentations, trade associations, third party specialty research, CDP data and general media as research sources.

ANALYSING ESG FACTORS

In their analysis ClearBridge Investments researched companies' asset/fuel mix and compliance with the regulatory requirements to identify companies which would benefit from the long-term secular trends. Company positioning with regard to increasing environmental requirements was derived from superior asset mix and therefore lower future compliance cost. The estimated increase in environmental liabilities or spending on specific projects for each company were then integrated into near-term earnings estimates and the net present value.

KEY TAKEAWAY

ClearBridge Investments' case study shows how the costs of compliance with environmental regulation can be integrated into the fair value of regulated utilities and merchant power providers. Companies who have a favourable asset mix in terms of cleaner energy capacity will have greater earnings stability going forward and may have less share price risk in terms of negative news flow and investor concerns over tightening legislation.

Tatiana Eades, ClearBridge Senior Research Analyst for Utilities, authored a case study that was selected for inclusion in this 2013 PRI report.

UN PRI Report: Integrated Analysis.

ClearBridge Engagement in ESG Organizations

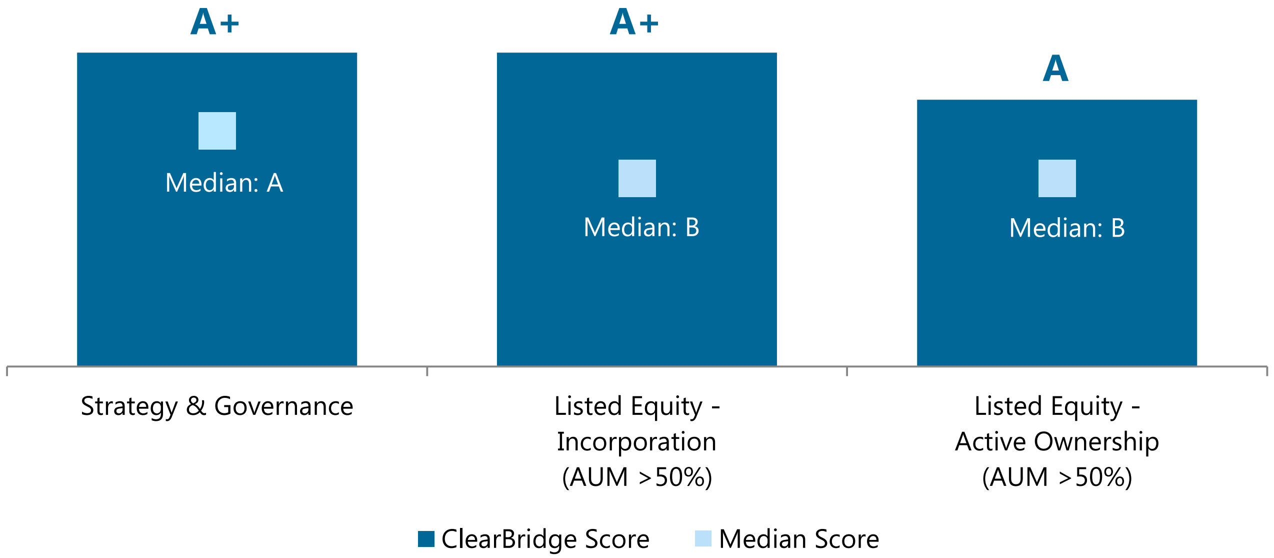
Principles for Responsible Investment (PRI)

The Principles

1. We will incorporate ESG issues into investment analysis and decision-making processes
2. We will be active owners and incorporate ESG issues into our ownership policies and practices
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest
4. We will promote acceptance and implementation of the Principles within the investment industry
5. We will work together to enhance our effectiveness in implementing the Principles
6. We will each report on our activities and progress towards implementing the Principles

ClearBridge is a PRI Signatory

- In the PRI Annual Assessment of all PRI Signatories, ClearBridge Investments achieved the highest scores (top quartile)* in 2018, 2017, 2016, 2015, 2014, 2011 and 2010 (for U.S. and Global)
  The PRI did not conduct a ranking of the Signatories' Annual Assessments in 2012 or 2013.



The PRI is an investor initiative in partnership with the UNEP Finance Initiative and the UN Global Compact. The Principles provide a voluntary framework for investment professionals who commit to integrate environmental, social, and governance (ESG) factors into their investment analysis and decision-making practices.

*Scores have been calculated based on signatories' self-assessment and using the scoring methodology approved by the PRI Assessment Group. Although a limited verification exercise was undertaken with a proportion of signatories, responses have not been independently audited by the PRI Secretariat, PRI Assessment Group, or any other third party. Individual results including comparisons to the overall results (quartiles) are indicative and do not imply an endorsement of signatory activity. While this information is believed to be reliable, no representations or warranties are made as to the accuracy of information presented, and no responsibility or liability can be accepted for any error, omission or inaccuracy in this information.

Source: www.unpri.org.

UN Sustainable Development Goals (SDGs)

- Approved and introduced in 2015, they provide a practical framework to guide ESG impact

- SDG – ESG integrated focus example: How water conservation can affect margin expansion

Appendix

Biographies

Name and Position		Industry Experience	ClearBridge Tenure	Education, Experience and Professional Designations
	**Mary Jane McQuillen** Managing Director, Head of ESG Investment, Portfolio Manager	22 years	• Joined predecessor in 1996 • Member of Proxy Committee	• Professional Organization Memberships: UN PRI Listed Equities Steering Committee & ESG Integration Sub-Committee, Sustainable Investments Institute (Si2) – Board Director, Investor Responsibility Research Center Institute (IRRC) – Board Director, CFA Society New York, Sustainable Investing Committee • Smith Barney Inc. – Business Unit Analyst • MBA in Finance from Columbia Business School • BS in Finance from Fordham University
	**Vinay Nadkarni** Managing Director, Head of Global Business Development	23 years	• Joined predecessor firm in 1996 • Member of the Management and GIPS Steering Committees	• Legg Mason Investors Inc. – Gatekeeper Relations/Product Specialist • Citigroup Asset Management – Corporate Development; SMA Product Manager • Travelers Companies – Senior Actuarial Assistant, achieved FCAS designation • Aetna Inc. – Property and Casualty Actuary • MBA from the Wharton School at the University of Pennsylvania • BS in Actuarial Science from Pennsylvania State University

DOL and ERISA on ESG Integration

Guidance and Materiality - Field Assistance Bulletin (FAB) dated April 23, 2018

Title I of ERISA

- Establishes minimum standards that govern the operation of private-sector employee benefit plans, including fiduciary responsibility rules

Interpretive Bulletin (IB) 2015-01

- The Department of Labor (DOL) reiterated its long-standing view that…plan fiduciaries are not permitted to sacrifice investment return or take on additional investment risk as a means of using plan investments to promote collateral social policy goals
- The preamble of IB 2015-01 added: "If a fiduciary prudently determines that an investment is appropriate based solely on economic considerations, including those that may derive from ESG factors, the fiduciary may make the investment without regard to any collateral benefits the investment may also promote."
- To the extent ESG factors, in fact, involve business risks or opportunities that are properly treated as economic considerations themselves in evaluating alternative investments, the weight given to those factors should also be appropriate to the level of risk and return involved compared to other relevant economic factors.
- Fiduciaries should avoid "too readily" treating ESG factors as "economically relevant" without proper due diligence.

Interpretive Bulletin (IB) 2016-01

- The DOL noted that investment policy statements are permitted to include policies concerning the use of ESG factors to evaluate investments, or on integrating ESG-related tools, metrics, or analyses to evaluate an investment's risk or return.

Additional Notes

- The FAB cannot override or change the Interpretive Bulletins in place already.
- Reiterates fiduciary duty guard rails regarding integration of ESG factors into the investment process.
- Shareholder engagement activities: Follow prudent fiduciary guidelines on engagement: (i) if they may enhance value of investment and (ii) not excessively expensive.

ClearBridge Investments

Source: U.S. Dept. of Labor.

ClearBridge Investments

A Distinguished History in Equity Investing

About Us

- Well-established global investment manager with a legacy dating back more than 50 years
- Headquartered in New York and operating from Baltimore, London, San Francisco and Wilmington
- Operating with investment independence, wholly-owned subsidiary of Legg Mason

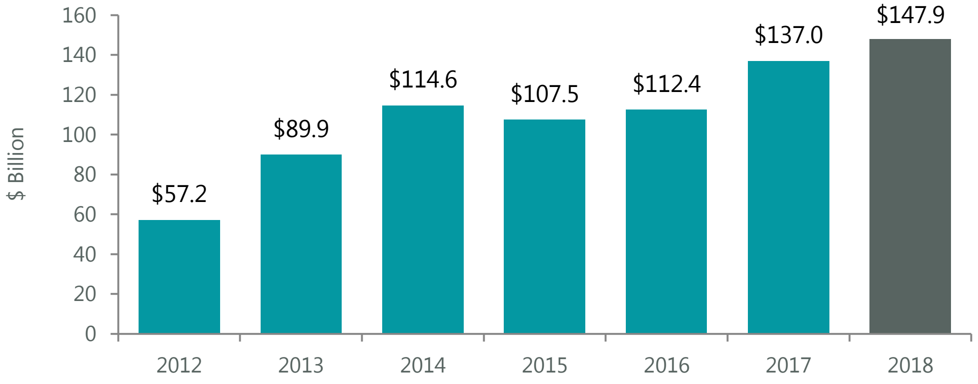
Culture of Longevity and Consistency

- Portfolio management team averages 27 years of investment industry experience and 19 years with the Firm
- Investment continuity ensured through team management and a commitment to internal promotion

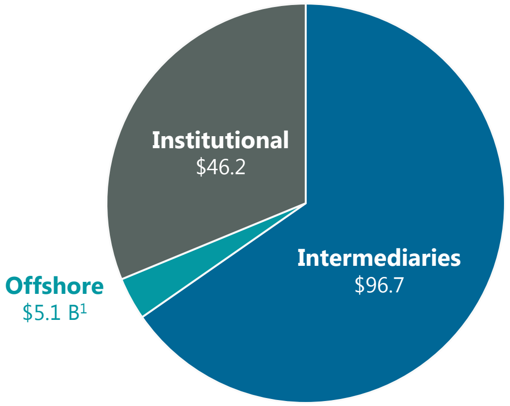
Client Focus

- Alignment of interests with our clients across every aspect of our business, from generating consistent investment performance to promoting sustainable business practices and delivering exceptional client service
- Ongoing centrally deployed research and risk management functions ensure constant diligence

Asset Growth Over Time



Assets by Client Type



ClearBridge Investments

Data as of September 30, 2018.

[1] Represents funds only – Institutional includes offshore AUM of approximately $1.2 billion.

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A Long-Term Commitment to Fundamental Investing

ClearBridge is committed to authentic active management, delivering performance distinct from market benchmarks

Diligent Research

Investment ideas are sourced from intensive research integrating fundamental analysis with environmental, social and governance (ESG) considerations, and leverage the wisdom of long-tenured investment teams, to construct high-conviction portfolios.

Business Model Focus

Quality guides stock selection, with an emphasis on companies featuring superior business models, sound capital allocation and healthy balance sheets. Our promotion of best-in-class ESG practices through company engagements and outreach reinforces this quality bias.

Patience

Patiently investing for the long term, harnessing in low turnover strategies the powerful compounding effects of earnings and cash flow growth.

Risk Awareness

A robust due diligence approach anticipates risks prior to stock purchase and consistently manages market and security-specific risks across portfolios and the Firm.

PRI Principles for Responsible Investment

An investor initiative
in partnership with

UNEP FINANCE INITIATIVE | United Nations Global Compact

Introduction to the Principles for Responsible Investment (PRI)

Ophir Bruck, US Network Manager

- RESPONSIBLE INVESTMENT -

Contents

What is responsible investment?

Incorporates 'value' and 'values-based' investing

Responsible investment is an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions, to better manage risk and generate sustainable, long-term returns.

Approaches to responsible investment

ESG Incorporation and active ownership

ESG Incorporation

ESG Integration

The process of integrating ESG issues and information into investment analysis:

- **ENVIRONMENTAL** – e.g. chemical pollution, water management, greenhouse gas emissions, renewable energy etc.
- **SOCIAL** – e.g. labour standards, freedom of association, controversial business practices, talent management etc.
- **GOVERNANCE** – e.g. corporate governance issues, bribery, corruption, lobbying activity etc.

ESG Screening

The process of excluding or seeking exposure to securities based on investor values or other criteria:

- **Exclusionary (negative)**
- **Best in class (positive)**
- **Norms-based**

Active Ownership

Interactions between the investor and current or potential investees:

- **Voting** (e.g. AGM, EGM or special meeting)
- **Shareholder engagement** (e.g. Shareholder resolutions, calling an EGM, complaint to regulator)
- **Other engagement** (Other engagements on ESG issues: proactive, reactive and ongoing)

Contents

The world is changing

Trends transforming business, marketplaces and society

Globalization and connectivity

Society and demographics

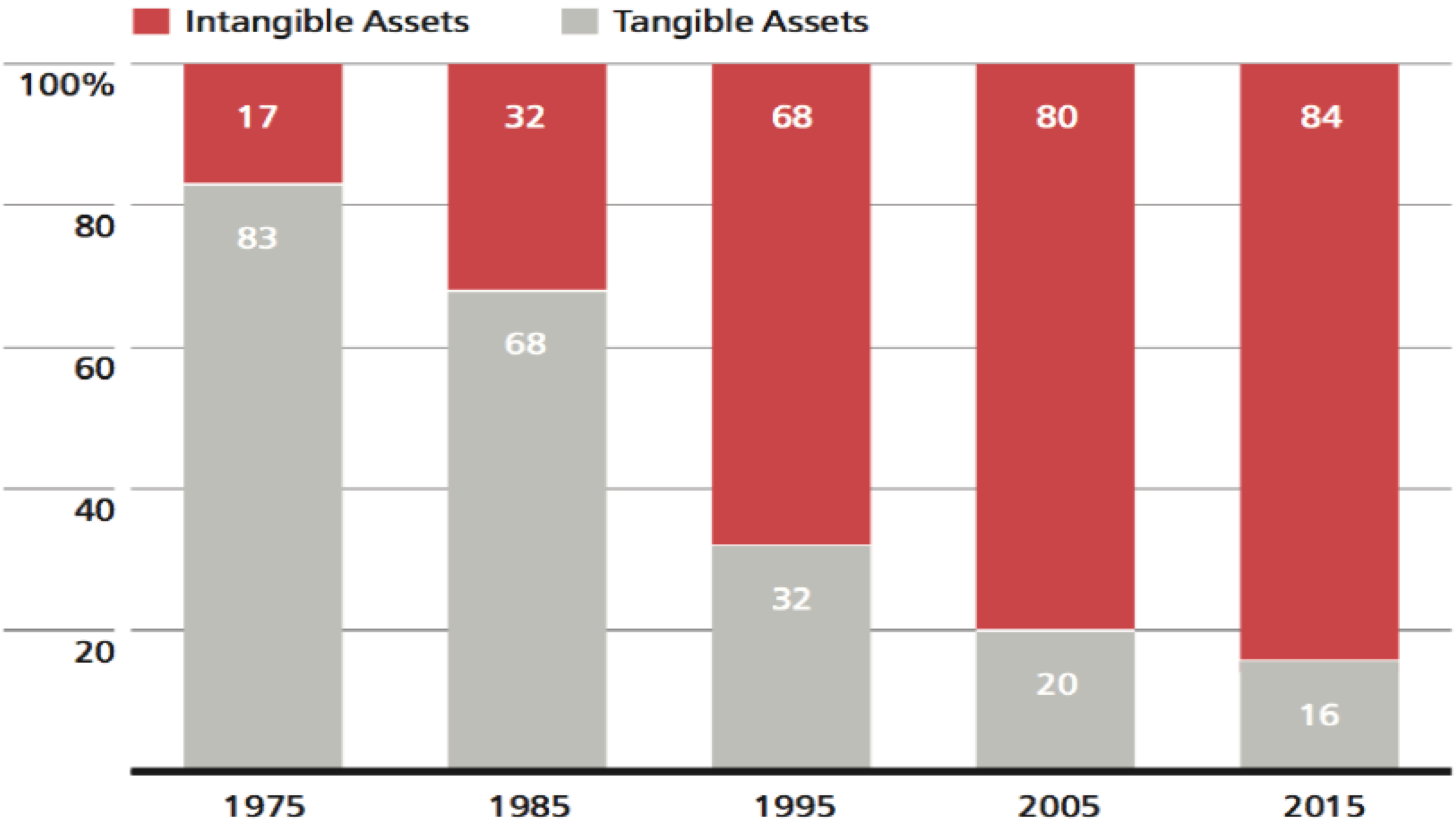
Environmental challenges

Emerging economy growth and dynamism

Technological advances

Valuation: The world has changed

Components of S&P 500 Market Value



Source: Ocean Tomo, *Ocean Tomo's Intangible Asset Market Value Study*, January 2015.

ESG issues can be material

Investors are increasingly focused on the impact of ESG factors

NIKE

"Nike's labor woes leave soiled footprint on image"

THE WALL STREET JOURNAL.

1997

bp

"BP set to pay largest environmental fine in US history for Gulf oil spill"

theguardian

2010

TEPCO

"Tokyo Electric executives to be charged over Fukushima nuclear disaster"

REUTERS

2011

"VW slumps to first net loss in 15 years and warns of scandal toll"

FINANCIAL TIMES

2014

"The sharing of 50M Facebook users' personal data led to the biggest ever one day drop in a company's market value"

FINANCIAL TIMES

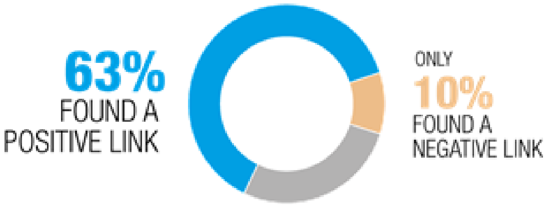
2018

Growing academic evidence

ESG incorporation does not come at a cost

Meta-study (December 2015)

OUT OF
2,000+
STUDIES
SINCE 1970



BETWEEN A COMPANY'S ESG PERFORMANCE AND ITS FINANCIAL PERFORMANCE

Friede, Lewis, Bassen & Busch
University of Hamburg/ Deutsche Asset Mgmt.

November 2009

"There are statistically significant positive abnormal returns associated with going long good corporate governance firms and shorting those with poor governance"

Cremers & Ferrell
Yale School of Management

November 2011

"Firms with high levels of job satisfaction, as measured by inclusion in the 'Best Companies to Work For in America', generate high long-run stock returns"

Edmans
The Wharton School

January 2012

"High-sustainability companies dramatically outperformed the low-sustainability ones in terms of both stock market and accounting measures."

Eccles, Ioannou & Serafeim
Harvard Business School

March 2015

"Responsibility and profitability are not incompatible but wholly complementary… 80% of the reviewed studies demonstrate that prudent sustainability practices have a positive influence on investment

Clark, Feiner & Viehs
Oxford University

August 2015

"After successful engagements companies experience improved accounting performance and governance and increased institutional ownership"

Dimson, Karakas & Li,
Fox School of Business/ University of Cambridge

January 2016

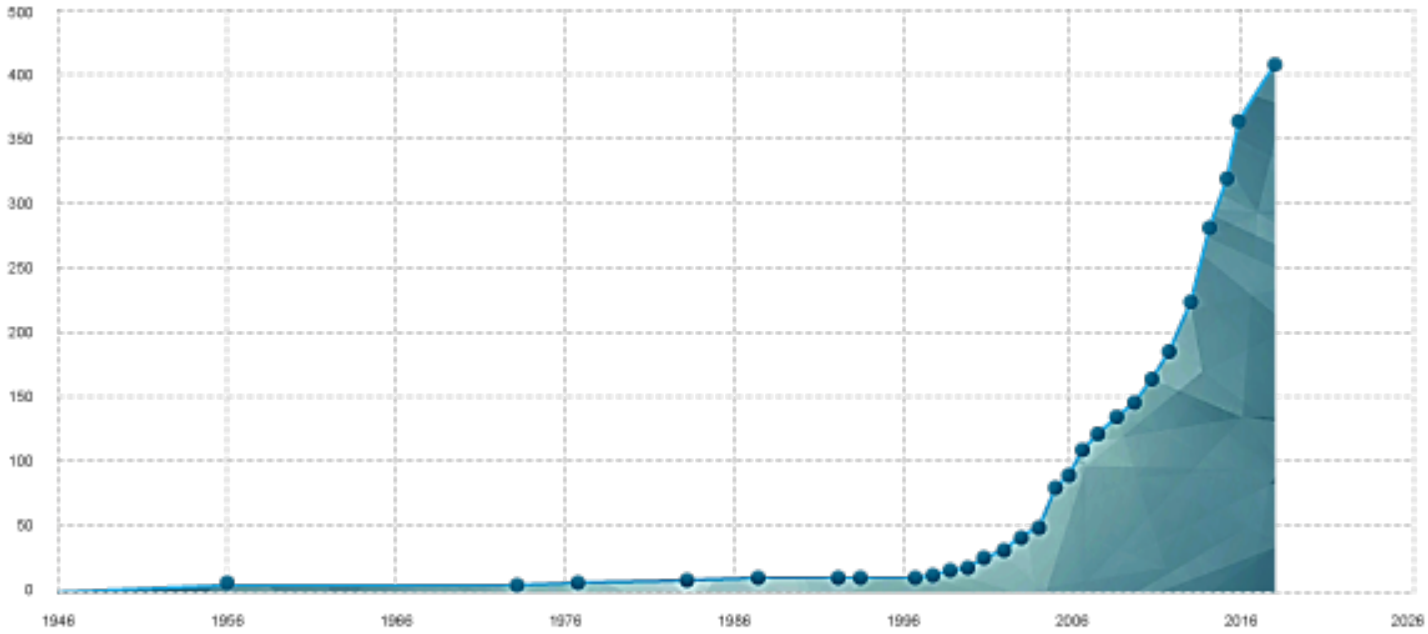
"Firm-size-adjusted carbon emissions have a positive and significant effect on loan spreads… suggesting that spread premia are driven by environmental risks rather than investor preferences"

Kleimeier & Viehs, ***Oxford University/ Maastricht University***

The changing regulatory environment

The pace of RI policy in increasing

The PRI identifies over 300 policy instruments that require or encourage responsible investment. Over half were introduced in the last five years.



Number of policy interventions per year. Source: PRI Responsible Investment Regulation database

The changing regulatory environment

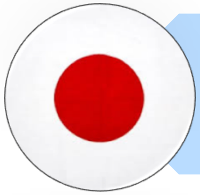
Examples of RI regulation around the world

Government Accountability Office (GAO), Report on Retirement Plan Investing (May 2018)

The US Department of Labour should "clarify whether the liability protection offered to qualifying default investment options allows use of ESG factors" and "provide further information to assist fiduciaries in investment management involving ESG factors (…)"

Department for Work and Pensions, Occupational Pension Schemes (Investment) Regulations* (June 2018)

Trustees should "state their policies in relation to financially material considerations, including but not limited to ESG considerations (including climate change)"



Financial Services Authority (FSA), Stewardship Code (2014) & Governance Code (2015)

Institutional investors should "enhance the medium-to long-term return on investments…by improving and fostering investee companies' corporate value and sustainable growth through constructive engagement, or purposeful dialogue."

