AGENDA

A REGULAR MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

9:00 A.M., WEDNESDAY, JANUARY 8, 2020

The Board may take action on any item on the agenda, and agenda items may be taken out of order.

I. CALL TO ORDER

II. ELECTIONS
(Election of Chair, Vice Chair, Secretary, Joint Organizational Governance Committee and Audit Committee Trustees)

Election of appointed or retired trustees to the Joint Organizational Governance Committee or Audit Committee or the appointment of appointed or retired trustees to any committee will entitle such trustees to an additional $100 stipend for each committee meeting. Such trustees also receive a $100 stipend for each Board meeting they attend, up to a total of $500 per month for all Board and committee meetings. Such stipends will be reported on FPPC Form 806 and posted on lacera.com.

The Board and committee service of active general and safety member elected trustees is part of their County employment and no additional compensation is paid for any aspect of their service as a trustee.

III. PLEDGE OF ALLEGIANCE

IV. APPROVAL OF MINUTES

A. Approval of the Minutes of the Regular Meeting of December 11, 2019

V. REPORT ON CLOSED SESSION ITEMS

VI. PUBLIC COMMENT

VII. CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated December 18, 2019)

VIII. CHIEF INVESTMENT OFFICER'S REPORT

IX. NON-CONSENT ITEMS

A. Recommendation as submitted by Santos H. Kreimann, Chief Executive Officer, Jon Grabel, Chief Investment Officer and Ted Granger, Interim Chief Financial Officer: That the Board:

1. Adopt the economic assumptions identified as Alternative #2 on page 17 of the draft 2019 Investigation of Experience for Retirement Benefit Assumption Report (2019 Experience Study), as submitted by the plan actuary (Milliman). This option (combined with 25 year amortization for existing layers) is labeled as Alternative 2a on the Milliman presentation slides to be shown and discussed at the upcoming January 8, 2020 Board of Investments (BOI) meeting. The economic assumptions recommended for adoption by LACERA staff and Milliman includes a 6.75% investment return; 3.00% general wage growth; 2.50% price inflation rate and 3.00% payroll growth factor.

2. Adopt a 25-year amortization period for existing annual payment layers and a new 20-year amortization schedule for all payment layers added in future years.

3. Adopt the demographic assumptions that allow for use of revised mortality tables; larger merit salary increases; modified rates of retirement; small adjustments to the termination and disability assumptions; and other minor changes. The recommended changes are more fully described in Milliman's draft 2019 Experience Study report.

4. Adopt the phase-in of increases in the employer contribution rates over a three-year period to help fulfill LACERA's fiduciary duty of legal authority to minimize the impact on employer contributions in the short-term.

IX. NON-CONSENT ITEMS (Continued)

5. Delegate authority to the Chief Executive Officer working in concert with LACERA's General Counsel, the Interim Chief Financial Officer and Chief Investment Officer to ensure the actuarial assumptions adopted by the BOI Trustees, and as more fully detailed in Appendix A of the 2019 Experience Study report, are incorporated in Milliman's calculation of plan liabilities presented in the 2019 Actuarial Valuation of Retirement Benefits report. (Memo dated December 30, 2019).

For Information Only as submitted by Steven P. Rice, Chief Counsel, regarding the Phase-In of Employee Contribution Rates.
(Memo dated December 23, 2019)

B. Recommendation as submitted by Jude Perez, Principal Investment Officer, Esmeralda del Bosque, Senior Investment Officer, Scott Zdrazil, Senior Investment Officer, Dale Johnson, Investment Officer and John Kim, Senior Investment Analyst: That the Board approve appointing:

a. MSCI Analytics to provide total Fund risk services; and
b. MSCI ESG Research LLC and Sustainalytics US Inc. for ESG data and analytics, as well as Trucost-S&P global for climate-related data.

(Memo dated December 30, 2019)

X. REPORTS

A. Vision 2020: Investment Division Work Plan and Strategic Initiatives Update
Jon Grabel, Chief Investment Officer
(Memo dated December 30, 2019)

B. Emerging Manager Policy Review – Part 3
Jon Grabel, Chief Investment Officer
Leandro Festino, Meketa
Ted Wright, Principal Investment Officer
Vache Mahseredjian, Principal Investment Officer
(Memo dated December 20, 2019)

X. REPORTS (Continued)

C. Private Equity Portfolio Update
Christopher Wagner, Principal Investment Officer
(Memo dated December 26, 2019)

D. 2020 Board Election Process
Steven P. Rice, Chief Counsel
(Memo dated December 23, 2019)

E. Real Estate Process Workflow Findings – Update
Esmeralda del Bosque, Senior Investment Officer
Trina Sanders, Investment Officer
Cindy Rivera, Senior Investment Analyst
(For Information Only) (Memo dated December 20, 2019)

F. Private Equity Secondary Sale Update
Christopher Wagner, Principal Investment Officer
David Simpson, Investment Officer
(For Information Only) (Memo dated December 20, 2019)

G. Investment Policy Statement – Update
Jude Perez, Principal Investment Officer
(For Information Only) (Memo dated December 20, 2019)

H. Fair Political Practices Commission Form 806 – Agency Report of Public Official Appointments
Jill Rawal, Staff Counsel
(For Information Only) (Memo dated December 30, 2019)

I. 2019 Third Quarter –Hedge Fund Performance Report
James Rice, Principal Investment Officer
Quoc Nguyen, Investment Officer
(For Information Only) (Memo dated December 16, 2019)

J. Monthly Education