European Commission Action Plan on Sustainable Finance (May 2018)

Multiple regulatory proposals, including directive 2016/2341* to require "integration of ESG risks" under delegated acts.

**Proposed legislation*

The changing regulatory environment

ERISA guidance

- **USDOL Interpretive Bulletin 2015-01(29 CFR 2509.2015-01) Supplementary Information:**
  - "plan fiduciaries should appropriately consider factors that potentially influence risk and return. **Environmental, social, and governance issues may have a direct relationship to the economic value of the plan's investment. In these instances, such issues are not merely collateral considerations or tie-breakers, but rather are proper components of the fiduciary's primary analysis of the economic merits of competing investment choices**."
  - "As in selecting investments, in selecting investment managers, the plan fiduciaries must reasonably conclude that the investment manager's practices in selecting investments are consistent with the principles articulated in this guidance."

Fiduciary Duty in the 21st Century

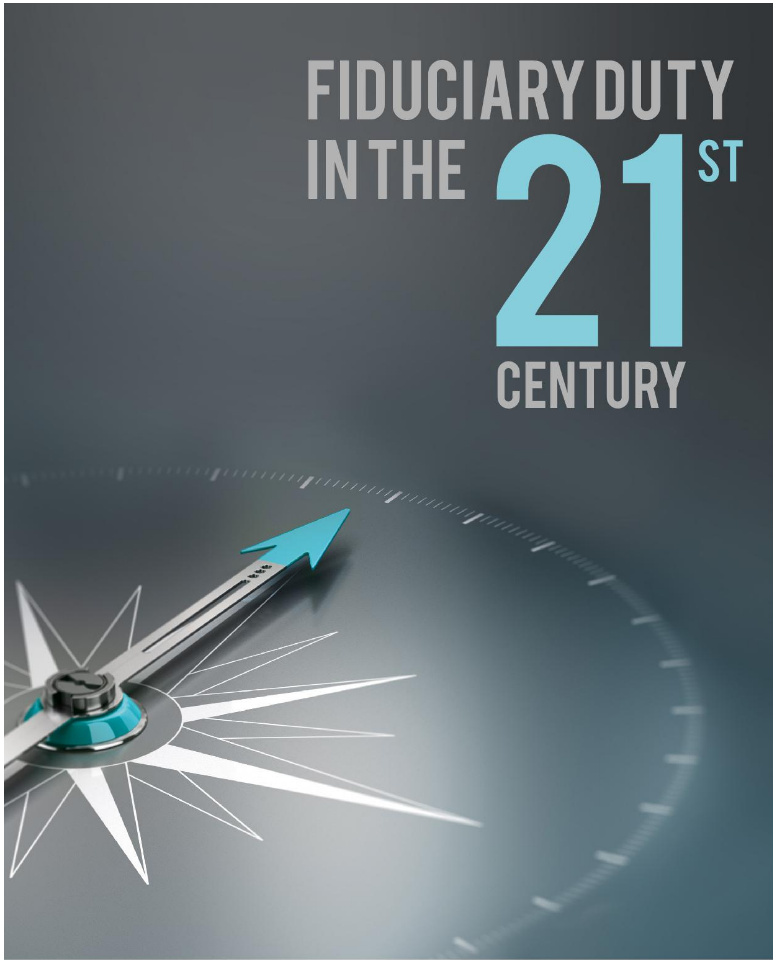
"Failing to consider long-term investment value drivers, which include environmental, social and governance issues, in investment practice is a failure of fiduciary duty."

United Nations Global Compact

UNEP FINANCE INITIATIVE

PRI Principles for Responsible Investment

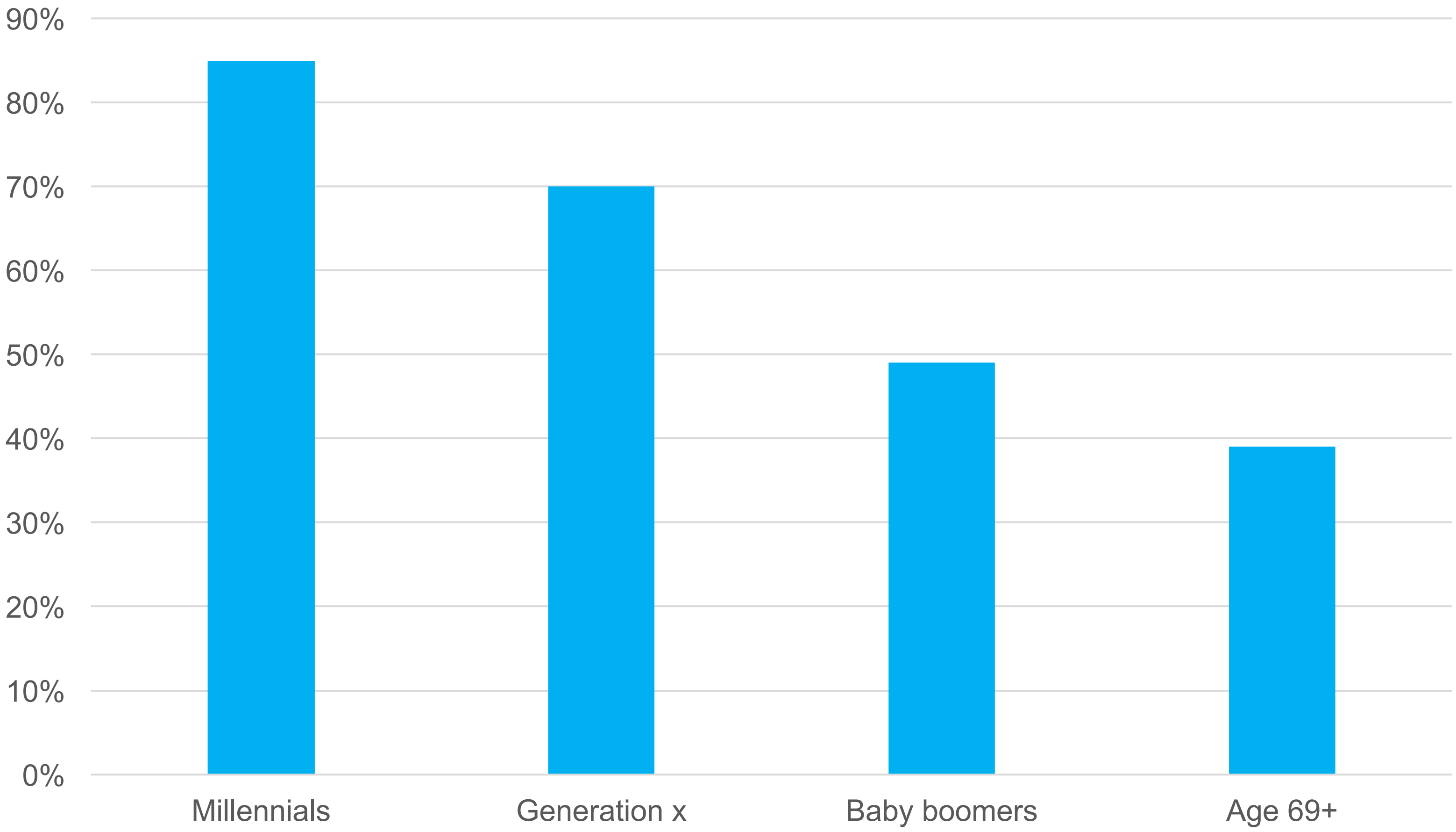
Inquiry: Design of a Sustainable Financial System



FIDUCIARY DUTY
IN THE 21ST
CENTURY

Beneficiary and other stakeholder interests

Are ESG issues important to investments?



Source: U.S. Trust (2015): Insights on Wealth and Worth Survey

Contents

The PRI

Investor-led, supported by the United Nations

The PRI works with its international network of signatories to put the six Principles for Responsible Investment into practice. Its goals are to understand the investment implications of environmental, social and governance issues and to support signatories in integrating these issues into investment and ownership decisions.

The six Principles were **developed by investors** and are supported by the UN. They have more than 2,100 signatories from over 50 countries representing over US$82 trillion of assets.

2

UN PARTNERS:

UNEP FINANCE INITIATIVE
UN GLOBAL COMPACT

2100+

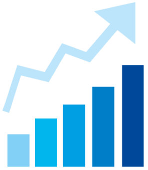
SIGNATORIES:

ASSET OWNERS
INVESTMENT MANAGERS
SERVICE PROVIDERS

82

US$ trn

ASSETS UNDER MANAGEMENT



One mission – Six principles

The mission

"We believe that an economically efficient, sustainable global financial system is a necessity for long-term value creation. Such a system will reward long-term, responsible investment and benefit the environment and society as a whole.

The PRI will work to achieve this sustainable global financial system by encouraging adoption of the Principles and collaboration on their implementation; by fostering good governance, integrity and accountability; and by addressing obstacles to a sustainable financial system that lie within market practices, structures and regulation."

1 **We will incorporate ESG issues into investment analysis and decision-making processes.**

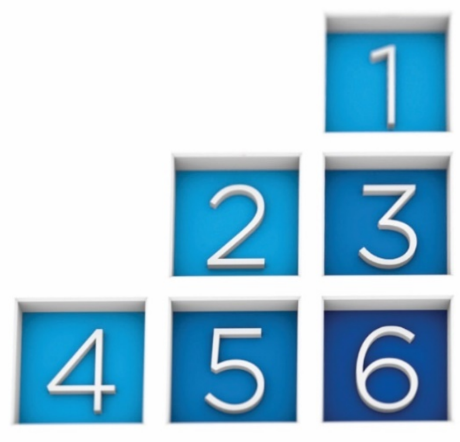
2 **We will be active owners and incorporate ESG issues into our ownership policies and practices.**

3 **We will seek appropriate disclosure on ESG issues by the entities in which we invest.**

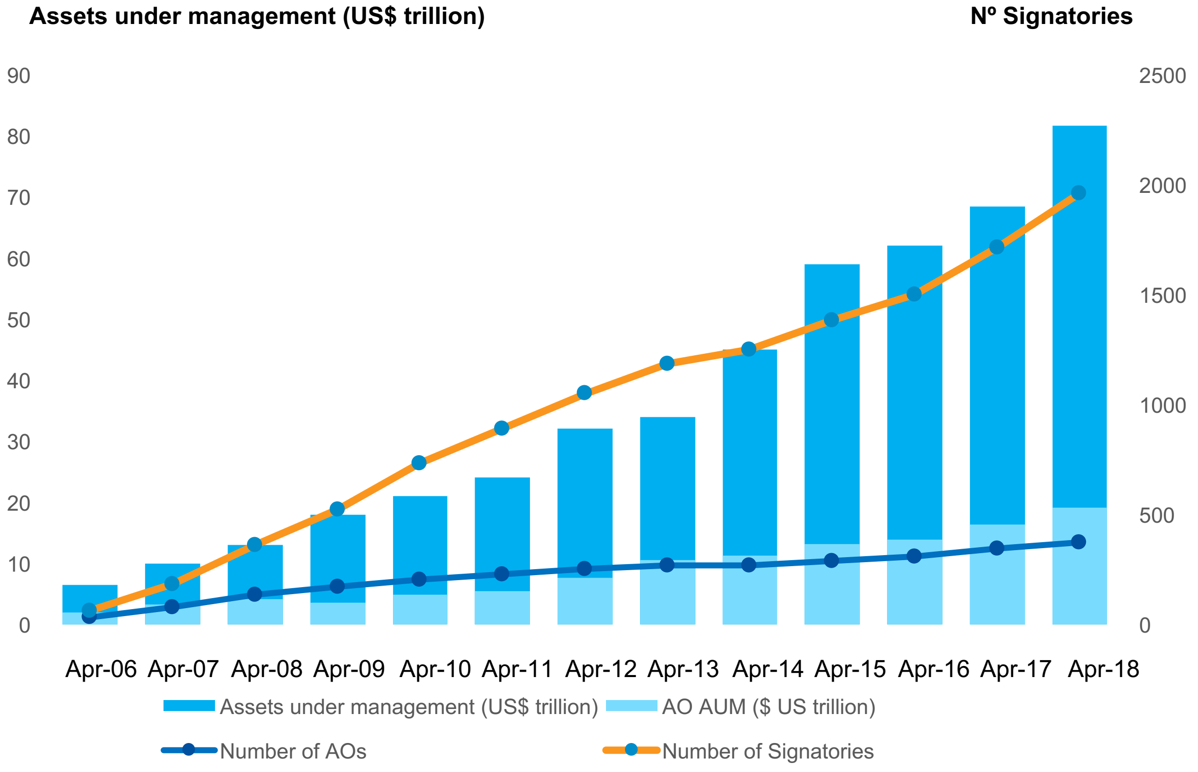
4 **We will promote acceptance and implementation of the Principles within the investment industry.**

5 **We will work together to enhance our effectiveness in implementing the Principles.**

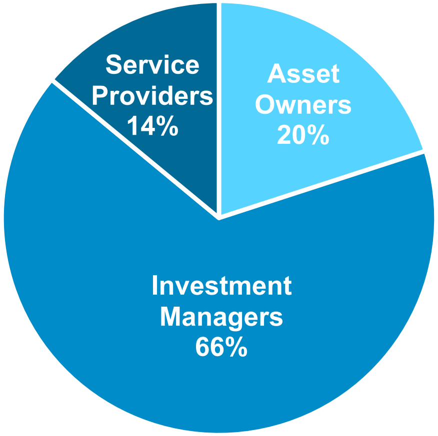
6 **We will each report on our activities and progress towards implementing the Principles.**



Growth in signatory base

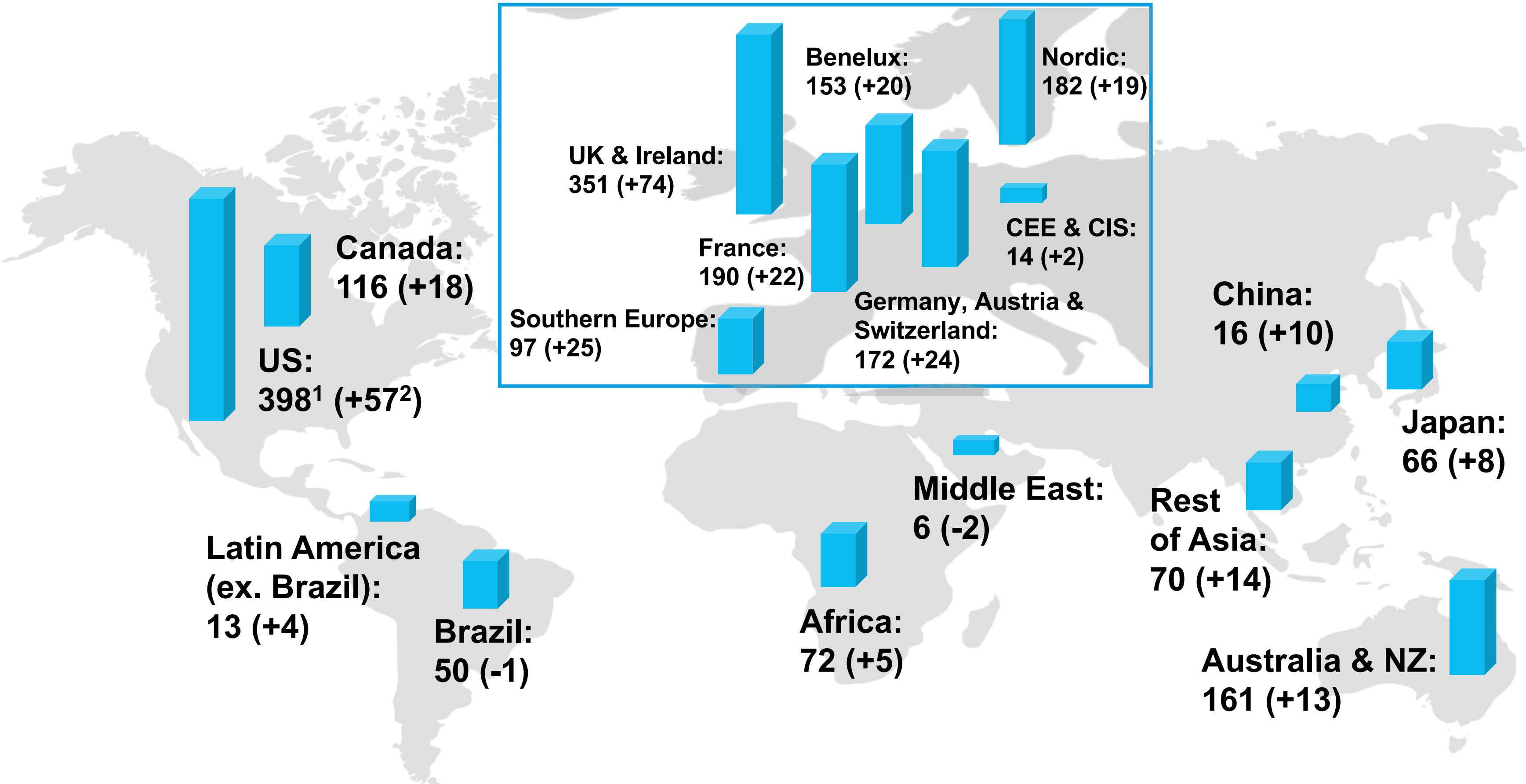


Three types of signatories:



More than 2,000 investors worldwide

Have adopted the Principles for Responsible Investment



1: As of 1 October 2018

2: Net new signatories over past 12 months

PRI in the US

398 Signatories

44 Asset Owners

306 Investment Managers

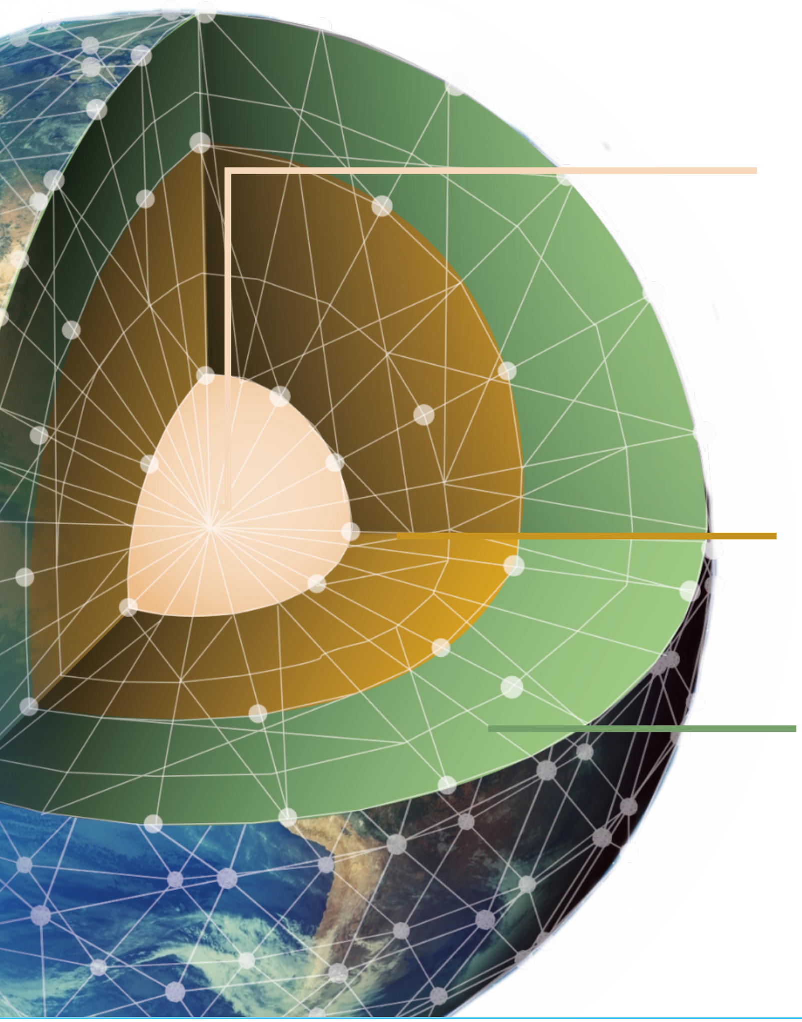
48 Service Providers

US Asset Owner Signatories

Signatory Name	State
Humboldt State University Advancement Foundation	CA
Los Angeles County Employees Retirement Association	CA
The Skoll Foundation	CA
San Francisco Employees Retirement System	CA
Sierra Club Foundation	CA
Loyola Marymount University	CA
California Public Employees' Retirement System CalPERS	CA
California State Teachers' Retirement System CalSTRS	CA
University of California	CA
Connecticut Retirement Plans and Trust Funds (CRPTF)	CT
UFCW International Union Pension Plan for Employees	DC
World Resources Institute	DC
World Bank Group Retirement Benefit Plans	DC
SEIU Pension Plans Master Trust	DC
International Finance Corporation (IFC)	DC
AFL-CIO Reserve Fund	DC
United Nations Foundation	DC
Employees' Retirement System of the State of Hawaii	HI
Northwestern University	IL
Wespath Investment Management (General Board of Pension and Health Benefits of the United Methodist Church)	IL
Office of the Illinois State Treasurer	IL
City of Chicago (City Treasurer's Office)	IL

Signatory Name	State
Presbyterian Church U.S.A. Foundation	IN
Unitarian Universalist Common Endowment Fund, LLC	MA
Middletown Works Hourly and Salaried Union Retirees Health Care Fund	MA
Harvard University Endowment	MA
The University of Maryland Foundation, Inc	MD
Maryland State Retirement and Pension System	MD
UAW Retiree Medical Benefits Trust	MI
Mercy	MO
Mercy Investment Services, Inc.	MO
University of New Hampshire Foundation	NH
New York State Local Retirement System	NY
Teachers' Retirement System of the City of New York	NY
New York City Employees Retirement System	NY
United Nations Joint Staff Pension Fund	NY
Nathan Cummings Foundation	NY
The Pension Board-UCC, Inc.	NY
Rockefeller Brothers Fund	NY
United Church Funds	NY
Treehouse Investments, LLC	NY
Bloomberg LP Retirement Plans	NY
The Episcopal Diocese of New York - Diocesan Investment Trust	NY
Seattle City Employees' Retirement System (SCERS)	WA

The Blueprint vision



Responsible investors

- Empower asset owners
- Support investors incorporating ESG issues
- Create an industry of active owners
- Showcase leadership and increase accountability
- Convene and educate responsible investors

Sustainable markets

- Challenge barriers to a sustainable financial system
- Drive meaningful data throughout markets

A prosperous world for all

- Champion climate action
- Enable real-world impact aligned with the SDGs

PRI teams and resources

YOUR AIM	**Integrate the Principles into your investment process**	**Join forces with your peers to engage investees**	**Challenge barriers to ESG integration**	**Measure and communicate progress**	**Stay in touch with the PRI and your peers**	**Network and exchange best practices**	**Keep up with insights, evidence and best practice**
PRI TEAMS	**Investment Practices**	**ESG Engagements**	**Policy**	**Reporting & Assessment**	**Global Networks & Outreach**	**Events**	**Academic Research**
PRI SERVICES	Asset class specific support	Collaboration Platform and research on topical ESG issues	Creating a supportive framework for RI	Strengthening ESG capacity and evaluating progress	Active, regional PRI-client relationship	PRI in Person and local events	Academic network and research led events

PRI value proposition

Understanding ESG risks, improving returns and creating long-term value

Why responsible investment?

Responsible investment (RI) aims to incorporate ESG factors into investment decisions, to better manage risk and generate sustainable, long-term returns. Demand from beneficiaries and investors is growing, the pace of RI regulation is increasing, and reputational risks are becoming ever more severe. Research from academics and the private and public sector is increasingly showing the materiality of ESG factors for investors.

Why become a PRI signatory?

Join a leading global network of over 2,000 signatories who are working to incorporate ESG factors into investment decisions and ownership practices. Signing the internationally-recognised Principles for Responsible Investment allows your organisation to publicly demonstrate its commitment to responsible investment.

What do signatories receive?

Signatory relationship management

Get in touch with the PRI network manager dedicated to serving signatories in your market. Our local and regionally-based network manager teams help direct signatories to PRI resources and activities, based on your needs and interests, and they speak your language!

Tools & guidance

Benefit from a variety of useful policy and practice guidelines, toolkits and case studies specific to your asset classes and your direct/indirect investments, as well as research on key ESG issues and important regulatory developments.

Reporting & Assessment

Utilise PRI's annual reporting framework, which represents the largest global reporting tool and database on responsible investment.

As a PRI signatory, you can benefit from the modular format of the framework and the feedback on your progress (via assessment reports) over time and relative to your peers.

Collaboration

Share experiences, knowledge and resources with companies, policy makers, academics, and over 2,000 fellow investors and service providers, via the PRI's Collaboration Platform. Participate in events and workshops with other signatories in your local region.

Education

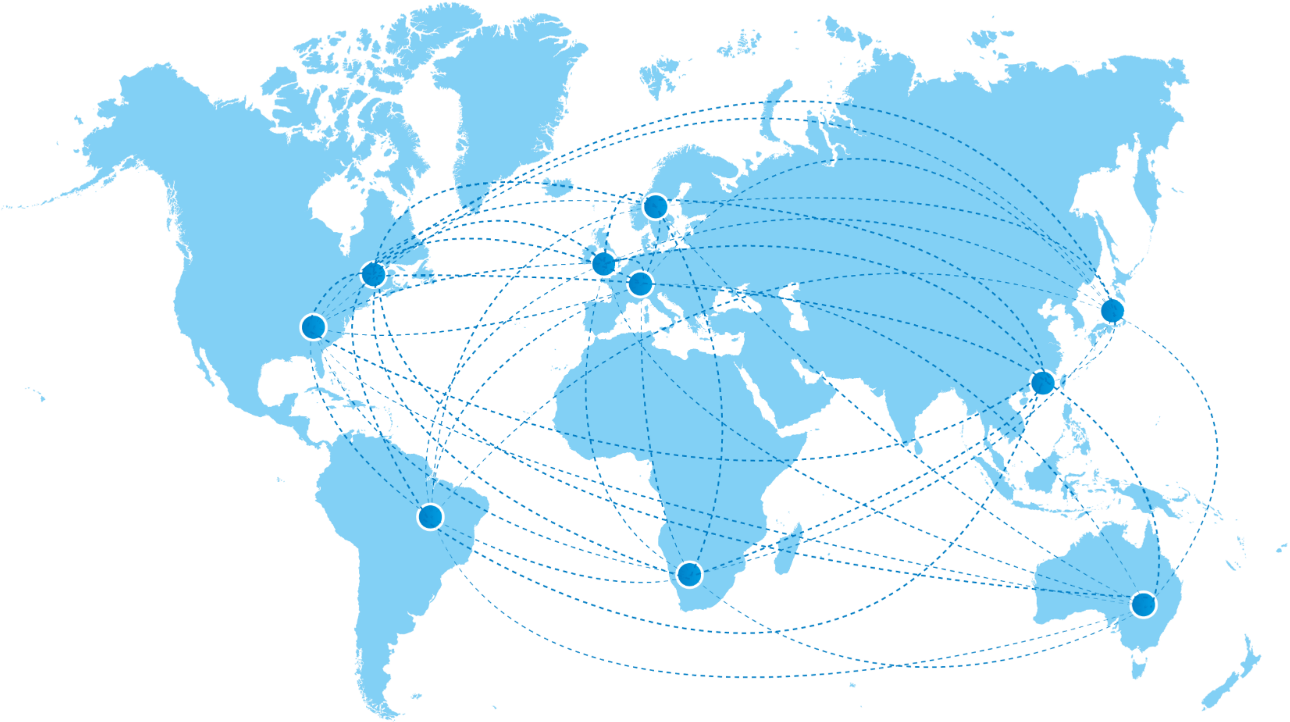
Access key findings from academic research and collaborate with academics through the PRI's Academic Network. Educate your staff with preferential access to PRI Academy, the world's leading responsible investment online training course.

Data Portal

Obtain information on other signatories via the Data Portal, a web-based platform that allows you to access publicly-disclosed PRI "transparency reports", to request private reports from other signatories, to export responses (including assessment scores) and to explore the distribution of scores for specific peer groups.

Signatory Relations

Address local challenges in all markets where you invest



Key functions:

- Provide active PRI-signatory relationship
- Recruit and on-board new signatories
- Bring global ESG perspectives into local markets

Local offices

- AMERICAS
  - *Brazil (Rio de Janeiro)*
  - *Canada (Toronto, Montreal)*
  - *US (New York, San Francisco)*
- EMEA
  - *France (Paris)*
  - *Germany (Cologne, Munich)*
  - *Netherlands (The Hague)*
  - *South Africa (Cape Town)*
  - *UK (London)*
- ASIA-PACIFIC
  - *Australia (Melbourne)*
  - *Hong Kong*
  - *Japan (Tokyo)*

Investment Practices

Integrate the principles into your investment process

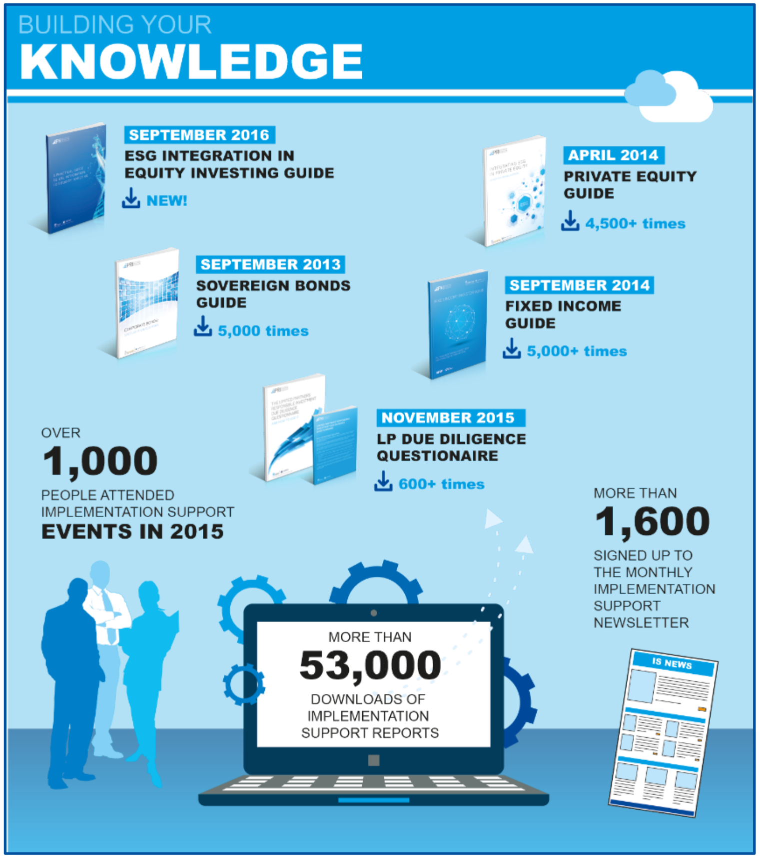
The Investment Practices team provides signatories practical tools to help them implement the Principles across all asset classes.

Work areas

- Listed equity
- Fixed income
    - Sovereign and corporate
    - Credit ratings
    - Infrastructure
- Asset owner insight
    - Investment strategy
    - Investment policy
    - Selecting, appointing and monitoring managers
    - Passive investments
- Alternative and themed
    - Private equity
    - Hedge funds
    - Property
    - Environmental and social themed

Tools

- Guidance documents
- Case studies
- Discussion papers
- Webinars
- Events
- One-to-one discussion
- Working groups and committees
- Peer learning
- Newsletters
- Outreach Projects



Policy

Challenge regulatory barriers and promote supportive policy

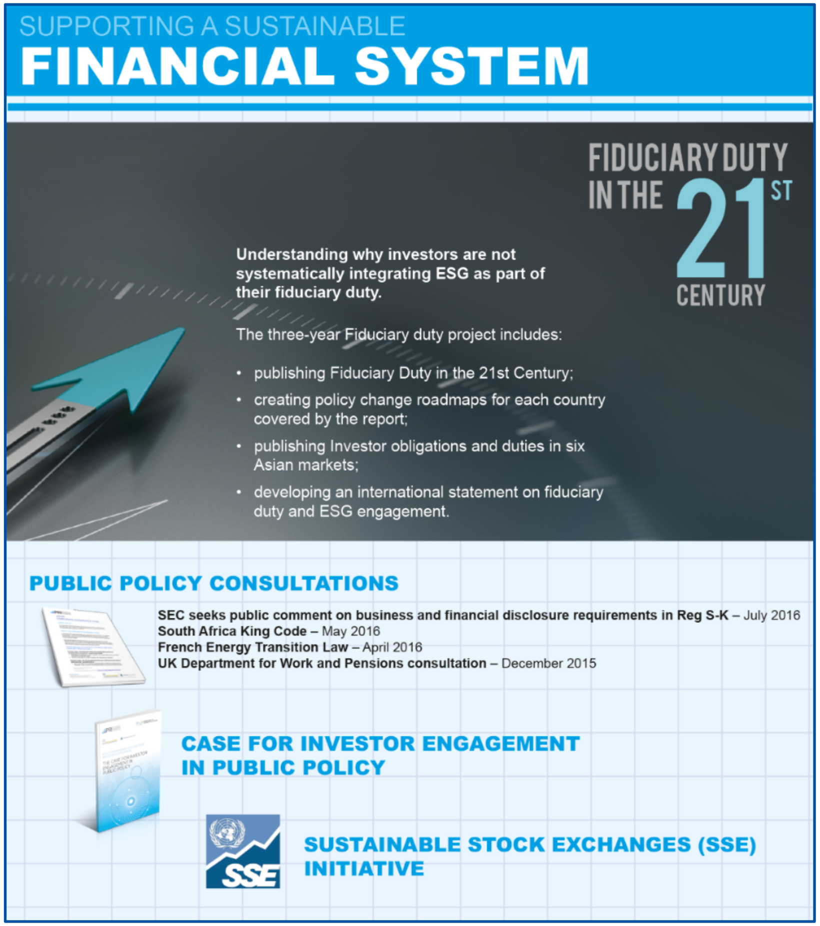
> *"The long-term financial consequences of many critical policy issues are just too significant to ignore: engagement is a tool for risk management."*

Jane Ambachtsheer, Partner, Mercer Investments

Policy sets the rules of the game. It critically affects investors' ability to generate sustainable returns and create value.

The PRI's policy service:

- works to improve the sustainability of the financial system and address systemic market risks through policy change, research and investor education;
- works alongside other organisations, including the **OECD**, **European Commission** and **UNEP FI** to maximise its impact for signatories;
- integrates the Sustainable Development Goals into the PRI's work with signatories.



SUPPORTING A SUSTAINABLE

FINANCIAL SYSTEM

FIDUCIARY DUTY IN THE 21ST CENTURY

Understanding why investors are not systematically integrating ESG as part of their fiduciary duty.

The three-year Fiduciary duty project includes:

- publishing Fiduciary Duty in the 21st Century;
- creating policy change roadmaps for each country covered by the report;
- publishing Investor obligations and duties in six Asian markets;
- developing an international statement on fiduciary duty and ESG engagement.

PUBLIC POLICY CONSULTATIONS

SEC seeks public comment on business and financial disclosure requirements in Reg S-K – July 2016
South Africa King Code – May 2016
French Energy Transition Law – April 2016
UK Department for Work and Pensions consultation – December 2015

CASE FOR INVESTOR ENGAGEMENT IN PUBLIC POLICY

SUSTAINABLE STOCK EXCHANGES (SSE) INITIATIVE

ESG Engagements

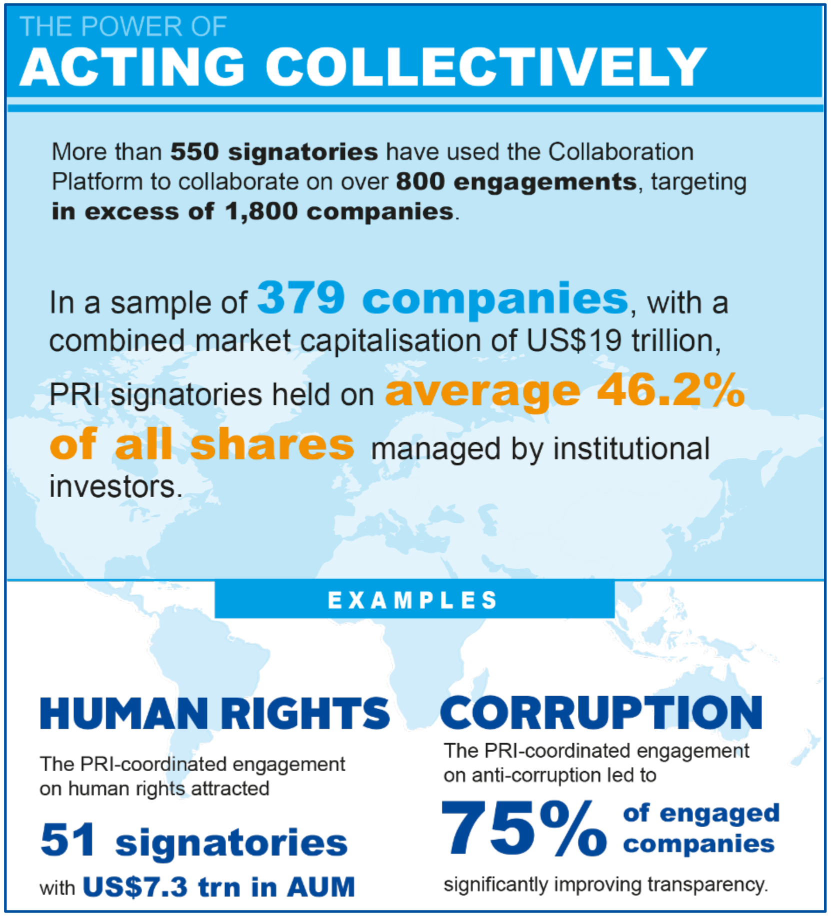
Join forces with your peers to engage investee companies

- The **PRI Collaboration Platform:** Create your own engagement or initiative and use webinar-hosting software and a confidential online workspace to work with peers.

- **PRI-coordinated engagements** bring together groups of signatories across asset classes to engage with investee companies from different sectors and regions in order to reduce risk and better manage ESG issues, such as:

Environmental	Social	Governance
Water risks Climate lobbying Carbon disclosure	Labour standards Human rights	Anti-corruption Director nominations Cyber security Corporate Tax

- **Research reports and engagement guidance:**
  - *From poor working conditions to forced labour: What's hidden in your portfolio?*
  - *Engagement guidance on corporate tax responsibility*
  - *Water risks in agricultural supply chains*



THE POWER OF
ACTING COLLECTIVELY

More than **550 signatories** have used the Collaboration Platform to collaborate on over **800 engagements**, targeting **in excess of 1,800 companies**.

In a sample of **379 companies**, with a combined market capitalisation of US$19 trillion, PRI signatories held on **average 46.2% of all shares** managed by institutional investors.

EXAMPLES

HUMAN RIGHTS

The PRI-coordinated engagement on human rights attracted

51 signatories

with **US$7.3 trn in AUM**

CORRUPTION

The PRI-coordinated engagement on anti-corruption led to

75% of engaged companies

significantly improving transparency.

PRI Academy

Educate staff on ESG issues

The gold standard for ESG training

The PRI Academy was developed to provide industry leading training on how ESG issues are impacting company performance, shareholder value and investment decision making. Since founded in 2014, the Academy has become the global leader in responsible investment training having enrolled over 4,000 professionals from over 65 countries.

Courses feature content from international experts, real and hypothetical case studies and financial modelling. Every course is delivered entirely online.

> “This PRI course should become the standardised norm in the wealth management industry. A perfect introduction to responsible investing for all, concise and informative. ESG integration is not only beneficial for client’s long-term investments, but I believe it will eventually become a regulatory requirement.”
>
> **HSBC, United Kingdom**

PRI ACADEMY

Courses

The PRI Academy offers four courses:

- **RI Fundamentals**
- **RI Essentials**
- **Enhanced Financial Analysis**
- **SRI for Trustees**

The training is completely web-based, which means you can start and finish when and where you please, as long as you have access to the internet: no travel, no pressure, lower greenhouse gas emissions.

Available for CFA Institute CE Credits.
Available for CFP Board CE Credits (USA Only)

HOW TO ENROL

To enrol please visit our website at www.priacademy.org

For group enrolments please email us at priacademy@unpri.org

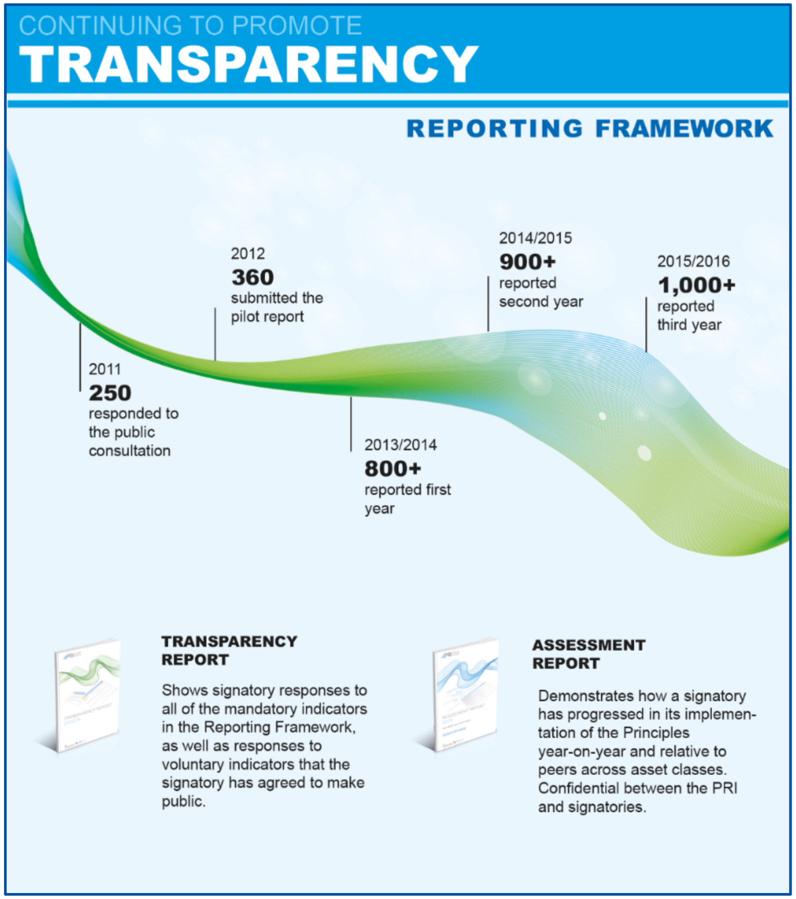
Reporting & Assessment

Measure progress against your targets and your peers

The Reporting Framework was launched in October 2013 to **ensure accountability** of the PRI and the work of its signatories, to **encourage transparency** from signatories on responsible investment and to **foster continued learning and development** through annual assessment.

Key details:

- The largest global reporting project on responsible investment
- Developed with signatories, for signatories: 1,000+ signatories reported in 2016
- Robust and practical disclosure requirements
- Intuitive, efficient and customised online tool to simplify data submission
- More than 80,000 downloads of PRI Transparency Reports per year
- Assessment results are yours to use as you wish: share to demonstrate performance against peers, or keep in-house as an internal learning and development tool



CONTINUING TO PROMOTE

TRANSPARENCY

REPORTING FRAMEWORK

2011
250
responded to the public consultation

2012
360
submitted the pilot report

2013/2014
800+
reported first year

2014/2015
900+
reported second year

2015/2016
1,000+
reported third year

TRANSPARENCY REPORT

Shows signatory responses to all of the mandatory indicators in the Reporting Framework, as well as responses to voluntary indicators that the signatory has agreed to make public.

ASSESSMENT REPORT

Demonstrates how a signatory has progressed in its implementation of the Principles year-on-year and relative to peers across asset classes. Confidential between the PRI and signatories.

Reporting & Assessment

Measure progress against your targets and your peers

Benefits for signatories

- **Evaluates progress** against industry-standard framework (some signatories are beginning to audit their responses) and to benchmark performance against peers’
- **Strengthens internal procedures** and builds ESG capacity
- **Delivers ongoing PRI feedback** and tools for improvement
- **Presents the big picture** – the dataset and Reports on Progress are a huge resource for best practice
- **Summarises your RI activities** – valuable for engaging with internal staff, clients, shareholders and regulators

“The reporting has been an informative exercise that has indicated just how much we can improve our engagement and activities. The questions will form the basis on which we seek to enhance our activity.”

London Borough of Haringey Pensions Committee, UK

“The PRI reporting framework has been a useful tool in understanding how our responsible investment practices are being perceived by the market.”

Itaú Asset Management, Brazil

“We regard the reporting as a significant ESG implementation process for identifying future improvement and reviewing our activities for the next year."

Nissay Asset Management Corporation, Japan

“*I had budgeted several weeks to complete it and found it took far less time. I really like the way the modules flow and felt as if I always had this big picture visibility of where I'd been, where I was, and where I needed to go.”*

California State Teachers' Retirement System, US

Contents

Who can sign the six principles

Asset Owners

Organisations that represent the holders of long-term retirement savings, insurance and other assets. Examples include pension funds, sovereign wealth funds, foundations, endowments, insurance and reinsurance companies and other financial institutions that manage deposits.

Investment Managers

Organisations that manage assets as a third-party, serving an institutional and/or retail market. Investment managers that are still raising funds, rather than actively managing assets, can sign pre-emptively as *provisional* signatories.

Service Providers

Organisations that offer products or services to asset owners and/or investment managers. Although such companies are not stewards or managers of assets in their own right, they do have considerable influence over how their clients address ESG issues. For this group, becoming a signatory is a commitment to providing, developing and promoting services that support clients' implementation of the Principles.

How to become a PRI signatory

In four steps

1 **Confirm your organisation’s approval of the Principles by submitting the declaration on your company’s letterhead, signed by your CEO (or equivalent)**

Declaration forms can be downloaded here

2 **Provide your company details, contact information and reasons for signing in the application form**

Application forms can be downloaded here

3 **Provide an organisation chart, showing the structure of your organisation including all its legal entities**

Send all of the above information to info@unpri.org

4 **Once provisionally approved we will send you an invoice, upon payment of which your application will be fully approved***

**The PRI aims to process applications within two weeks. The invoice will cover the period until the start of the next fee year (1 April). Upon payment, the PRI will contact you to welcome you and introduce you to all of the resources at your disposal.*

Signatory requirements

What is required to be a PRI signatory

Reporting & Assessment

Signatories report annually on their ESG implementation by asset class through the PRI Reporting Framework. This ensures:

- Accountability of the PRI and its signatories;
- Standardisation and transparency for signatory reporting;
- Signatories receive feedback from which to learn and develop.

Accountability Measures

As of 2018, the PRI is implementing minimum requirements for existing and future asset owner and investment manager signatories. Failure to meet these requirements within two years, following extensive engagement with the PRI, will result in delisting.

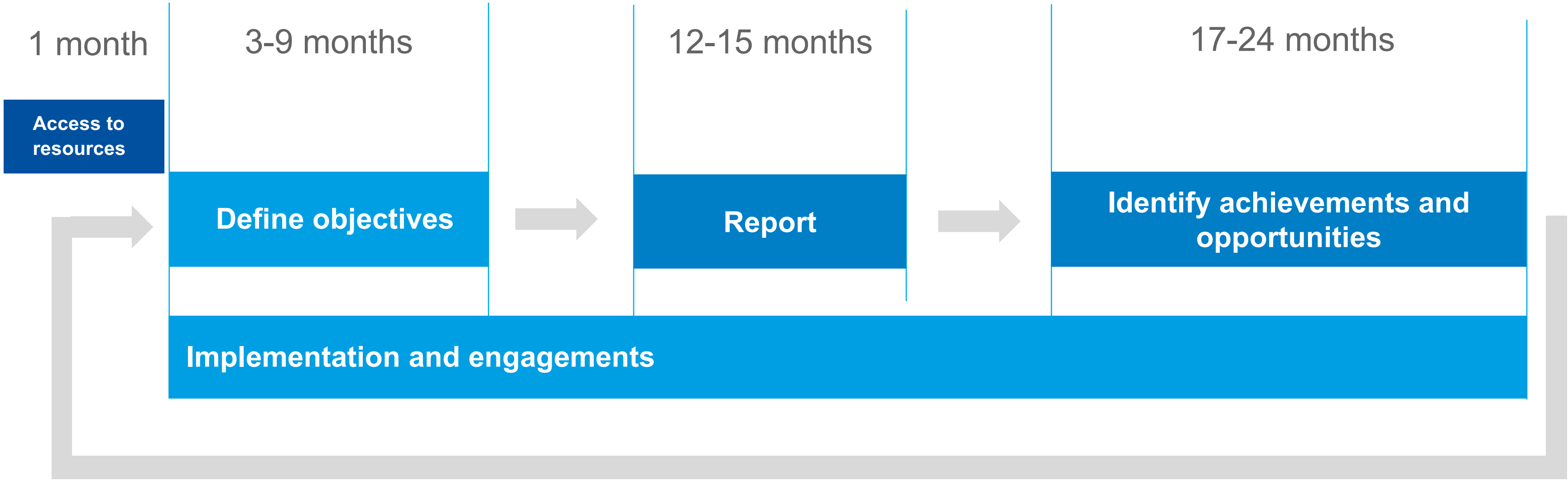
The three requirements are:

- Investment policy that covers the firm’s responsible investment approach, covering >50% of AUM
- Internal/external staff responsible for implementing RI policy
- Senior-level commitment and accountability mechanisms for RI implementation

Signatories that do not meet the three criteria will be informed privately and delisting will only be as a last resort following unsuccessful engagement over the two-year period.

Signatory roadmap

Signing the principles



1 month

3-9 months

12-15 months

17-24 months

Access to resources

Define objectives

Report

Identify achievements and opportunities

Implementation and engagements

The timeframe for reporting will depend on when an organisation signs the Principles. New signatories will always have one full reporting cycle during which it is voluntary to report. The PRI encourages signatories to report in their first year and use this process as a learning experience.

Reporting process

1st time reporting

DATA COLLECTION (80-85%)

- Defining your asset mix – is it consistent with the PRI framework?

INTERNALLY MANAGED ASSETS

- Organisation wide readiness for RI reporting
- Size of organisation
- Consistency of approach across asset classes
- Data collection infrastructure: internal collection/sharing process, use of service provider data etc.
- Where responsibility for data collection sits: with ESG specialist, with PMs etc.
- Existing data collection processes
- Data sharing approval process

EXTERNALLY MANAGED ASSETS

- Number of asset managers/asset consultants employed
- Consistency of approach across asset classes and consistency of data collection processes
- How the data is relayed to asset owner and the consistency of format

REPORTING (15-20%)

- If all information is collected, reporting on one asset class (either external or internal) can take 1 hour
- Anecdotally, once all information is collected, completing the reporting framework (all modules) can take 3 days

2nd year onwards

- Prefilling functionality tends to make the workload a lot lighter – depending on changes. Around 70-90% of answers can be prefilled going into second year reporting
- How much of the investment process has changed? If very little, data collection and reporting likely to take less time
- Are last year’s policies still in place?
- Change in staff responsible for completing reporting framework?
- If little has changed, can take from a few hours to 1 day to completed second year reporting (depending on the number of asset classes reported on)

How much does it cost to be a signatory?

2018/19 fees

The annual signatory fee is payable in April and is scaled according to each signatory's category, type and assets under management.

ASSET OWNERS

AUM (US$ bn)	2018/19 fee (£)
>10	8,440
5 - 9.99	6,400
1 – 4.99	2,950
0.1 – 0.99	840
0 – 0.09	460

INVESTMENT MANAGERS

AUM (US$ bn)	2018/19 fee (£)
>50	13,670
30-50	12,020
10 - 29.99	10,930
5 - 9.99	7,650
1 – 4.99	4,370
0.1 – 0.99	1,650
0 – 0.09	1,090

SERVICE PROVIDERS

Employees	2018/19 fee (£)
>200	8,440
51-200	6,400
26-50	2,950
11-25	840
<10	460

**Asset owners headquartered in a country classified by the IMF as an emerging market or developing economy are entitled to apply for a fee discount. Please refer to the IMF's World Economic Outlook 2016 (Statistical Appendix, p.209) for a full list of eligible countries.*

Your dedicated PRI team

Supported by 90+ professionals

NAME: Chris Fowle
TITLE: Head of Americas, Global Networks & Outreach

Email: chris.fowle@unpri.org

NAME: Carol Jeppesen
TITLE: Senior US Network Manager, Global Networks & Outreach

Email: carol.jeppesen@unpri.org

NAME: Ophir Bruck
TITLE: US Network Manager, Global Networks & Outreach

Email: ophir.bruck@unpri.org

NAME: Saumya Mehrotra
TITLE: Associate, Global Networks & Outreach

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MEET THE EXECUTIVE TEAM

Fiona Reynolds
Managing Director

Kris Douma
Director, Investment Practices and Engagements

Nathan Fabian
Director, Policy and Research

Mandy Kirby
Director, Reporting, Assessment and Accountability

Lorenzo Saa
Director, Global Networks and Outreach

Graeme Griffiths
Director, Global Networks and Outreach

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

Report to Board of Administration

From: Audit Committee
Elizabeth Lee, Chairperson
Michael R. Wilkinson
Sung Won Sohn

Agenda of: **NOVEMBER 13, 2018**

ITEM: **VIII - A**

SUBJECT: **AUDIT COMMITTEE AND INTERNAL AUDIT CHARTER UPDATES AND POSSIBLE BOARD ACTION**

Recommendation:

That the Board approve the proposed changes to Internal Audit Charter (Attachment 1); and reaffirm the current Audit Committee Charter (Attachment 5).

Discussion:

On October 23rd, 2018, the Audit Committee considered staff's recommended changes to the Internal Audit Charter. Committee members provided feedback, requested minor changes and approved the updates. Staff is not recommending any changes to the Audit Committee Charter at this time. The Committee recommends Board's approval of these charters.

Internal Audit Charter

The International Standards for the Professional Practice of Internal Auditing (IIA Standards) require that the purpose, authority and responsibility of an internal audit function be formally defined in an internal audit charter, and approved by the organization's board.

On November 12, 2013, the Board adopted the initial Internal Audit and Audit Committee charters. The charters were developed to closely align with professional auditing standards and model charters issued by the Association of Public Pension Fund Auditors (APPFA). LACERS' Internal Audit Charter institutionalizes the internal audit function within LACERS, including the nature of its reporting relationship to the Board; define the scope of internal audit activities; and authorize access to records, personnel, and physical properties relevant to the performance of audit engagements.

As part of Internal Audit's periodic review of the charters, staff noted that, in March 2017, the Institute of Internal Auditors issued a "Supplemental Guidance / Model Internal Audit Activity Charter" (Attachment 4) to illustrate common practices typically set out in an internal audit activity charter. Based on a review of this guide, staff proposes changes to Internal Audit's mission, scope and standards of professional practice, as indicated in Attachment 1. A clean version of the charter incorporating the proposed changes is also attached (Attachment 2). The proposed changes would make these sections of the Internal Audit Charter consistent with the new language in the supplemental guidance.

Audit Committee Charter

The Audit Committee assists the Board in fulfilling its fiduciary oversight responsibility to members and other stakeholders relating to LACERS' financial statements, and the legal compliance, ethics programs and other related risks, as established by the Board. Much like the internal audit charter, the Audit Committee Charter (Attachment 5) was developed to align them with IIA standards and APPFA's "Model Audit Committee Charter" (Attachment 6). Staff has reviewed the current Audit Committee Charter and determined that no new changes are needed at this time. Staff is requesting that the Board reaffirm the current Audit Committee Charter.

Strategic Impact Statement

Internal Audit and Audit Committee assist the Board in meeting its Governance Goal to "uphold good governance practices which affirm transparency, accountability and fiduciary duty," by providing an independent and objective assessment of the effectiveness of risk management, internal control, and governance processes.

This report was prepared by Rahoof "Wally" Oyewole, Departmental Audit Manager, Internal Audit Section.

RO

Attachments:
1) Proposed LACERS Internal Audit Charter (Redline Version)
2) Proposed LACERS Internal Audit Charter (Clean Version)
3) APPFA Model Internal Audit Department Charter
4) IIA Supplemental Guidance – Model Internal Audit Activity Charter Issued March 2017
5) LACERS' Current Audit Committee Charter – No Changes Proposed
6) APPFA Model Audit Committee Charter

Attachment 1

Section 3.0 DUTIES AND RESPONSIBILITIES

Internal Audit Charter

Adopted by the Board: November 12, 2013; Revised: November 13, 2018

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I. PURPOSE

The purpose of this Charter is to formally define LACERS' internal audit function's purpose, authority, and responsibility. The internal audit charter establishes the internal audit function's position within LACERS including the nature of the Departmental Audit Manager's (or DAM) functional reporting relationship with the Board; authorizes access to records, personnel, and physical properties relevant to the performance of engagements; and defines the scope of internal audit activities. This Charter shall be reviewed annually and updated as necessary.

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II. MISSION

The Mission of the Internal Audit Section is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight. ~~provide independent, objective assurance, and consulting services designed to add value and improve LACERS' operations.~~ Internal Audit helps ~~It is to assist~~ LACERS ~~in~~ accomplish~~ing~~ its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of governance, risk management, and ~~internal~~ control ~~, and governance~~ processes.~~ by:~~

- ~~Providing a wide range of quality, independent internal auditing services for the Executive Management and the Board, and consulting services for management;~~
- ~~Performing independent assessments of the risk management systems, internal controls, and operating efficiency, guided by professional standards and using innovative approaches;~~
- ~~Supporting LACERS' efforts to achieve its objectives through independent auditing and consulting services; and~~
- ~~Maintaining a dynamic, team-oriented environment that encourages personal and professional growth, and challenges and rewards internal audit staff for reaching full potential and excelling.~~

Commented [OR1]: Mission revised to be consistent with Supplemental Guidance Model Internal Audit Activity Charter issued by the Institute of Internal Auditor (IIA) in March 2017.

III. OBJECTIVES AND SCOPE

Assurance Objectives: The objectives of the Internal Audit Section's assurance services are to provide independent assurance to the Board, the Audit Committee, and LACERS' Executive Management that LACERS' assets are safeguarded, operating efficiency is enhanced, and compliance is maintained within prescribed laws, Board Rules, and management policies. Assurance objectives include independent assessment of LACERS' governance, risk management, and control processes.

Consulting Objectives: The objectives of the Internal Audit Section's consulting services, the nature and scope of which are agreed with management, are to provide management with assessments and advice for improving LACERS' governance, risk management and control without the Internal Audit Section assuming management responsibility. For example, consulting services may provide assessments and advice on the front-end projects so that risks can be identified, managed, and internal controls can be designed.

Section 3.0 DUTIES AND RESPONSIBILITIES

Scope: The scope of internal audit activities encompasses, but is not limited to, objective examinations of evidence for the purpose of providing independent assessments to the LACERS' Board, Audit Committee, management, and outside parties on the adequacy and effectiveness of governance, risk management, and control processes for LACERS. Internal audit assessments include evaluating whether:

Commented [OR2]: Language and specific components revised to be consistent with Supplemental Guidance Model Internal Audit Activity Charter issued by the Institute of Internal Auditor (IIA) in March 2017.

- Risks relating to the achievement of LACERS' strategic objectives are appropriately identified and managed;
- The actions of LACERS' officers, directors, employees, and contractors are in compliance with Board's policies, procedures, and applicable laws, regulations, and governance standards;
- The results of operations or programs are consistent with established goals and objectives;
- Operations or programs are being carried out effectively and efficiently;
- Established processes and systems enable compliance with the policies, procedures, laws, and regulations that could significantly impact Plan;
- Information and the means used to identify, measure, analyze, classify, and report such information are reliable and have integrity;
- Resources and assets are acquired economically, used efficiently, and protected adequately;

~~The scope of work of the Internal Audit Section is to determine whether LACERS' network of risk management, internal control, and governance processes, as designed and represented by management, is adequate and functioning in a manner to ensure:~~

~~Programs are operating within the highest fiduciary standards and are directed toward the requirements defined in Federal and State law, the Charter of the City of Los Angeles, the Administrative Code of the City of Los Angeles, Board Rules, and LACERS' policies and procedures;~~
~~Processes and practices are consistent with industry best practices, using the best public and private examples as benchmarks;~~
~~Significant legislative and regulatory issues impacting LACERS are recognized and addressed appropriately;~~
~~Operations and processes are consistent with established missions, objectives, and goals;~~
~~Operations and processes are being carried out as planned;~~
~~Existing policies are appropriate and updated;~~
~~Employee data is appropriately reported to LACERS;~~
~~Significant financial, managerial, and operating information is accurate, reliable, and timely;~~
~~Resources are acquired economically, used efficiently, and adequately protected;~~
~~Quality service and continuous improvement are fostered in LACERS control processes;~~
~~Contractors are meeting the objectives of the contracts, while in conformance with applicable laws, regulations, policies, procedures, and best practices; and~~

~~Specific programs, operations, and processes are review at the request of management or the Board.~~

Opportunities for improving member service, management of risks, internal control, governance, and the organization's effectiveness and image may be identified during audits. This information will be communicated to management and the Audit Committee as appropriate.

IV. AUTHORITY

~~This Charter establishes LACERS' internal audit function.~~ The Internal Audit Section reports functionally to the Board through its Audit Committee, and administratively to the General Manager. The Audit Committee advises on the appointment, replacement, or dismissal of the Departmental Audit Manager (DAM) in consultation with the General Manager as appointing authority.

Commented [OR3]: Internal Audit is now an established function within the Department

The DAM is responsible for managing the Internal Audit Section and preparing an audit plan. The Audit Committee reviews and recommends the approval of the annual audit plan to the Board. The DAM shall periodically inform the Audit Committee regarding the status of the audit plan and changes needed. The DAM is authorized to allocate internal audit resources, set project frequencies, select audit subjects, determine scopes of work, and apply the techniques necessary to accomplish the audit objectives. The DAM is authorized to hire (within budgetary constraints), retain, train, and develop internal audit staff to achieve the internal audit objectives as stated in this Charter.

The DAM and other Internal Audit staff are not authorized to perform operational duties for LACERS and/or its contractors. LACERS Internal Audit staff is not authorized to initiate or approve accounting transactions external to the Internal Audit Section. Internal Audit Section staff is not authorized to direct the activities of any LACERS employee not employed in the Internal Audit Section, except to the extent such employees have been assigned appropriately to auditing teams or to otherwise assist the internal auditors.

V. ACCESS

The Departmental Audit Manager and designated audit staff, as appropriate, are granted authority for full, free, and unrestricted access to all of LACERS' functions, records, files and information systems, personnel, contractors, physical properties, and any other item relevant to the function, process or unit under review. All LACERS' contracts with vendors shall contain language enabling the internal auditors, other auditors, and specialists to have access to relevant records and information. All LACERS employees are required to assist the staff of the Internal Audit Section in fulfilling its audit functions and fiduciary duties.

The DAM shall have free and unrestricted access to the Chairperson of the Audit Committee and Members, ~~and~~ the President, Vice President, and Members of the Board of Administration. The DAM shall also have free and unrestricted access to the General

Manager, other executive management, and all personnel, contractors and vendors, members, retirees, and beneficiaries of LACERS.

Staff of the Internal Audit Section shall handle documents and information given to them in the same prudent and confidential manner as by those employees normally accountable for them. The DAM shall ensure that the Internal Audit staff is instructed in the handling and safeguarding of confidential information.

VI. INDEPENDENCE

Organizational Placement: To provide for the independence for the Internal Audit Section, its personnel report to the Departmental Audit ~~A~~Manager, who in turn reports functionally to the Board and administratively to the General Manager. By reporting functionally to the Board, the DAM is able to maintain independence and objectivity in planning and executing internal audit activities. The Board supports internal audit's role by maintaining internal audit's independence, and by recognizing and promoting internal audit as a value-added activity.

Professional Standards Independence: The Audit Committee recognizes that professional independence requires that the auditors have knowledge of operations and appropriate expertise in the subject matter that is being audited. Therefore, the DAM will include as part of the reports to the Audit Committee, a regular report regarding internal audit personnel, including their qualifications, certifications, and development. The DAM shall periodically discuss standards of professional audit independence with the Audit Committee. The standards of independence used as benchmarks shall be those indicated in the Professional Standards section of this document.

Potential Impairment of Independence: The DAM should discuss any potential issues regarding impairment of independence and/or conflicts of interest and their mitigation(s) with the Audit Committee, as necessary. If objectivity is impaired in fact or in appearance, the details of the impairment should be disclosed to the General Manager and the Audit Committee. The nature of the disclosure will depend on the impairment. Each Internal Audit Section staff member (including the DAM) shall be required to annually certify to the Audit Committee that he/she has no actual or perceived conflicts of interest that would impair their objectivity or independence. The form for such certification is attached to this charter, and may be revised by the DAM with approval of the Audit Committee as needed.
~~t any time.~~

VII. RESPONSIBILITIES AND ACCOUNTABILITY

The Departmental Audit Manager is responsible for the following in order to meet the mission, objectives, and scope of this Charter and the Internal Audit Section:

1. Select, train, develop, and retain a competent Internal Audit staff who collectively have the abilities, knowledge, skills, experience, expertise, and professional certifications necessary to accomplish the mission, objectives, and scope of this Charter, subject to the General Manager's approval and budgetary considerations. Provide opportunity and

support for staff obtaining professional training, professional examinations, and professional certifications.

2. Establish polices for conducting and directing internal audit activities, and technical and administrative functions according to LACERS' policies and direction provided by the Audit Committee and the Board, and professional standards described in Section VIII.

3. Perform an annual operational risk assessment. Develop and implement a flexible annual audit plan (audit plan) using an appropriate risk-based methodology, including any risks or concerns identified by management, and submit the audit plan to the Audit Committee for review and approval. The audit plan will include some unassigned hours in order to provide flexibility for changing conditions. Performance of the audit plan will be periodically reviewed and reported to the Audit Committee. The audit plan may be updated, if necessary.

4. Perform independent analyses of significant operations to evaluate the adequacy and effectiveness of existing systems of internal control and the quality of performance (economy, efficiency, and effectiveness) in carrying out LACERS' business objectives.

5. Coordinate with audit clients to finalize recommendations for improvement and identify implementation timelines. Internal Audit staff shall consider costs and benefits while formulating and discussing its recommendations.

6. Establish and maintain a follow-up system to monitor the disposition of results communicated to management and ensure that management actions have been effectively implemented or that senior management has accepted the risk of not taking action.

7. Issue periodic reports to management and the Audit Committee and management summarizing results of assurance and consulting services. Any management letters issued should also be reported to the Audit Committee.

~~8.~~ At least every three years, assess whether the purpose, authority, and responsibility, as defined in this Charter, continue to be adequate to enable the Internal Audit Section to accomplish its mission, objectives, and scope. The result of this assessment should be communicated to the Audit Committee.

8.

9. Implement a quality assurance and improvement program. Obtain an external assessment no less frequently than every five years as required by the International Standards for the Professional Practice of Internal Auditing. Conduct periodic internal quality assurance and ongoing quality procedures. Results of the quality assurance and improvement program should be reported to the Audit Committee.

10. Lead the process for selecting the external audit firms. Coordinate/manage the contract(s) with any external audit firms and evaluate their performance. Report to the Audit Committee on all activities and associated cost of work performed by the external audit firms.

11. Consider the scope of work of the external auditors and regulators, as appropriate, for the purpose of providing optimal audit coverage to LACERS at a reasonable overall cost

12. Act as the primary point of contact for handling all matters related to audits, examinations, investigations, or inquiries by other City entities, State or Federal agencies. Keep the Audit Committee and/or the General Manager informed as appropriate.

13. Evaluate annually the quality of the annual financial report and suggest improvements in the presentation and disclosure.

14. Consult with LACERS management, as appropriate, regarding potential policy and procedural changes.

15. As appropriate, provide consulting services to management that add value and improve the organization's governance, risk management, and control processes without assuming management responsibility.

16. Participate in professional audit organizations by attending meetings, joining the governing boards, presenting speeches and papers, and networking with other professionals. Network with internal audit staff of other public pension systems to learn and exchange best practices information. Participate in other professional organizations related to LACERS' mission. These may include, but are not limited to, organizations involved with benefits, investments, and accounting.

17. Periodically review LACERS' fraud and ethics policies.

18. Assist in the investigation of significant suspected fraudulent activities within LACERS and notify the General Manager, the Audit Committee, and other executives, as appropriate, of the results.

19. Inform the Audit Committee of significant risk exposures and control issues including fraud risks, governance issues, and other significant matters.

20. Inform the Audit Committee of emerging trends and successful practices in internal auditing.

21. Attend all Audit Committee meetings and ensure the attendance of additional audit staff and attendance by auditees as appropriate.

VIII. PROFESSIONAL STANDARDS

The Internal Audit Section will govern itself by adherence to the mandatory elements of The Institute of Internal Auditors' International Professional Practices Framework, including the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, the International Standards for the Professional Practice of Internal Auditing, and the Definition of Internal Auditing.~~shall adhere to the International Standards for the Professional Practice of Internal Auditing (ISPPIA) and to the Code of Ethics, both as promulgated by the Institute~~

~~of Internal Auditors (IIA), current version of which is attached to this Internal Audit Charter.~~ Internal Audit Section shall also obtain guidance from professional standards of other relevant professional organizations including, but not limited to, the following:

Commented [OR4]: Revised to reflect the new language in the Supplemental guidance

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- Information Systems Auditing Standards, Guidelines, and Procedures, and the Code of Professional Ethics of the Information Systems Audit and Control Association (ISACA);
- Public Company Accounting Oversight Board (PCAOB) auditing standards, as applicable;
- American Institute of Certified Public Accountants (AICPA) Professional Standards and Code of Ethics, as applicable;
- Generally Accepted Government Auditing Standards (GAGAS) from the United States General Accounting Office, as applicable; and
- Other professional standards, such as those of the Institute of Management Accountants (IMA) and the Association of Certified Fraud Examiners (ACFE), as applicable.

IX. RELATIONSHIP TO THE RISK MANAGEMENT AND INTERNAL CONTROLS PROGRAMS

The Board has overall responsibility for ensuring that risks are managed. In practice, the Board delegates to management the operation and implementation of the risk management system. The Internal Audit Section's role is to provide an independent and objective assurance on the effectiveness of the risk management system.

Management is responsible for implementing the system of internal control. The Internal Audit Section is responsible to provide an independent and objective assurance that the internal control system is operating effectively.

X. PROCUREMENT

The Departmental Audit Manager occasionally may need to obtain expertise of persons outside of the Internal Audit Section. This expertise may be obtained within LACERS through appropriate arrangements with management. When obtaining this expertise, care must be taken to avoid conflicts of interest within LACERS that could damage the quality of the audit work performed and/or conclusions obtained.

Expertise may also be obtained from outside LACERS through contracts. In such cases, the DAM needs to obtain sufficient information regarding the scope of work of the external service provider to ensure the scope of work is adequate for the purposes of the internal audit activity. The DAM must document the scope of work, professional standards to be used, deliverables, deadlines, and other matters in an engagement letter or contract. The Audit Committee should be informed of the use of an external service provider.

XI. RELATIONSHIP TO PREVENTION, DETECTION, AND CORRECTION ACTIVITIES

Section 3.0 DUTIES AND RESPONSIBILITIES

—Because LACERS recognizes that it is more expensive to detect and correct problems after the fact that it is to prevent them in the initial stages of a project, the Internal Audit Section will strive to participate in the initial stages of major projects so that risks can be managed appropriately and internal controls instituted in the design phase in order to prevent problems and minimize costs.

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Auditor Annual Independence Certification

DIRECTIONS: Each auditor must complete this Evaluation form in its entirety. The purpose of this form is for individual auditor and LACERS Internal Audit management to consider all circumstances relative to internal audit projects, in order to identify and address any potential threats to independence by applying appropriate safeguards or controls.

In all matters relating to audit work, LACERS Internal Audit (IAS), and individual auditors must be independent, in compliance with Sections 1100, 1120 and 1130 of the International Standards for the Professional Practice of Internal Auditing (ISPPIA). Auditors should avoid situations that could lead reasonable and informed third parties to conclude that the auditors are not independent and thus are not capable of exercising objective and impartial judgment on all issues associated with conducting the audit and reporting on audit work. Auditors should evaluate these considerations during the course of their audits and immediately report any potential or actual threats.

Threat Consideration: To be completed by all audit staff **annually**:

Threat Categories: Complete the following, considering the threat as a broad category that could potentially influence your independence.	**Yes**	**No**
Self-interest threat – Do you have a direct or indirect financial or other interest that will inappropriately influence your judgment or behavior?		
Self-review threat – Will any of the anticipated audit work put you in a position to audit the work, services, or judgments you previously performed during a non-auditing (consulting) service?		
Familiarity threat – Do you have any relationship with LACERS management or personnel, or personnel of LACERS contractors/consultants which may impact your ability to be objective as LACERS Internal Audit staff?		
Undue influence threat – Are you experiencing pressure from management, LACERS Staff or external parties, which will impact your ability or make independent and objective judgments on internal audit projects?		
Management participation threat – Have you taken on a management or any other role which has or will result in performing management functions for any unit within LACERS? If so, please list the unit(s) ________________________________		
Relationship – Do you have any official, professional, financial, or personal relationship with anyone that might limit the extent of inquiry or disclosure, or weaken audit findings in any way?		
Accounting – During the past year, have you approved invoices, payrolls, claims, or other proposed payments for any unit within LACERS? During the past year, did you maintain any part of the official accounting records for LACERS?		
Conflict of Interest or Secondary Employment – Are you or have you been in a conflict of interest position or engaged in any secondary employment activities which may impact your ability, in any way, to perform internal audit projects?		
Other Threat: Is there any other relevant potential threat which may impact your independence or perception regarding any audit? (If so, disclose here. If you are not sure, discuss it with the Departmental Audit Manager.)		

Auditor Annual Independence Certification

Safeguard Consideration: If "yes" is marked in any boxes above, please complete the following section:

Potential Threat	Recommended Safeguard to mitigate Threat (and is risk reduced to an acceptable level?)	Departmental Audit Manager only: Does the safeguard eliminate or reduce the threat to an acceptable level?
Ex. Accounting – I previously worked in the Fiscal Section, but I only handled the accounts payable.	*I don't believe this is an unacceptable risk, as I don't manage or work in investment accounting or other areas within Fiscal Section, and I left about six months ago.*	*No. To avoid the perception of impairment, auditor is not approved to participate in audit projects relating to the Fiscal Section.*

Acknowledgement: *(initial after each statement)*

Comply with ISPPIA: I understand that I have a duty and obligation to ensure audit work is performed in full accordance with ISPPIA. In conducting my work, I have the obligation to immediately report any conditions or situations which may compromise compliance with any ISPPIA to the Departmental Audit Manager (DAM). ______

Remain Independent: I have been advised that during the course of any audit, if any personal, external, or organizational impairments or potential threats arise that may affect my ability to do the work and report findings impartially, I will notify the DAM promptly. Further, I will assess ongoing threats, identify potential safeguards, and engage the DAM in remedying any situations which may give rise to even the perception of bias or conditions which may impact the integrity of any audit work. _______

Policies and Procedures: I have been informed and am familiar with the policies and procedures of IAS, regarding independence and objectivity. I am also familiar with the requirements of the 2012 ISPPIA. _______

Obligation to Report: I understand that I have an obligation to report any instance or information regarding an actual or potential impairment by any auditor in IAS to the DAM. _______

Direct Access to Audit Committee Chair: If for any reason I am uncomfortable discussing any of the foregoing matters with the DAM, I understand that I am expected to discuss the matter with the Audit Committee Chairperson. _______

I certify that all the included information is complete and accurate and reflects my best ability to provide clear, detailed information regarding any activity or condition which may impair or to be perceived to impair independence and/or objectivity.

Signature: ____ Date: ____________________

Name (print): ____

Departmental Audit Manager Review and Approval:

Overall Assessment:

Restrictions:

Signature: ____ Date: ____________________

Annual Certification, Page 2

Internal Audit Charter

Adopted by the Board: November 12, 2013; Revised: November 13, 2018

I. PURPOSE

The purpose of this Charter is to formally define LACERS' internal audit function's purpose, authority, and responsibility. The internal audit charter establishes the internal audit function's position within LACERS including the nature of the Departmental Audit Manager's (or DAM) functional reporting relationship with the Board; authorizes access to records, personnel, and physical properties relevant to the performance of engagements; and defines the scope of internal audit activities. This Charter shall be reviewed annually and updated as necessary.

II. MISSION

The Mission of the Internal Audit Section is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight. Internal Audit helps LACERS accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of governance, risk management, and control processes.

III. OBJECTIVES AND SCOPE

Assurance Objectives: The objectives of the Internal Audit Section's assurance services are to provide independent assurance to the Board, the Audit Committee, and LACERS' Executive Management that LACERS' assets are safeguarded, operating efficiency is enhanced, and compliance is maintained within prescribed laws, Board Rules, and management policies. Assurance objectives include independent assessment of LACERS' governance, risk management, and control processes.

Consulting Objectives: The objectives of the Internal Audit Section's consulting services, the nature and scope of which are agreed with management, are to provide management with assessments and advice for improving LACERS' governance, risk management and control without the Internal Audit Section assuming management responsibility. For example, consulting services may provide assessments and advice on the front-end projects so that risks can be identified, managed, and internal controls can be designed.

Scope: The scope of internal audit activities encompasses, but is not limited to, objective examinations of evidence for the purpose of providing independent assessments to the LACERS' Board, Audit Committee, management, and outside parties on the adequacy and effectiveness of governance, risk management, and control processes for LACERS. Internal audit assessments include evaluating whether:

- ➢ Risks relating to the achievement of LACERS' strategic objectives are appropriately identified and managed;

- The actions of LACERS' officers, directors, employees, and contractors are in compliance with Board's policies, procedures, and applicable laws, regulations, and governance standards;
- The results of operations or programs are consistent with established goals and objectives;
- Operations or programs are being carried out effectively and efficiently;
- Established processes and systems enable compliance with the policies, procedures, laws, and regulations that could significantly impact Plan;
- Information and the means used to identify, measure, analyze, classify, and report such information are reliable and have integrity;
- Resources and assets are acquired economically, used efficiently, and protected adequately;

Opportunities for improving member service, management of risks, internal control, governance, and the organization's effectiveness and image may be identified during audits. This information will be communicated to management and the Audit Committee as appropriate.

IV. AUTHORITY

The Internal Audit Section reports functionally to the Board through its Audit Committee, and administratively to the General Manager. The Audit Committee advises on the appointment, replacement, or dismissal of the Departmental Audit Manager (DAM) in consultation with the General Manager as appointing authority.

The DAM is responsible for managing the Internal Audit Section and preparing an audit plan. The Audit Committee reviews and recommends the approval of the annual audit plan to the Board. The DAM shall periodically inform the Audit Committee regarding the status of the audit plan and changes needed. The DAM is authorized to allocate internal audit resources, set project frequencies, select audit subjects, determine scopes of work, and apply the techniques necessary to accomplish the audit objectives. The DAM is authorized to hire (within budgetary constraints), retain, train, and develop internal audit staff to achieve the internal audit objectives as stated in this Charter.

The DAM and other Internal Audit staff are not authorized to perform operational duties for LACERS and/or its contractors. LACERS Internal Audit staff is not authorized to initiate or approve accounting transactions external to the Internal Audit Section. Internal Audit Section staff is not authorized to direct the activities of any LACERS employee not employed in the Internal Audit Section, except to the extent such employees have been assigned appropriately to auditing teams or to otherwise assist the internal auditors.

Section 3.0 DUTIES AND RESPONSIBILITIES

V. ACCESS

The Departmental Audit Manager and designated audit staff, as appropriate, are granted authority for full, free, and unrestricted access to all of LACERS' functions, records, files and information systems, personnel, contractors, physical properties, and any other item relevant to the function, process or unit under review. All LACERS' contracts with vendors shall contain language enabling the internal auditors, other auditors, and specialists to have access to relevant records and information. All LACERS employees are required to assist the staff of the Internal Audit Section in fulfilling its audit functions and fiduciary duties.

The DAM shall have free and unrestricted access to the Chairperson of the Audit Committee and Members, the President, Vice President, and Members of the Board of Administration. The DAM shall also have free and unrestricted access to the General Manager, other executive management, and all personnel, contractors and vendors, members, retirees, and beneficiaries of LACERS.

Staff of the Internal Audit Section shall handle documents and information given to them in the same prudent and confidential manner as by those employees normally accountable for them. The DAM shall ensure that the Internal Audit staff is instructed in the handling and safeguarding of confidential information.

VI. INDEPENDENCE

Organizational Placement: To provide for the independence for the Internal Audit Section, its personnel report to the Departmental Audit Manager, who in turn reports functionally to the Board and administratively to the General Manager. By reporting functionally to the Board, the DAM is able to maintain independence and objectivity in planning and executing internal audit activities. The Board supports internal audit's role by maintaining internal audit's independence, and by recognizing and promoting internal audit as a value-added activity.

Professional Standards Independence: The Audit Committee recognizes that professional independence requires that the auditors have knowledge of operations and appropriate expertise in the subject matter that is being audited. Therefore, the DAM will include as part of the reports to the Audit Committee, a regular report regarding internal audit personnel, including their qualifications, certifications, and development. The DAM shall periodically discuss standards of professional audit independence with the Audit Committee. The standards of independence used as benchmarks shall be those indicated in the Professional Standards section of this document.

Potential Impairment of Independence: The DAM should discuss any potential issues regarding impairment of independence and/or conflicts of interest and their mitigation(s) with the Audit Committee, as necessary. If objectivity is impaired in fact or in appearance, the details of the impairment should be disclosed to the General Manager and the Audit Committee. The nature of the disclosure will depend on the impairment. Each Internal Audit Section staff member (including the DAM) shall be required to annually certify to the Audit Committee that he/she has no actual or perceived conflicts of interest that would impair their objectivity or independence. The form for such certification is attached to this charter, and may be revised by the DAM with approval of the Audit Committee as needed.

VII. RESPONSIBILITIES AND ACCOUNTABILITY

The Departmental Audit Manager is responsible for the following in order to meet the mission, objectives, and scope of this Charter and the Internal Audit Section:

1. Select, train, develop, and retain a competent Internal Audit staff who collectively have the abilities, knowledge, skills, experience, expertise, and professional certifications necessary to accomplish the mission, objectives, and scope of this Charter, subject to the General Manager’s approval and budgetary considerations. Provide opportunity and support for staff obtaining professional training, professional examinations, and professional certifications.

2. Establish polices for conducting and directing internal audit activities, and technical and administrative functions according to LACERS’ policies and direction provided by the Audit Committee and the Board, and professional standards described in Section VIII.

3. Perform an annual operational risk assessment. Develop and implement a flexible annual audit plan (audit plan) using an appropriate risk-based methodology, including any risks or concerns identified by management, and submit the audit plan to the Audit Committee for review and approval. The audit plan will include some unassigned hours in order to provide flexibility for changing conditions. Performance of the audit plan will be periodically reviewed and reported to the Audit Committee. The audit plan may be updated, if necessary.

4. Perform independent analyses of significant operations to evaluate the adequacy and effectiveness of existing systems of internal control and the quality of performance (economy, efficiency, and effectiveness) in carrying out LACERS’ business objectives.

5. Coordinate with audit clients to finalize recommendations for improvement and identify implementation timelines. Internal Audit staff shall consider costs and benefits while formulating and discussing its recommendations.

6. Establish and maintain a follow-up system to monitor the disposition of results communicated to management and ensure that management actions have been effectively implemented or that senior management has accepted the risk of not taking action.

7. Issue periodic reports to management and the Audit Committee and management summarizing results of assurance and consulting services. Any management letters issued should also be reported to the Audit Committee.

8. At least every three years, assess whether the purpose, authority, and responsibility, as defined in this Charter, continue to be adequate to enable the Internal Audit Section to accomplish its mission, objectives, and scope. The result of this assessment should be communicated to the Audit Committee.

Section 3.0 DUTIES AND RESPONSIBILITIES

9. Implement a quality assurance and improvement program. Obtain an external assessment no less frequently than every five years as required by the International Standards for the Professional Practice of Internal Auditing. Conduct periodic internal quality assurance and ongoing quality procedures. Results of the quality assurance and improvement program should be reported to the Audit Committee.

10. Lead the process for selecting the external audit firms. Coordinate/manage the contract(s) with any external audit firms and evaluate their performance. Report to the Audit Committee on all activities and associated cost of work performed by the external audit firms.

11. Consider the scope of work of the external auditors and regulators, as appropriate, for the purpose of providing optimal audit coverage to LACERS at a reasonable overall cost

12. Act as the primary point of contact for handling all matters related to audits, examinations, investigations, or inquiries by other City entities, State or Federal agencies. Keep the Audit Committee and/or the General Manager informed as appropriate.

13. Evaluate annually the quality of the annual financial report and suggest improvements in the presentation and disclosure.

14. Consult with LACERS management, as appropriate, regarding potential policy and procedural changes.

15. As appropriate, provide consulting services to management that add value and improve the organization’s governance, risk management, and control processes without assuming management responsibility.

16. Participate in professional audit organizations by attending meetings, joining the governing boards, presenting speeches and papers, and networking with other professionals. Network with internal audit staff of other public pension systems to learn and exchange best practices information. Participate in other professional organizations related to LACERS’ mission. These may include, but are not limited to, organizations involved with benefits, investments, and accounting.

17. Periodically review LACERS’ fraud and ethics policies.

18. Assist in the investigation of significant suspected fraudulent activities within LACERS and notify the General Manager, the Audit Committee, and other executives, as appropriate, of the results.

19. Inform the Audit Committee of significant risk exposures and control issues including fraud risks, governance issues, and other significant matters.

20. Inform the Audit Committee of emerging trends and successful practices in internal auditing.

21. Attend all Audit Committee meetings and ensure the attendance of additional audit staff and attendance by auditees as appropriate.

VIII. PROFESSIONAL STANDARDS

The Internal Audit Section will govern itself by adherence to the mandatory elements of The Institute of Internal Auditors' International Professional Practices Framework, including the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, the International Standards for the Professional Practice of Internal Auditing, and the Definition of Internal Auditing. Internal Audit Section shall also obtain guidance from professional standards of other relevant professional organizations including, but not limited to, the following:

- Information Systems Auditing Standards, Guidelines, and Procedures, and the Code of Professional Ethics of the Information Systems Audit and Control Association (ISACA);
- Public Company Accounting Oversight Board (PCAOB) auditing standards, as applicable;
- American Institute of Certified Public Accountants (AICPA) Professional Standards and Code of Ethics, as applicable;
- Generally Accepted Government Auditing Standards (GAGAS) from the United States General Accounting Office, as applicable; and
- Other professional standards, such as those of the Institute of Management Accountants (IMA) and the Association of Certified Fraud Examiners (ACFE), as applicable.

IX. RELATIONSHIP TO THE RISK MANAGEMENT AND INTERNAL CONTROLS PROGRAMS

The Board has overall responsibility for ensuring that risks are managed. In practice, the Board delegates to management the operation and implementation of the risk management system. The Internal Audit Section’s role is to provide an independent and objective assurance on the effectiveness of the risk management system.

Management is responsible for implementing the system of internal control. The Internal Audit Section is responsible to provide an independent and objective assurance that the internal control system is operating effectively.

X. PROCUREMENT

The Departmental Audit Manager occasionally may need to obtain expertise of persons outside of the Internal Audit Section. This expertise may be obtained within LACERS through appropriate arrangements with management. When obtaining this expertise, care must be taken to avoid conflicts of interest within LACERS that could damage the quality of the audit work performed and/or conclusions obtained.

Expertise may also be obtained from outside LACERS through contracts. In such cases, the DAM needs to obtain sufficient information regarding the scope of work of the external service provider to ensure the scope of work is adequate for the purposes of the internal audit activity. The DAM must document the scope of work, professional standards to be used, deliverables, deadlines, and other matters in an engagement letter or contract. The Audit Committee should be informed of the use of an external service provider.

XI. RELATIONSHIP TO PREVENTION, DETECTION, AND CORRECTION ACTIVITIES

Because LACERS recognizes that it is more expensive to detect and correct problems after the fact that it is to prevent them in the initial stages of a project, the Internal Audit Section will strive to participate in the initial stages of major projects so that risks can be managed appropriately and internal controls instituted in the design phase in order to prevent problems and minimize costs.

Auditor Annual Independence Certification

DIRECTIONS: Each auditor must complete this Evaluation form in its entirety. The purpose of this form is for individual auditor and LACERS Internal Audit management to consider all circumstances relative to internal audit projects, in order to identify and address any potential threats to independence by applying appropriate safeguards or controls.

In all matters relating to audit work, LACERS Internal Audit (IAS), and individual auditors must be independent, in compliance with Sections 1100, 1120 and 1130 of the International Standards for the Professional Practice of Internal Auditing (ISPPIA). Auditors should avoid situations that could lead reasonable and informed third parties to conclude that the auditors are not independent and thus are not capable of exercising objective and impartial judgment on all issues associated with conducting the audit and reporting on audit work. Auditors should evaluate these considerations during the course of their audits and immediately report any potential or actual threats.

Threat Consideration: To be completed by all audit staff **annually**:

Threat Categories: Complete the following, considering the threat as a broad category that could potentially influence your independence.	**Yes**	**No**
Self-interest threat – Do you have a direct or indirect financial or other interest that will inappropriately influence your judgment or behavior?		
Self-review threat – Will any of the anticipated audit work put you in a position to audit the work, services, or judgments you previously performed during a non-auditing (consulting) service?		
Familiarity threat – Do you have any relationship with LACERS management or personnel, or personnel of LACERS contractors/consultants which may impact your ability to be objective as LACERS Internal Audit staff?		
Undue influence threat – Are you experiencing pressure from management, LACERS Staff or external parties, which will impact your ability or make independent and objective judgments on internal audit projects?		
Management participation threat – Have you taken on a management or any other role which has or will result in performing management functions for any unit within LACERS? If so, please list the unit(s) ______________________________		
Relationship – Do you have any official, professional, financial, or personal relationship with anyone that might limit the extent of inquiry or disclosure, or weaken audit findings in any way?		
Accounting – During the past year, have you approved invoices, payrolls, claims, or other proposed payments for any unit within LACERS? During the past year, did you maintain any part of the official accounting records for LACERS?		
Conflict of Interest or Secondary Employment – Are you or have you been in a conflict of interest position or engaged in any secondary employment activities which may impact your ability, in any way, to perform internal audit projects?		
Other Threat: Is there any other relevant potential threat which may impact your independence or perception regarding any audit? (If so, disclose here. If you are not sure, discuss it with the Departmental Audit Manager.)		

Auditor Annual Independence Certification

Safeguard Consideration: If "yes" is marked in any boxes above, please complete the following section:

Potential Threat	Recommended Safeguard to mitigate Threat (and is risk reduced to an acceptable level?)	Departmental Audit Manager only: Does the safeguard eliminate or reduce the threat to an acceptable level?
Ex. Accounting – I previously worked in the Fiscal Section, but I only handled the accounts payable.	*I don't believe this is an unacceptable risk, as I don't manage or work in investment accounting or other areas within Fiscal Section, and I left about six months ago.*	*No. To avoid the perception of impairment, auditor is not approved to participate in audit projects relating to the Fiscal Section.*

Acknowledgement: (*initial after each statement)*

Comply with ISPPIA: I understand that I have a duty and obligation to ensure audit work is performed in full accordance with ISPPIA. In conducting my work, I have the obligation to immediately report any conditions or situations which may compromise compliance with any ISPPIA to the Departmental Audit Manager (DAM).______

Remain Independent: I have been advised that during the course of any audit, if any personal, external, or organizational impairments or potential threats arise that may affect my ability to do the work and report findings impartially, I will notify the DAM promptly. Further, I will assess ongoing threats, identify potential safeguards, and engage the DAM in remedying any situations which may give rise to even the perception of bias or conditions which may impact the integrity of any audit work. _______

Policies and Procedures: I have been informed and am familiar with the policies and procedures of IAS, regarding independence and objectivity. I am also familiar with the requirements of the 2012 ISPPIA. _______

Obligation to Report: I understand that I have an obligation to report any instance or information regarding an actual or potential impairment by any auditor in IAS to the DAM._______

Direct Access to Audit Committee Chair: If for any reason I am uncomfortable discussing any of the foregoing matters with the DAM, I understand that I am expected to discuss the matter with the Audit Committee Chairperson. _______

I certify that all the included information is complete and accurate and reflects my best ability to provide clear, detailed information regarding any activity or condition which may impair or to be perceived to impair independence and/or objectivity.

Signature: ____ Date: ____________________

Name (print): ____

Departmental Audit Manager Review and Approval:

Overall Assessment:

Restrictions:

Signature: ____ Date: ____________________

Association of
Public Pension Fund
Auditors

Model Internal Audit Department Charter

Revised February 2013

Endorsed by:
Association of Public Pension Fund Auditors, Inc.
A Project of the Best Practices Committee

TABLE OF CONTENTS

FOREWORD

The following Model Internal Audit Department Charter (IAD Charter) captures many of the best practices used at the present time, February 2013. This IAD Charter may not encompass all activities that might be appropriate to a particular internal audit department, nor are all activities identified in this IAD Charter relevant to every internal audit department. Accordingly, this IAD Charter should be tailored to each internal audit department's needs and governing rules. Moreover, as applicable laws, rules, and customs change, this IAD Charter should be updated.

Endorsement by the Association of Public Pension Fund Auditors, Inc. (APPFA) means that the document is intended as a starting point of reference and as a guide to public pension funds in developing and/or revising their internal audit department charters. To the extent that a public pension fund has unique circumstances, different applications and modifications of the example passages may be desirable.

The first version of this publication was completed in August 2004 and was updated in February 2013. The update was completed by the following members of the APPFA Best Practices Committee:

Flerida Rivera-Alsing, Chair	State Board of Administration of Florida
Ryan Babin	Louisiana State Employees Retirement System
Jenine Gregory	Ontario Municipal Employees Retirement System
Janet Harris	Public School Retirement System of Missouri
Amen Tam	Ontario Municipal Employees Retirement System
Toni Voglino	Maryland State Retirement and Pension System

The February 2013 version of this publication was approved by the APPFA Board in May 2013.

I. MISSION

The mission of the Internal Audit Department (IAD) is to provide independent, objective assurance, and consulting services designed to add value and improve the organization's operations. The IAD helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of governance, risk management, and control processes.[1] The IAD:

- Provides a wide range of quality independent internal auditing services for the Audit Committee and executive management and consulting services for management.

- Performs independent assessments of the systems of risk management, internal controls and operating efficiency, guided by professional standards and using innovative approaches.

- Supports the organization’s efforts to achieve its objectives through independent assurance and consulting services.

- Maintains a dynamic, team-oriented environment that encourages personal and professional growth, and challenges and rewards internal audit staff for excellence and reaching their full potential.

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[1] Source: International Standards for the Professional Practice of Internal Auditing issued by The Institute of Internal Auditors, Inc.,

II. OBJECTIVES AND SCOPE

A. *Assurance Objectives*

The objectives of the IAD's assurance services are to provide independent assurance to the Board of Trustees (Board), Audit Committee, and management that the organization's assets are safeguarded, operating efficiency is enhanced, and compliance is maintained with prescribed laws, and the organization's policies. Assurance objectives include independent assessment of the organization's governance, risk management, and control processes.

B. *Consulting Objectives*

The objectives of the IAD's consulting services, the nature and scope are agreed with management, are to provide assessments and advice for improving the organization's governance, risk management, and control without the IAD assuming management responsibility. In particular, the consulting objectives are to provide assessments and advice at the beginning of a project so that risks may be identified, managed, and internal controls may be designed adequately.

C. *Scope*

The scope of work of the IAD is to determine whether the organization's network of risk management, internal control, and governance processes, as designed and represented by management, is adequate and functioning to ensure:

- Programs are operating within fiduciary standards and are in compliance with laws, regulations, ordinances, policies, and procedures.

- Risks are appropriately identified and managed.

- Programs and processes are consistent with industry best practices, using the best public and private examples as benchmarks.

- Operations, processes, and programs are consistent with established missions, objectives and goals and whether they are being carried out as planned.

- Existing policies and procedures are appropriate and updated.

- Significant financial, managerial, and operating information is accurate, reliable, and timely.

- Resources are acquired economically, used efficiently, and adequately protected.

- Quality and continuous improvement are fostered in the organization’s control process.

- Employers appropriately enroll employees, accurately report employee earnings, and appropriately report other employee data.

- Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately.

Opportunities for improving member service, management of risks, internal control, governance, and the organization’s effectiveness and image may be identified during audits. This information will be communicated to the Audit Committee and to appropriate levels of management.

III. AUTHORITY

The internal audit function of this organization is established by state statutes XXXX, and enabled by regulations YYYY. The IAD is established by this organization pursuant to these applicable laws and regulations, customs of corporate governance, and best practices. This IAD Charter and all future amendments are to be approved by the Audit Committee through a majority vote. This IAD Charter shall be reviewed at least annually and updated as necessary.

The Chief Audit Executive (CAE) reports functionally to the Audit Committee and reports administratively to the Chief Executive Officer (CEO). The CAE is hired, evaluated, retained, and terminated by the Audit Committee. The Audit Committee will seek input from the CEO in making its selection.

The CAE is delegated the authority to manage the IAD. The CAE is authorized to allocate resources, set project frequencies, select audit subjects, determine scope of work, and apply the techniques necessary to accomplish the audit objectives. The CAE is authorized to hire, retain, train, and terminate internal audit staff, when necessary, to achieve the objectives of the IAD.

The CAE and internal audit staff are not authorized to perform operational duties for the organization and/or its affiliates and contractors. IAD staff is not authorized to:

- Initiate or approve accounting transactions external to the IAD.

- Direct the activities of any organization employee not employed by the IAD, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the internal auditors.

IV. ACCESS

The CAE and designated audit staff, as appropriate, shall have full, free, and unrestricted access to all of the organizations' functions, records, files and information systems, personnel, contractors, physical properties, rental locations, and any other item relevant to the function, process, or department under review. All contracts with vendors shall contain the organization's standard audit language enabling the organization's internal auditors, other auditors and specialists to have access to relevant records and information. All of the employees of the organization are required to assist the staff of the IAD in fulfilling their function.

The CAE shall have free and unrestricted access to the Chair, members of the Audit Committee, and Board of Trustees. The CAE shall also have free and unrestricted access to the CEO, other executives, management, all personnel, contractors, vendors, employers, members, retirees and beneficiaries of the organization.

Documents and information given to the IAD shall be handled in the same prudent and confidential manner as by those employees normally accountable for them. The CAE shall ensure that internal audit staff is adequately coached in the handling and safeguarding of confidential information.

V. INDEPENDENCE

A. Organizational Placement

To provide for the independence of the IAD, its personnel report to the CAE, who in turn reports functionally to the Audit Committee and administratively to the CEO. The CAE shall freely discuss audit policies, audit findings and recommendations, audit follow-up, issues, and other matters as necessary.

B. Professional Standards of Independence

The Audit Committee recognizes that professional independence requires that the internal auditors have knowledge of operations and appropriate expertise in the subject matter that is being audited. Therefore, the CAE will report to the Audit Committee the qualifications, certifications, and training requirements of the internal audit staff. The CAE shall periodically discuss standards of professional audit independence with the Audit Committee. The standards of independence used as benchmarks will be those of the organizations mentioned in Section VII of this document.

C. Impairment of Independence

The CAE should discuss any potential issues regarding impairment of independence and/or conflicts of interest and their mitigation(s) with the Audit Committee, as necessary. If objectivity or independence is impaired in fact or appearance, the details of the impairment should be disclosed to the appropriate parties. The nature of the disclosure will depend on the impairment. The IAD should annually certify to the Audit Committee they have no actual or perceived conflicts of interest that would impair their objectivity or independence.

VI. RESPONSIBILITIES AND ACCOUNTABILITY

The CAE is responsible for the following in order to meet the mission, objectives, and scope of this Charter and the IAD.

1. Select, train, develop, and retain a competent internal audit staff who collectively has the abilities, knowledge, skills, experience, expertise and professional certifications necessary to accomplish the mission, objectives and scope of this Charter. Provide opportunity and support for staff obtaining professional training, examinations, and certifications.

2. Establish policies for conducting IAD activities according to the organization's policies, direction provided by the Audit Committee, and professional standards described in Section VII.

3. Perform an annual risk assessment. Develop and implement a flexible annual audit plan (audit plan) using an appropriate risk-based methodology, including any risks or concerns identified by management, and submit the audit plan to the Audit Committee for review and approval. The audit plan will include some unassigned hours in order to provide flexibility for changing conditions. Performance of the audit plan will be periodically reviewed and reported to the Audit Committee. The audit plan may be updated, if necessary.

4. Prepare a budget that is complementary to the implementation of the audit plan.

5. Perform independent analyses of significant operations to evaluate the adequacy and effectiveness of existing systems of internal control and the quality of performance (economy, efficiency, and effectiveness) in carrying out its business objectives.

6. Establish and maintain a follow-up system to monitor the disposition of results communicated to management and ensure that management actions have been effectively implemented or that senior management has accepted the risk of not taking action.

7. Issue periodic reports to the Audit Committee and management summarizing results of assurance and consulting services. Any management letters issued should also be reported to the Audit Committee.

8. Assess periodically whether the purpose, authority, and responsibility, as defined in this IAD Charter, continue to be adequate to enable the IAD to accomplish its mission, objectives, and scope. The result of this periodic assessment should be communicated to the Audit Committee and the CEO.

9. Implement a quality assurance and improvement program. Obtain an external assessment no less frequently than every five years [*International Standards for the*

Professional Practice of Internal Auditing] or every three years [*Generally Accepted Government Auditing Standards*], as appropriate. Conduct periodic internal quality assurance and ongoing quality procedures. Results of the quality assurance and improvement program should be reported to the Audit Committee.

10. Lead/participate in the selection of external audit firms. Coordinate/manage the contract(s) with any external audit firms and evaluate their performance. Report to the Audit Committee on all activities and associated cost of work performed by the external audit firms.

11. Consider the scope of work of the external auditors and regulators, as appropriate, for the purpose of providing optimal audit coverage to the organization at a reasonable overall cost.

12. Act as the primary point of contact for handling all matters related to audits, examinations, investigations or inquiries of the state auditor or other appropriate state or federal auditors.

13. As appropriate, provide consulting services to management that add value and improve the organization's governance, risk management, and control processes without assuming management responsibility.

14. Assist in the investigation of suspected fraudulent activities within the organization and notify the Audit Committee, the CEO and other Executives, as appropriate, of the results.

15. Inform the Audit Committee of significant risk exposures and control issues including fraud risks, governance issues and other significant matters.

16. Inform the Audit Committee of emerging trends and successful practices in internal auditing.

17. Attend all Audit Committee meetings, and ensure attendance of additional audit staff and auditees, as appropriate.

VII. PROFESSIONAL STANDARDS & GUIDANCE

The IAD shall follow the professional standards of relevant professional organizations. The IAD should consider professional guidance published by these organizations. These professional standards and guidance include, but are not limited to, the following:

- The Institute of Internal Auditors mandatory guidance which includes the International Standards for the Professional Practice of Internal Auditing, Code of Ethics, and Definition of Internal Auditing. The current versions of these documents are part of this IAD Charter and are appended thereto.

- IS Auditing Standards, Guidelines, and Procedures, and the Code of Professional Ethics of the ISACA. The Control Objectives for Information Technology will be used as a reference. The current versions of these documents are part of this Charter and are appended thereto.

- Professional Standards and Code of Ethics of the American Institute of Certified Public Accountants, as applicable.

- Generally Accepted Government Auditing Standards from the United States General Accountability Office, as applicable.

- Public Company Accounting Oversight Board (PCAOB) auditing standards, as applicable.

- Other professional standards, such as those of the Institute of Management Accountants (IMA) and the Association of Certified Fraud Examiners (ACFE), as applicable.

- Other professional guidance such as The Institute of Internal Auditors Practice Advisories, Practice Guides, and Position Papers.

VIII. RELATIONSHIP TO RISK MANAGEMENT AND INTERNAL CONTROL PROGRAMS

The Board has overall responsibility for ensuring that risks are managed. In practice, the Board delegates to management the operation and implementation of the risk management system. The IAD's role is to provide an independent and objective assurance on the effectiveness of the risk management system.

Management is responsible for implementing a system of internal control. The IAD's role is to provide an independent and objective assurance that the internal control system is operating effectively.

IX. PROCUREMENT OF OUTSIDE EXPERTISE

The CAE may occasionally need to obtain the expertise of persons outside of the IAD. When the CAE intends to use and rely on the work of a person outside the IAD, the CAE needs to consider the competence, independence, and objectivity of the person.

Expertise may be obtained within the organization through appropriate arrangements with management. When obtaining this expertise within the organization, care must be taken to avoid conflicts of interest that could damage the quality of the audit work performed and/or conclusions obtained.

Expertise may also be obtained from outside the organization. In such cases, the CAE needs to obtain sufficient information regarding the scope of work of the external service provider to ensure the scope of work is adequate for the purposes of the internal audit activity. The CAE must document the scope of work, professional standards to be used, deliverables, deadlines, and other matters in an engagement letter or contract. The Audit Committee should be informed about the use of an external service provider.

XI. SIGNATURE PAGE

This IAD Charter was adopted by the Audit Committee on (date), and approved by the Board. This IAD Charter is effective this day and is hereby signed by the following persons who have authority and responsibilities under this Charter.

Chair, Audit Committee	Date	Chair, Board of Trustees	Date
Chief Audit Executive	Date	Chief Executive Officer	Date

REFERENCES

The Institute of Internal Auditors’ International Standards for the Professional Practice of Internal Auditing.

The Institute of Internal Auditors’ Model Internal Audit Activity Charter.

IIA Position Paper: The Role of Internal Auditing in Enterprise-Wide Risk Management.

Internal Audit Charter of the various public pension fund systems who are members of APPFA.

Association of
Public Pension Fund
Auditors

PO Box 16064 • Columbus, OH 43216-6064
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Supplemental Guidance

Model Internal Audit Activity Charter

The Model Internal Audit Activity Charter is designed to illustrate common practices typically set out in an internal audit activity charter. The generic nature of this draft is intended to encourage customization.

The document may not reflect all legal or regulatory requirements that exist in the every jurisdiction. Additionally, stakeholder expectations may influence the inclusion or deletion of certain practices.

In drafting an internal audit activity charter, the chief audit executive should exercise care to customize the charter, including replacing bracketed, blue text with language that accurately reflects the user's situation.

Purpose and Mission

The purpose of [name of organization]'s internal audit [department/activity] is to provide independent, objective assurance and consulting services designed to add value and improve [name of organization]'s operations. The mission of internal audit is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight. The internal audit [department/activity] helps [name of organization] accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of governance, risk management, and control processes.

Standards for the Professional Practice of Internal Auditing

The internal audit [department/activity] will govern itself by adherence to the mandatory elements of The Institute of Internal Auditors' International Professional Practices Framework, including the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, the *International Standards for the Professional Practice of Internal Auditing*, and the Definition of Internal Auditing. The chief audit executive will report periodically to senior management and the [board/audit committee/supervisory committee] regarding the internal audit [department/activity]'s conformance to the Code of Ethics and the *Standards*.

Authority

The chief audit executive will report functionally to the [board/audit committee/supervisory committee] and administratively (i.e., day-to-day operations) to the [chief executive officer].To establish, maintain, and assure that [name of organization]'s internal audit [department/activity] has sufficient authority to fulfill its duties, the [board/audit committee/supervisory committee] will:

- Approve the internal audit [department/activity]'s charter.
- Approve the risk-based internal audit plan.
- Approve the internal audit [department/activity]'s budget and resource plan.
- Receive communications from the chief audit executive on the internal audit [department/activity]'s performance relative to its plan and other matters.
- Approve decisions regarding the appointment and removal of the chief audit executive.
- Approve the remuneration of the chief audit executive.
- Make appropriate inquiries of management and the chief audit executive to determine whether there is inappropriate scope or resource limitations.

The chief audit executive will have unrestricted access to, and communicate and interact directly with, the [board/audit committee/supervisory committee], including in private meetings without management present.

The [board/audit committee/supervisory committee] authorizes the internal audit [department/activity] to:

- Have full, free, and unrestricted access to all functions, records, property, and personnel pertinent to carrying out any engagement, subject to accountability for confidentiality and safeguarding of records and information.
- Allocate resources, set frequencies, select subjects, determine scopes of work, apply techniques required to accomplish audit objectives, and issue reports.
- Obtain assistance from the necessary personnel of [name of organization], as well as other specialized services from within or outside [name of organization], in order to complete the engagement.

Independence and Objectivity

The chief audit executive will ensure that the internal audit [department/activity] remains free from all conditions that threaten the ability of internal auditors to carry out their responsibilities in an unbiased manner, including matters of audit selection, scope, procedures, frequency, timing, and report content. If the chief audit executive determines that independence or objectivity may be impaired in fact or appearance, the details of impairment will be disclosed to appropriate parties.

Internal auditors will maintain an unbiased mental attitude that allows them to perform engagements objectively and in such a manner that they believe in their work product, that no quality compromises are made, and that they do not subordinate their judgment on audit matters to others.

Internal auditors will have no direct operational responsibility or authority over any of the activities audited. Accordingly, internal auditors will not implement internal controls, develop procedures, install systems, prepare records, or engage in any other activity that may impair their judgment, including:

- Assessing specific operations for which they had responsibility within the previous year.
- Performing any operational duties for [name of organization] or its affiliates.
- Initiating or approving transactions external to the internal audit [activity/department].

- Directing the activities of any [name of organization] employee not employed by the internal audit [department/activity], except to the extent that such employees have been appropriately assigned to auditing teams or to otherwise assist internal auditors.

Where the chief audit executive has or is expected to have roles and/or responsibilities that fall outside of internal auditing, safeguards will be established to limit impairments to independence or objectivity.

Internal auditors will:

- Disclose any impairment of independence or objectivity, in fact or appearance, to appropriate parties.
- Exhibit professional objectivity in gathering, evaluating, and communicating information about the activity or process being examined.
- Make balanced assessments of all available and relevant facts and circumstances.
- Take necessary precautions to avoid being unduly influenced by their own interests or by others in forming judgments.

The chief audit executive will confirm to the [board/audit committee/supervisory committee], at least annually, the organizational independence of the internal audit [department/activity].

The chief audit executive will disclose to the [board/audit committee/supervisory committee] any interference and related implications in determining the scope of internal auditing, performing work, and/or communicating results.

Scope of Internal Audit Activities

The scope of internal audit activities encompasses, but is not limited to, objective examinations of evidence for the purpose of providing independent assessments to the [board/audit committee/supervisory committee], management, and outside parties on the adequacy and effectiveness of governance, risk management, and control processes for [name of organization]. Internal audit assessments include evaluating whether:

- Risks relating to the achievement of [name of organization]'s strategic objectives are appropriately identified and managed.
- The actions of [name of organization]'s officers, directors, employees, and contractors are in compliance with [name of organization]'s policies, procedures, and applicable laws, regulations, and governance standards.
- The results of operations or programs are consistent with established goals and objectives.

- Operations or programs are being carried out effectively and efficiently.
- Established processes and systems enable compliance with the policies, procedures, laws, and regulations that could significantly impact [name of organization].
- Information and the means used to identify, measure, analyze, classify, and report such information are reliable and have integrity.
- Resources and assets are acquired economically, used efficiently, and protected adequately.

The chief audit executive will report periodically to senior management and the [board/audit committee/supervisory committee] regarding:

- The internal audit [department/activity]'s purpose, authority, and responsibility.
- The internal audit [department/activity]'s plan and performance relative to its plan.
- The internal audit [department/activity]'s conformance with The IIA's Code of Ethics and *Standards,* and action plans to address any significant conformance issues.
- Significant risk exposures and control issues, including fraud risks, governance issues, and other matters requiring the attention of, or requested by, the [board/audit committee/supervisory committee].
- Results of audit engagements or other activities.
- Resource requirements.
- Any response to risk by management that may be unacceptable to [name of organization].

The chief audit executive also coordinates activities, where possible, and considers relying upon the work of other internal and external assurance and consulting service providers as needed. The internal audit [department/activity] may perform advisory and related client service activities, the nature and scope of which will be agreed with the client, provided the internal audit [department/activity] does not assume management responsibility.

Opportunities for improving the efficiency of governance, risk management, and control processes may be identified during engagements. These opportunities will be communicated to the appropriate level of management.

Responsibility

The chief audit executive has the responsibility to:

- Submit, at least annually, to senior management and the [board/audit committee/supervisory committee] a risk-based internal audit plan for review and approval.

- Communicate to senior management and the [board/audit committee/supervisory committee] the impact of resource limitations on the internal audit plan.
- Review and adjust the internal audit plan, as necessary, in response to changes in [name of organization]'s business, risks, operations, programs, systems, and controls.
- Communicate to senior management and the [board/audit committee/supervisory committee] any significant interim changes to the internal audit plan.
- Ensure each engagement of the internal audit plan is executed, including the establishment of objectives and scope, the assignment of appropriate and adequately supervised resources, the documentation of work programs and testing results, and the communication of engagement results with applicable conclusions and recommendations to appropriate parties.
- Follow up on engagement findings and corrective actions, and report periodically to senior management and the [board/audit committee/supervisory committee] any corrective actions not effectively implemented.
- Ensure the principles of integrity, objectivity, confidentiality, and competency are applied and upheld.
- Ensure the internal audit [department/activity] collectively possesses or obtains the knowledge, skills, and other competencies needed to meet the requirements of the internal audit charter.
- Ensure trends and emerging issues that could impact [name of organization] are considered and communicated to senior management and the [board/audit committee/supervisory committee] as appropriate.
- Ensure emerging trends and successful practices in internal auditing are considered.
- Establish and ensure adherence to policies and procedures designed to guide the internal audit [department/activity].
- Ensure adherence to [name of organization]'s relevant policies and procedures, unless such policies and procedures conflict with the internal audit charter. Any such conflicts will be resolved or otherwise communicated to senior management and the [board/audit committee/supervisory committee].
- Ensure conformance of the internal audit [department/activity] with the *Standards*, with the following qualifications:
    - If the internal audit [department/activity] is prohibited by law or regulation from conformance with certain parts of the *Standards*, the chief audit executive will ensure appropriate disclosures and will ensure conformance with all other parts of the *Standards*.
    - If the *Standards* are used in conjunction with requirements issued by [other authoritative bodies], the chief audit executive will ensure that the internal audit [department/activity] conforms with the *Standards*, even if the internal audit [department/activity] also conforms with the more restrictive requirements of [other authoritative bodies].

Quality Assurance and Improvement Program

The internal audit [department/activity] will maintain a quality assurance and improvement program that covers all aspects of the internal audit [department/activity]. The program will include an evaluation of the internal audit [department/activity]'s conformance with the *Standards* and an evaluation of whether internal auditors apply The IIA's Code of Ethics. The program will also assess the efficiency and effectiveness of the internal audit [department/activity] and identify opportunities for improvement.

The chief audit executive will communicate to senior management and the [board/audit committee/supervisory committee] on the internal audit [department/activity]'s quality assurance and improvement program, including results of internal assessments (both ongoing and periodic) and external assessments conducted at least once every five years by a qualified, independent assessor or assessment team from outside [name of organization].

Approval/Signatures

______________________________ ______________

Chief Audit Executive Date

______________________________ ______________

[Board/Audit Committee/Supervisory Committee] Chair Date

______________________________ ______________

[Chief Executive Officer] Date

About The IIA

The Institute of Internal Auditors (IIA) is the internal audit profession's most widely recognized advocate, educator, and provider of standards, guidance, and certifications. Established in 1941, The IIA today serves more than 190,000 members from more than 170 countries and territories. The association's global headquarters are in Lake Mary, Fla., USA. For more information, visit www.globaliia.org.

About Supplemental Guidance

Supplemental Guidance is part of The IIA's International Professional Practices Framework (IPPF) and provides additional recommended (nonmandatory) guidance for conducting internal audit activities. While supporting the *International Standards for the Professional Practice of Internal Auditing*, Supplemental Guidance is not intended to directly link to achievement of conformance with the *Standards*. It is intended instead to address topical areas, as well as sector-specific issues, and it includes detailed processes and procedures. This guidance is endorsed by The IIA through formal review and approval processes.

For other authoritative guidance materials provided by The IIA, please visit our website at www.globaliia.org/standards-guidance or www.theiia.org/guidance.

Disclaimer

The IIA publishes this document for informational and educational purposes. This guidance material is not intended to provide definitive answers to specific individual circumstances and, as such, is only intended to be used as a guide. The IIA recommends that you always seek independent expert advice relating directly to any specific situation. The IIA accepts no responsibility for anyone placing sole reliance on this guidance.

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March 17

Section 3.0 DUTIES AND RESPONSIBILITIES

Audit Committee Charter

Revised Committee Name Adopted: September 10, 2013; Revised Charter Adopted: November 12, 2013; Revised: September 23, 2014; Reaffirmed: November 13, 2018

I. PURPOSE/ROLE

The Committee will provide assistance to the Board in fulfilling its fiduciary oversight responsibility to the participants, the City of Los Angeles, the investment community, and others relating to LACERS' financial statements, and the legal compliance, ethics programs and other related risks, as established by the Board. In so doing, it is the responsibility of the Committee, with approval of the Board, to maintain free and open communication between the Committee, independent auditors, the internal auditors, and management of LACERS. In discharging its oversight role, the Committee is empowered to investigate any matter brought to its attention with access to all books, records, facilities, and personnel of LACERS.

II. AUTHORITY

The Committee has the authority to direct the Departmental Audit Manager (DAM), external auditors, or consultants to conduct an audit, review, and/or investigation into any matters within the Committee's scope of responsibility. It is empowered to:

- Seek any information it requires from LACERS staff or external parties, all of whom are directed by the Board to cooperate with the Committee's request.
- Appoint, compensate, and oversee the work of all public accounting firms employed by LACERS.
- Resolve any disagreements between LACERS management and the internal or external auditors regarding financial reporting, actuarial audits, or other related matters.
- Retain independent counsel, accountants, or others to advise or assist the Committee in the performance of its responsibilities.
- Approve the consultants, or others retained by the organization to assist in the conduct of an audit, review, and/or special investigation.
- Meet with management, external and internal auditors, or outside counsel as necessary.

III. COMPOSITION OF COMMITTEE

The Committee shall consist of three LACERS Board Members. All members shall be appointed by the LACERS Board President. The LACERS Board President shall appoint a Committee Chair.

The Committee Chair is responsible for setting the agendas for each Committee Meeting. The Chair shall take as an agenda item any matter referred by the LACERS Board. The Chair shall also take as an agenda item any matter submitted by two or more members of the Committee.

IV. FREQUENCY OF MEETINGS

The Committee shall meet no less than four times during the calendar year, or more often as needed. Meetings will be conducted in accordance with open meeting and other applicable laws. Meeting agendas, along with appropriate briefing materials, will be prepared and provided in advance to Committee members and other required attendees. Minutes of the meeting will be prepared and approved by the Committee.

Meeting notices, agendas, and materials will be provided to interested parties in conformance with applicable laws, regulations, customs, and practices. The Committee may invite members of management, external auditors, internal auditors, or other third parties, to attend meetings and provide pertinent information, as the Committee deems appropriate to carry out its responsibilities. The DAM shall support the Committee's activities and ensure appropriate staff and others are available to assist it. The DAM shall review minutes, draft reports, perform research, and render other types of assistance as reasonably requested by the Committee.

V. DUTIES AND RESPONSIBILITIES

The primary responsibility of the Committee is to oversee LACERS' financial reporting process on behalf of the Board and to report the results of its activities to the Board. Management is responsible for preparing LACERS' financial statements, and the independent auditors are responsible for auditing those financial statements. The Committee is responsible for understanding risks affecting LACERS' operations and monitoring how management implements controls to minimize those risks.

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible in order to best react to changing conditions and circumstances. The Committee will take the appropriate actions to set the overall "tone" for quality financial reporting, sound business risk practices, and ethical behavior.

The following are specific responsibilities with respect to LACERS' financial statements, internal controls, internal and external auditors, and compliance with laws and regulations.

A. *Financial Reporting*

- Review significant accounting and reporting issues, including complex or unusual transactions, and recent professional and regulatory pronouncements, and understand their impact on the financial statements.
- Review with management and the external auditors the results of the audit, significant adjustments or revisions to the financial statements, including any difficulties encountered.
- Inquire as to the external auditors' independent judgment about the appropriateness, not just the acceptability, or the accounting principles adopted by the organization and clarity of financial disclosures.
- Review LACERS' annual financial statements and any financial reports related to LACERS submitted to any governmental body; consider whether they are complete, consistent with information known to the Committee, and reflect appropriate accounting principles.
- Review the responsiveness and timeliness of management's actions to address findings and recommendations that resulted from the financial statement audit.
- Review with management and the external auditors all matters required to be communicated to the Committee under general accepted auditing standards.

- Review with the City Attorney-Retirement Division the status of legal matters that may have an effect on the financial statements.

- Review, in consultation with the external auditors and the DAM, the integrity of the organization's financial reporting processes.

B. *Risk Control and Management*

- Review the adequacy of policies and practices designed to avoid or mitigate risks related to benefits administration, investments, and general operations.

- Review the effectiveness of the LACERS' system for assessing, monitoring, and controlling significant risks or exposures.

- Review LACERS systems of internal accounting and financial controls whenever a significant change occurs.

- Review controls over LACERS' information systems, including security access and program change controls as well as contingency plans on an annual basis.

- Review annually the internal control reports of LACERS custodian (Service Organization Control Report) and of the City of Los Angeles management letter.

- Review and forward to the Board all internal and external auditors' significant findings and recommendations, including the management response thereto.

- Make recommendations to the Board for retention of actuarial audit services or other specialized audit services, including review of staff reports pertaining to such services.

C. *Internal Control*

- Consider the effectiveness of the LACERS' internal control system, including information technology security and control.

- Understand the scope of internal and external auditors' review of LACERS' internal control over financial reporting, and obtain reports on significant findings and recommendations, together with management's response.

D. *Internal Audit*

- Approve the LACERS' internal audit charter, and any revisions to the charter as needed.

- Advise on the appointment, replacement, or dismissal of the DAM in consultation with the General Manager as appointing authority.

- Review and recommend to the Board, the approval of a risk-based internal annual audit plan and all major changes to the plan. In consultation with the General Manager, review the DAM's performance relative to such plan.

- Ensure that internal auditors have full, free, and unrestricted access to all functions, documents, information, systems, contractors, consultants, and LACERS' personnel.

Section 3.0 DUTIES AND RESPONSIBILITIES

- Review all internal audit reports, and bring to the attention of the Board any audit issues the Committee determines significant and appropriate for consideration by the Board.
- Obtain and review the quality assurance report for the Internal Audit Section at least once every five years. Review for any concerns noted.
- Delegate to the DAM the oversight and management of the contracts of all public accounting firms hired by LACERS.
- Designate the DAM as the primary point of contact for handling all matters related to audits, examinations, investigations, or inquiries of the City Controller auditors, state and other federal agencies. The DAM will keep the Committee and/or the General Manager informed as appropriate.

E. *Engagement of External Auditors*

- Obtain a clear understanding with management that the independent auditors are ultimately accountable to the Board and the Committee as representatives of LACERS participants. As appropriate, the Committee will recommend to the Board the appointment, retention, or discharge of the external auditors with input from the DAM, the General Manager, and other parties as appropriate.
- Approve all audit and non-audit services to be performed by the external auditors.
- Review the independent auditors' proposed overall scope and approach, including coordination of efforts with internal audit.
- Discuss with management and the independent auditors the adequacy and effectiveness of the accounting and financial controls, including LACERS system to monitor and manage business risk and legal and ethical compliance programs.
- Review and confirm the independence of the external auditors by obtaining a list of all payments to the external auditors (itemizing payments for audit, other attestation projects, and non-audit services provided) and statements from the auditors on relationships between the auditors and any LACERS staff, and discussing these relationships with the auditors.
- Prove guidelines and mechanisms so that no Committee member or LACERS' staff shall improperly influence the external auditors.
- Review with management and the independent auditor the financial statements of LACERS Comprehensive Annual Financial Report.

F. Compliance

- Review the effectiveness of the LACERS' system for monitoring compliance with laws, regulations, contracts, policies, and the results of management's investigation and follow-up (including disciplinary action) of any instances of noncompliance.

- Review the findings of any examinations by regulatory agencies, any auditor observations related to compliance, and the responsiveness and timeliness of management's actions to address the findings/observations.
- Review the process for communicating and monitoring compliance with the code of ethics, code of conduct, and fraud policies.
- Obtain regular updates from management and the City Attorney's Retirement Division regarding compliance matters.

G. *Special Investigations and Whistleblower Mechanism*

- Institute and oversee special investigations as needed.
- Assess and, if appropriate, oversee the creation and maintenance of an appropriate whistleblower mechanism for reporting any fraud, noncompliance, and/or inappropriate activities.
- As appropriate, recommend to the Board the retention of accountants or other specialists to advise the Committee and the Board or assist in the conduct of an investigation.

H. *Other Responsibilities*

- Regularly report to the Board about Committee activities, issues, and related recommendations.
- Provide an open avenue of communication between internal auditors, the external auditors, and the Board.
- Review any other reports that LACERS issues that relate to Committee responsibilities.

VI. CHARTER REVIEW

The Committee and the Board will review this Charter at least every three years to ensure it remains appropriate. The Committee will recommend any changes to the Board for review and approval. The Board may adjust the Charter at any time.

Association of
Public Pension Fund
Auditors

Model Audit Committee Charter

Revised February 2013

Endorsed by:
Association of Public Pension Fund Auditors, Inc.
A Project of the Best Practices Committee

TABLE OF CONTENTS

FOREWORD

The following Model Audit Committee Charter (Model AC Charter) captures many of the best practices used at the present time, February 2013. This Model AC Charter may not encompass all activities considered appropriate to a particular audit committee, nor are all activities identified in this Model AC Charter relevant to every audit committee. Accordingly, this Model AC Charter should be tailored to each audit committee's needs and governing rules. Moreover, as applicable laws, rules, and customs change, the audit committee charter should be updated.

Endorsement by the Association of Public Pension Fund Auditors, Inc. (APPFA) means that this document is intended as a starting point of reference and as a guide to public pension funds in formulating or revising their audit committee charters. To the extent that a public pension fund has unique circumstances, different applications and modifications of the example passages may be desirable.

The first version of this publication was completed in July 2003 and was updated in February 2013. The update was completed by the following members of the Best Practices Committee.

Flerida Rivera-Alsing, Chair	State Board of Administration of Florida
Ryan Babin	Louisiana State Employees Retirement System
Janet Harris	Public School Retirement System of Missouri
Amen Tam	Ontario Municipal Employees Retirement System
Toni Voglino	Maryland State Retirement and Pension System

The February 2013 version of this publication was approved by the APPFA Board in May 2013.

I. PURPOSE

The purpose of the Audit Committee (Committee) is to assist the Board of Trustees (the Board) in fulfilling its fiduciary oversight responsibilities in the areas of:

- Financial Reporting,
- Risk Management,
- Internal Control,
- Internal Audit,
- Engagement of External Auditors,
- Compliance, and
- Special Investigations and Whistleblower Mechanism

II. AUTHORITY

The Committee has the authority to direct the Chief Audit Executive (CAE), external auditors, or consultants to conduct an audit, review, and/or investigation into any matters within the Committee's scope of responsibility. It is empowered to:

- Seek any information it requires from employees – all of whom are directed by the Board to cooperate with the Committee's requests – external auditors, consultants, and external parties.

- Appoint, compensate, and oversee the work of all public accounting firms employed by the organization.

- Resolve any disagreements between management and the external auditors regarding financial reporting.

- Retain independent counsel, accountants, or others to advise or assist the Committee in the performance of its responsibilities.

- Approve the consultants, or others retained by the organization to assist in the conduct of an audit, review, and/or a special investigation.

- Meet with management, external and internal auditors, or outside counsel as necessary.

III. COMPOSITION

The Committee will consist of at least three, and no more than seven, members of the Board. The Board, or its nominating committee, will appoint Committee members and the Committee chair. Members of the Committee shall serve until the next such appointment of the Board or until their successors have been duly elected and qualified. The members of the Committee may be removed, with or without cause, by a majority vote of the Board.

Each Committee member will be independent and will complete an annual independence statement. Each Committee member will have professional experience and expertise in at least one of the following fields: institutional investing, risk management, accounting, auditing, or information technology. All members of the Committee shall have a working familiarity with basic finance and accounting practices. At least one member of the Committee shall be designated as the "financial expert," as defined by applicable legislation and regulation. Committee members shall have other qualifications as the Board determines appropriate.

IV. MEETINGS

The Committee shall meet at least four times a year, with authority to convene additional meetings, as circumstances require. All Committee members are expected to attend each meeting, in person or via tele- or video-conference. Meetings will be conducted in accordance with open meeting and other applicable laws. Meeting agendas, along with appropriate briefing materials, will be prepared and provided in advance to Committee members and other required attendees. Minutes of the meeting will be prepared and approved by the Committee.

Meeting notices, agendas, and materials will be provided to interested parties in conformance with applicable laws, regulations, customs, and practices. The Committee may invite members of management, external auditors, internal auditors, or other third parties, to attend meetings and provide pertinent information, as the Committee deems appropriate to carry out its responsibilities. All members of the Board may attend the meetings of the Committee but may not vote if not a member of the Committee.

To foster open communication, the Committee shall, at least annually, meet separately with the CAE and the external auditors to discuss any matters that the Committee believes should be discussed privately.*{Note: Subject to open meeting laws.}* In addition, the Committee should annually meet with the external auditors to review the organization's financial statements.

V. RESPONSIBILITIES

The Committee will carry out the following responsibilities:

A. *Financial Reporting*

- Obtain information and/or training to enhance the Committee's understanding of the organization's financial reports and the related financial reporting processes.

- Review significant accounting and reporting issues, including complex or unusual transactions, and recent professional and regulatory pronouncements, and understand their impact on the financial statements.

- Review with management and the external auditors the results of the audit, significant adjustments or revisions to the financial statements, including any difficulties encountered.

- Inquire as to the external auditors' independent judgment about the appropriateness, not just the acceptability, of the accounting principles adopted by the organization and clarity of financial disclosures.

- Review the annual financial statements and any financial reports submitted to any governmental body; consider whether they are complete, consistent with information known to the Committee, and reflect appropriate accounting principles.

- Review the responsiveness and timeliness of management's actions to address findings and recommendations that resulted from the financial statement audit.

- Review with management and the external auditors all matters required to be communicated to the Committee under generally accepted auditing standards.

- Review with the General Counsel the status of legal matters that may have an effect on the financial statements.

- Review, in consultation with the external auditors and the CAE, the integrity of the organization's financial reporting processes.

B. *Risk Management*

- Obtain information and/or training to enhance the Committee's understanding of the organization's risks and the related risk management processes.

- Review the adequacy of the organization's policy on risk management.

- Review the effectiveness of the organization's system for assessing, monitoring, and controlling significant risks or exposures.

- Review management's reports on risks and related risks mitigations.

- Hire outside experts and consultants in risk management as necessary.

C. *Internal Control*

- Obtain information and/or training to enhance the Committee's understanding of the organizations internal control system.

- Consider the effectiveness of the organization's internal control system, including information technology security and control.

- Understand the scope of the external auditors' review of the organization's internal control over financial reporting.

- Review internal and external auditors' significant findings and recommendations, together with management's responses.

- Ensure that contracts with external service providers contain appropriate record-keeping and audit language.

D. *Internal Audit*

- Obtain information and/or training to enhance the Committee's understanding of the internal audit function.

- Review and approve the Internal Audit Department Charter annually.

- Review and confirm, through organizational structure and/or by other means, the independence of the internal audit function annually.

- Concur in the appointment, replacement, or dismissal of the CAE.

- Review the performance of the CAE and the internal audit function periodically and concur with the annual compensation and salary adjustment of the CAE.

- Ensure that internal auditors have full, free, and unrestricted access to all functions, documents, information, systems, contractors, consultants, and personnel in the organization.

- Review and approve the internal audit function's staffing plan and budget.

- Review and approve the risk-based internal audit annual plan.

- Receive and review all internal audit reports.

- Review the responsiveness and timeliness of management's follow-up activities pertaining to all reported findings and recommendations.

- Bring to the attention of the Board any audit issues the Committee determines significant and appropriate for consideration by the Board.

- On a regular basis, meet separately with the CAE to discuss any matters that the Committee or internal audit believes should be discussed privately. *{Subject to open meeting laws.}*

- Obtain and review the quality assurance report for the Internal Audit Department at least once every five years. Review for any concerns noted.

- Delegate to the CAE the oversight and management of the contracts of all public accounting firms hired by the organization.

- Designate the CAE as the primary point of contact for handling all matters related to audits, examinations, investigations or inquiries of the state auditor, and other state or federal agencies.

E. *Engagement of External Auditors*

- Obtain information and/or training to enhance the Committee's understanding of the organization's financial statements audit and the role of external auditors.

- Approve the appointment, retention, or discharge of the external auditors. Obtain input from the CAE, management, and other parties as appropriate.

- Approve all audit and non-audit services to be performed by the external auditors.

- Review the external auditors' proposed audit scope and approach, including the coordination of efforts with internal audit.

- Review and confirm the independence of the external auditors by obtaining statements from the auditors on relationships between the auditors and the organization for all audit and non-audit services.

- On a regular basis, meet separately with the external auditors to discuss any matters that the Committee or auditors believe should be discussed privately. *{Note: Subject to open meeting laws.}*

- Provide guidelines and mechanisms so that no Committee member or organization staff shall improperly influence the external auditors.

- Obtain and review annually a list of all payments to the external auditors. The list should separately disclose the payment for the financial statements audit, other attestation projects, and non-audit services provided.

- Obtain and review the peer review report for the external audit firms on a periodic basis. Review for any concerns noted.

F. Compliance

- Review the effectiveness of the organization's system for monitoring compliance with laws, regulations, contracts, and policies and the results of management's investigation and follow-up (including disciplinary action) of any instances of noncompliance.

- Review the findings of any examinations by regulatory agencies, any auditor observations related to compliance, and the responsiveness and timeliness of management's actions to address the findings/observations.

- Review the process for communicating and monitoring compliance with the code of ethics, code of conduct, and fraud policies.

- Obtain regular updates from management and organization legal counsel regarding compliance matters.

G. Special Investigations and Whistleblower Mechanism

- Institute and oversee special investigations, as needed.

- Ensure the creation and maintenance of an appropriate whistleblower mechanism for reporting any fraud, noncompliance, and/or inappropriate activities.

- Retain independent counsel, accountants, or other specialists to advise the Committee or assist in the conduct of an investigation.

H. Other Responsibilities

- Report at least annually to the Board the Committee's activities, audit issues, and related recommendations.

- Confirm annually that all responsibilities outlined in this Model AC Charter have been carried out.

- Review and assess annually the adequacy of this Model AC Charter; request Board approval for proposed changes, and ensure appropriate disclosure as may be required by law or regulation.

- Evaluate annually the Committee's and individual member’s performance and report the results of the evaluation to the Board.

- Provide an open avenue of communication between the internal auditors, external auditors, management, and the Board.

- Perform other activities related to this Model AC Charter as requested by the Board.

Attachment 6

VI. SIGNATURE PAGE

This Model AC Charter was adopted by the Committee on (date) and approved by the Board. This Model AC Charter is effective this day and is hereby signed by the following persons who have authority and responsibilities under this Charter.

Chair, Audit Committee — Date

Chair, Board of Trustees — Date

REFERENCES

The Institute of Internal Auditors’ Model Audit Committee Charter

Audit Committee Charter of the various public pension fund systems who are members of APPFA

Attachment 6

Association of
Public Pension Fund
Auditors

PO Box 16064 • Columbus, OH 43216-6064
www.appfa.org

BENEFIT PAYMENTS APPROVED BY GENERAL MANAGER: ITEM X-A

Pursuant to the authority delegated to the General Manager under Board Rule GMA 1, General Manager Authorization, adopted by the Board of Administration on June 14, 2016, the following benefit payments have been approved by the General Manager:

SERVICE RETIREMENTS

Member Name	Service	Department	Classification
Agravante, Mercyrose A	10	Office of Finance	Accounting Clerk
Aguilar, Feliciano	21	Dept. of Airports	Window Cleaner/Airport
Aguirre, David Clemente	34	Police Dept.	Ch Security Officer
Alecxih, Lu L	23	Dept. of Airports	Sr Admin Clerk
Alfaro, Andres C	17	Dept. of Transportation	Asst Signal Sys Elect
Alonzo Lundgren, May Mia	31	PW - Methods Standards	Sr Systems Analyst
Ayala, Alvaro	15	Dept. of Airports	Custodian Airport
Baker, Steven F	31	Harbor Dept.	Sr Personnel Analyst
Beasley, Michelle A	35	Dept. of Airports	Airport Police Ofcr
Beh, Richard G	19	Dept. of Airports	Build Operating Engr
Bergeson, Robert R	25	Employee Relations Board	Exec Dir Empl Rel Board
Bergner, William Richard	18	Police Dept. - Civilian	Polygraph Examiner
Bowers, Wendell L	35	Dept. of Animal Svcs.	Sr Animal Cntrl Ofcr
Buising, Armando B	12	Dept. of Transportation	Accountant
Canada, Maria Christine	12	Police Dept. - Officers	Police Officer
Castillo, Carlos E	10	Harbor Dept.	Carpenter
Chiu, Rafael Hoo	17	PW - Sanitation	Env Compliance Insp
Cooksey, Laron L	30	GSD - Standards	Drill Rig Operator
Cordova, Danny	10	PW - Sanitation	W/Wtr Trmt Oper
Coroalles, Tony	2	Dept. of Rec. & Parks	Asst Gen Mgr Rec & Pks
Cuevas, Santiago	34	Dept. of Rec. & Parks	Sr Recreation Dir
Davis, James Allen	32	Harbor Dept.	Harbor Engineer
Desir, Stanley	23	Dept. of Aging	Management Analyst
Diaz, Isidro	15	GSD - Public Bldgs.	Vocational Worker
Drew, Debra A	34	GSD - Bldg. Svcs.	Sr Administrative Clerk
Eason, Tafalla Nefertari	24	ITA	Sr Administrative Clerk
Evans, Harold L	38	Dept. of Airports	Airport Police Sgt
Firoozabadi, Charlie Rajabi	26	ITA	Commun Engrg Assoc
Flemings, Cheryl R	38	Fire Dept. - Civilian	Payroll Supervisor
Francisco, Fernando C	17	Police Dept. - Civilian	Sr Administrative Clerk
Garcia, Ruben Michael	34	Police Dept. - Civilian	Sr Administrative Clerk
Garcia, Tomas	6	Dept. of Rec. & Parks 2	Special Prog Asst
Gerhardt, Newton Wentworth	19	Dept. of Bldg. & Safety	Sr Build Mech Inspectr
Gosden, Susan M	34	LA Housing Dept.	Sr Mgmt Analyst
Grierson, Phyllis A	30	Dept. of R&P Full-Time	Sr Recreation Dir

Halverson, William D	30	Dept. of Transportation	Sr Mgmt Analyst
Harris, Benjamin	15	Police Dept. - Civilian	Police Service Rep
Hayes, June Marie	29	Dept. of Transportation	Traf Officer
Hayes, Susan Leigh	16	Personnel Dept.	Background Investgr
Hernandez, Manolito Domingo	15	Police Dept. - Civilian	Detention Officer
Hinojosa, Sergio	34	Dept. of Rec. & Parks	Sandblast Operator
Holloway, Lisa L	34	Dept. of Airports	Exec Admin Asst
Howard, Ronald J	22	Dept. of Rec. & Parks	Gardener Caretaker
Jenoure, Heather Patricia	33	ITA	Info System Mgr
Jessop, Ernest K	36	PW - Sanitation	Equipment Supervisor
Joe, Minsoo	31	Police Dept. - Civilian	Pr Clerk Police
Johnson, Richard	27	ITA	Sr Computer Operator
Kim, Yoon O	30	PW - Contract Admin	Sr Constr Inspector
Koutris, Anthony G	20	City Attorney's Office	Deputy City Atty
Lechuga, Margaret	16	City Attorney's Office	Legal Clerk
Lee, Tony C	40	PW - Engineering	Architect
Levitan, Diane	19	Personnel Dept.	Occupational Psychol
Lopez, Carlos	30	Police Dept. - Civilian	Municipal Police Sergeant
Lopez, Carlos E	28	PW - Engineering	Survey Party Chief
Lugo, Luis M	25	PW - St. Maint. - General	St Svcs Supvr
Lujan, Teresa	34	City Attorney's Office	Deputy City Atty
Maclellan, James William	25	Harbor Dept.	Dir Of Port Mrktng
Maiberger, Kevin	16	Police Dept. - Civilian	Police Service Rep
Mellon, Louis L	28	Dept. of Rec. & Parks	Sr Recreation Dir
Menard, Judy A	7	Dept. of Airports	Airport Guide
Messano, Neil A	30	Controller's Office	Fiscal Systems Spec
Miranda, Gaspar	7	Dept. of Rec. & Parks 2	Special Prog Asst
Mustafa, Johnnetta Renee	38	GSD - Prima Project	Sr Systems Analyst
Nava, Jose D	35	PW - St. Maint. - General	Cement Finisher
Nguyen, Christine	18	City Admin Officer	Sr Administrative Clerk
Nobregas, Barbara H	34	Fire & Police Pensions	Management Analyst
Novak, Patricia R	52	Dept. of Bldg. & Safety	Administrative Clerk
Obacz, Reid F	34	GSD - Bldg. Svcs.	Sr Electrician
Okimoto, Keiji	55	PW - Engineering	Structrl Engrg Assc
Paragas, Elsa P	33	Harbor Dept.	Real Estate Assoc
Parker, Carol Ann	25	PW - Sanitation	Environmental Spec
Pasos, John	17	PW - Resurf & Reconstr	Cement Finisher
Patterson, Dale Mark	3	GSD - Printing Revolving	Dup Mach Operator
Peltier, Steven	29	Dept. of Airports	Security Officer
Perez, Daniel	32	Dept. of Airports	Pr Constr Inspector
Power, Robert K	32	GSD - Fleet Services	Heavy Duty Equip Mech
Ramirez, Judith A	32	Office of Finance	Tax Complnce Ofcr
Rara, Rolando B	30	Dept. of Transportation	Transp Engrg Aide
Reynolds, Rufus Joseph	29	Dept. of Airports	Custodian Supervisor
Rinaldi, Francesco	31	PW - Contract Admin	Ch Constr Inspector

Rincon, Santos R	30	Dept. of Rec. & Parks	Gardener Caretaker
Rios, Lisa Margarita	30	Police Dept. - Civilian	Police Service Rep
Rivera, Mariana M	32	Fire Dept. - Civilian	Sr Mgmt Analyst
Ruiz, Angel	31	Police Dept. - Civilian	Security Officer
Rush, Leslie M	33	Office of Finance	Tax Complnce Ofcr
Sarmiento, Ellen A	36	City Attorney's Office	Sr Asst City Atty
Schwebke, Rickie L	18	GSD - Fleet Services	Equipmnt Mechanic
Sinohue, David	36	Dept. of Transportation	Traf Pnt Sign Post
Smith, Shannon Elaine	22	Police Dept. - Civilian	Sr Admin Clerk
Sogules, Bob Irigha	25	Police Dept. - Civilian	Sr Systems Analyst
Stillinger, Jeffrey Eugene	35	PW - Sanitation	W/Wtr Trmt Oper
Strother, David Sherwood	35	Library Dept.	Administrative Clerk
Telles, Michael A	22	Dept. of Airports	Airport Police Sgt
Tesfai, Fessehaie	32	PW - Engineering	Civil Engrg Assoc
Tinniste, Eric	30	Dept. of Airports	Instrument Mech - Airport
Van Vuren, Linda A	14	Fire Dept. - Civilian	Senior Clerk Typist
Vaughn, Neil Andrew	18	Controller's Office	Fiscal Systems Spec
Villanueva, Laura Nagahama	31	PW - Engineering	Sr Administrative Clerk
Vinson, Nelson S	26	Dept. of Transportation	Internal Auditor
Vizcarra, Maria C	20	Dept. of Airports	Building Repairer
Wade, Mario V	32	Dept. of Airports	Airport Police Ofcr
Watson, Mark Charles	31	Dept. of Transportation	Traf Officer
Watts, Larklyn Lazette	31	Police Dept. - Civilian	Forensic Prnt Spec
Wesdy, Theodore	30	Dept. of Bldg. & Safety	Safety Engr Elevators
Wolf, Maria D	7	Dept. of Airports	Airport Guide
Woods, David Eugene	10	GSD - Fleet Services	Heavy Duty Equip Mech
Yee, Victor K	31	GSD - Finance Projects	Ch Management Analyst
Zenner, Robert Leroy	26	PW - Sanitation	Maint & Constr Helper

BENEFIT PAYMENTS APPROVED BY GENERAL MANAGER: ITEM X-A

Pursuant to the authority delegated to the General Manager under Board Rule GMA 1, General Manager Authorization, adopted by the Board of Administration on June 14, 2016, the following benefit payments have been approved by the General Manager:

Approved Death Benefit Payments

Deceased	Beneficiary/Payee
TIER 1	
Arevalo, Carlos A	Maria B Arevalo for the payment of the Burial Allowance
Austin, Georgia L	Jacqueline Garner for the payment of the Accrued But Unpaid Continuance Allowance
Baldwin, Birdie C	Adeline Alexander for the payment of the Accrued But Unpaid Continuance Allowance
Barabasz, Eugene R	Ellen R Barabasz for the payment of the Accrued But Unpaid Vested Retirement Allowance Burial Allowance
Bornson, Ingvar N	Yayoko Bornson for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Bosarreyes, Ubaldino	Melvin A Bosarreyes for the payment of the Burial Allowance

Brooks, Harold (Deceased Active)	Kevin Brooks for the payment of the Accumulated Contributions
Broom, Doris	Jacklon Broom for the payment of the Accrued But Unpaid Continuance Allowance
Buffaloe, Ronald Everett	Sandra E Buffaloe for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Burdette, Odis T	Lois A Burdette for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Campbell, Alan D (Deceased Active)	William Andrew Sollars for the payment of the Service Retirement Survivorship Allowance
Carlisle Pearl, Yolanda D (Deceased Active)	Leonard Pearl for the payment of the Accumulated Contributions Texanna Carlisle for the payment of the Accumulated Contributions
Collins, Geraldine	Felix J Collins for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Cook, Esther K	William E Cook for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

Cook, Hurley S	Carstella Cook for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Cox, Henry J	Ricardo Cox for the payment of the Accrued But Unpaid Continuance Allowance
Craig, Thomas J	James P C Craig for the payment of the Accrued But Unpaid Continuance Allowance
Dantzler, Alex	Reola Maxine Dantzler for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Davidson, Michael J	Lillian N Kirsch for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
	William Kirsch for the payment of the Accrued But Unpaid Service Retirement Allowance
De Grandis Grant, Kathy May	Denise Lee Brown for the payment of the Burial Allowance
	Glenn C Grant for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Escajeda, Roberto R	Maria D Escajeda for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

Escandon, Ignacio A	Elizabeth Escandon for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
	Sophie Vargas for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Evans, Michael F	Delores Evans for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Falcis, Luisita G	Erwin G Falcis for the payment of the Accrued But Unpaid Continuance Allowance
Famous, Vernon Lee	Glenne Belton for the payment of the Burial Allowance
Farrell, Christine	Justine Martino for the payment of the Accrued But Unpaid Disability Continuance Allowance
Frasier, Molly	Myra Krause for the payment of the Accrued But Unpaid Continuance Allowance
Gonzalez, Flor	Alice Gonzalez for the payment of the Accrued But Unpaid Service Retirement Allowance
	Dolores Garcia for the payment of the Burial Allowance

Grazer, John P	John P Grazer for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Grider, Charles	Lucas Shepherd for the payment of the Accrued But Unpaid Service Retirement Allowance Valesca Shepherd for the payment of the Accrued But Unpaid Service Retirement Allowance
Hamilton, Bessie	Melissa C Gardner for the payment of the Accrued But Unpaid Continuance Allowance
Hargaden, Thomas J	Eric Noel Hargaden for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Harris, Leroy	Marsha S Harris for the payment of the Burial Allowance
Harris, Lucy B	Dolly D Harris for the payment of the Accrued But Unpaid Continuance Allowance
Hinkson, Winfield A	Saffeya Hinkson for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Hollis, Simon	Lisa D Hollis for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

Hongo, Louise T	Eldon N Hongo for the payment of the Accrued But Unpaid Service Retirement Allowance
Imp, Andrew R	Sau Doan Imp for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Keisner, Larry G	Brian Keisner for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Lai, Christophe	Catherine S Lai for the payment of the Accrued But Unpaid Service Retirement Allowance
Laurich, Joseph A	Lindsay R Laurich for the payment of the Burial Allowance
Locatelli, William	Robert Locatelli for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Lopez, Joshua O	Maria Cruz Lopez for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

Lopez, Mary Ann C (Deceased Active)	Richard J Lopez for the payment of the Accumulated Contributions Ronald Lopez for the payment of the Accumulated Contributions Sandra Tobin for the payment of the Accumulated Contributions
Machunis, Charlene T	Mary K Machunis for the payment of the Accrued But Unpaid Continuance Allowance
Macon, Ronald C	Boris Macon for the payment of the Burial Allowance
Madison, Agnes F	Arthur Madison for the payment of the Burial Allowance
Mauleon, Carmelita G	Ramon Mauleon for the payment of the Accrued But Unpaid Continuance Allowance
Megliorino, Charles	Chris Megliorino for the payment of the Accrued But Unpaid Vested Retirement Allowance Burial Allowance
Miller, A D	Toney Miller for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Montoya, Patricia R	Robin Atkins for the payment of the Accrued But Unpaid Service Retirement Allowance

Nadalsky, Margie	Karen Lee Nadalsky for the payment of the Accrued But Unpaid Continuance Allowance Sharon Dee Monroe for the payment of the Accrued But Unpaid Continuance Allowance
Navarro, Phillip T (Deceased Active)	Phillip Thomas Navarro for the payment of the Limited Pension
Nonno, James A	Barbara Nonno for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Obrymski, Paul T	Peggy A Obrymski for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Overton, Stephen Edward	Linda Lou Overton for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Parker, Dorothy N	Lynn Diane Krause for the payment of the Accrued But Unpaid Continuance Allowance
Perez, Jorge F	Astrid Ruelas Franquez for the payment of the Burial Allowance
Prada, Alfredo	Maria E Prada for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance

Reed, John L	Denise E Reed for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance
Reitzel, Joan M	Joan M Reitzel Revocable Trust for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Rocha, Eduardo P	Gerardo L Rocha for the payment of the Burial Allowance
Rojo, Rosalia (Deceased Active)	Maria Del Pilar Votion for the payment of the Accumulated Contributions
	Priscilla Irene Votion for the payment of the Accumulated Contributions
Rosendahl, William Joseph	Hedi El Kholti for the payment of the Accrued But Unpaid Disability Retirement Allowance Unused Contributions
Sanchez, Gilbert	Connie Sanchez for the payment of the Accrued But Unpaid Service Retirement Allowance
	Gilbert Sanchez for the payment of the Accrued But Unpaid Service Retirement Allowance
	John Sanchez for the payment of the Accrued But Unpaid Service Retirement Allowance
Sasaki, Hiroyuki H	Katherine Sasaki for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance

Savone, Ivonne D	Raymond Terrell Bagley for the payment of the Accrued But Unpaid Service Retirement Allowance Unused Contributions
Scates, Lucy	Allen Scates for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Shimabukuro, Robert	Lark Shimabukuro Krug for the payment of the Accrued But Unpaid Continuance Allowance
Spencer, Craig W	Lori A Hewitt for the payment of the Accrued But Unpaid Service Retirement Allowance
	Ronald Frank Spencer for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Stover, Maggie L	Daryl R Stover for the payment of the Accrued But Unpaid Continuance Allowance
	Valerie D Stover for the payment of the Accrued But Unpaid Continuance Allowance
Streicher, Selma	Sondra Ben Na Eim for the payment of the Burial Allowance
Sugita, Akira	Akira Sugita Living Trust for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

Tack, Martin Leroy	Cheryl D Tack for the payment of the Burial Allowance
Tidwell, William S	Rebecca L Tidwell for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Tosti, Glenda J	Michael S Tosti for the payment of the Accrued But Unpaid Vested Retirement Allowance Burial Allowance
Trammell, Olysee	Michael W Trammell for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
	Otis Trammell for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
	Tammy Trammell- Howlett for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Turner, Julia E	Betty R Norman for the payment of the Accrued But Unpaid Service Retirement Allowance
Valencia, Arsenio C	Lucita S Valencia for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Walters, James R	Julie Andrews for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance

Webb, Russell E	Leshia M Lee Webb for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Wikstrom, Edwin A	Edwin A Wikstrom for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Woodard, Betty A	Marcus B Woodard for the payment of the Accrued But Unpaid Continuance Allowance

TIER 3

None

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
Securing Your Tomorrows

Agenda of: **NOVEMBER 13, 2018**

Item No: **X-B**

MARKETING CESSATION REPORT
NOTIFICATION TO THE BOARD

The Board's Marketing Cessation Policy was adopted in order to prevent and avoid the appearance of undue influence on the Board or any of its Members in the award of investment related and other service contracts. Pursuant to this Policy, this notification procedure has been developed to ensure that Board Members and staff are regularly apprised of firms for which there shall be no direct marketing discussions about the contract or the process to award it; or for contracts in consideration of renewal, no discussions regarding the renewal of the existing contract.

Firms listed in Attachments 1 and 2 are subject to limited communications with Board Members and staff pursuant to the Policy and will appear and remain on the list, along with the status, from the first publicized intention to contract for services through the award of the contract. Lists of current LACERS contracts are on file in the Board office and are available upon request.

Attachments: 1) Contracts Under Consideration for Renewal
2) Active RFPs and RFQs

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
CONTRACTS LIST FOR THE NOVEMBER 13, 2018 BOARD MEETING

ATTACHMENT 1

CONTRACTS UNDER CONSIDERATION FOR RENEWAL

NO.	VENDOR / CONSULTANT	DESCRIPTION	INCEPTION DATE	EXPIRATION DATE	MARKETING CESSATION STATUS	RESTRICTED PERIOD*	
						START	END
RETIREMENT SERVICES							
1	Frasco Investigative Services	Investigative Services	9/1/2014	8/31/2018	Board approved renewal on 8/14/2018; Contract under review for execution.	5/31/2018	11/30/2018
2	TruView BSI LLC	Investigative Services	Pending	Pending	Board awarded new contract on 8/14/2018; Contract under review for execution.	5/31/2018	11/30/2018
ADMINISTRATIVE SERVICES							
3	Travers Cresa	Real Estate Services	Pending	Pending	Board awarded new contract on 11/28/2017; Contract under review for execution.	10/1/2017	11/30/2018
CITY ATTORNEY							
4	Reed Smith	Outside Tax Counsel	Pending	Pending	Board awarded new contract on 9/11/2018; Contract under review for execution.	6/27/2018	12/11/2018
5	Ice Miller	Outside Tax Counsel	Pending	Pending	Board awarded new contract on 9/11/2018; Contract under review for execution.	6/27/2017	12/11/2018

HEALTH BENEFITS ADMINISTRATION							
6	Anthem 2019	Medical HMO & PPO	1/1/2019	12/31/2019	Board approved on 8/28/2018; Contract under review for execution.	9/30/2018	3/31/2019
7	Kaiser 2019	Medical HMO	1/1/2019	12/31/2019	Board approved on 8/28/2018; Contract under review for execution.	9/30/2018	3/31/2019
8	SCAN 2019	Medical HMO	1/1/2019	12/31/2019	Board approved on 8/28/2018; Contract under review for execution.	9/30/2018	3/31/2019
9	UnitedHealthcare 2019	Medical HMO	1/1/2019	12/31/2019	Board approved on 8/28/2018; Contract under review for execution.	9/30/2018	3/31/2019
10	Delta Dental 2019	Dental PPO and HMO	1/1/2019	12/31/2019	Board approved on 8/28/2018; Contract under review for execution.	9/30/2018	3/31/2019
11	Anthem Blue View Vision 2019	Vision Services Contract	1/1/2019	12/31/2019	Board approved on 8/28/2018; Contract under review for execution.	9/30/2018	3/31/2019

*RESTRICTED PERIOD

Start Date - The estimated start date of the restricted period is three (3) months prior to the expiration date of the current contract. No entertainment or gifts of any kind should be accepted from the restricted source as of this date. Firms intending to participate in the Request for Proposal process are also subject to restricted marketing and communications.

End Date - The estimated end date of the restricted period is three (3) months following the expiration date of the current contract. For investment-related contracts, the estimated end date is normally six (6) months following the expiration of the current contract. For health carrier contracts, the estimated end date is normally one (1) year following the expiration of the current contract. Estimated dates are based on contract negotiation periods from prior years.

ATTACHMENT 2

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
CONTRACTS LIST FOR THE NOVEMBER 13, 2018 BOARD MEETING

ACTIVE RFPs AND RFQs*

NO.	DESCRIPTION	MARKETING CESSATION STATUS AND VENDOR RESPONSES
INVESTMENTS		
1	Investigative Services	**RFP Release Date:** April 4, 2018
		Submission Deadline: April 26, 2018
		Status: Board awarded contracts to TruView BSI, LLC and Frasco.
		List of Respondents: Digistream Investigations, Frasco, G4S Compliance & Investigations, TruView BSI, LLC
2	Outside Tax Counsel	**RFP Release Date:** June 27, 2018
		Submission Deadline: July 20, 2018
		Status: Board awarded contracts to Reed Smith, LLP and Ice Miller, LLP.
		List of Respondents: Best Best & Krieger, Attorneys At Law, Ice Miller, LLP, Kutak Rock, and Reed Smith, LLP

* RESTRICTED PERIOD FOR REQUEST FOR PROPOSAL OR REQUEST FOR QUALIFICATIONS:

Start Date - The restricted period commences on the day the Request for Proposal is released.

End Date - The restricted period ends on the day the contract is executed.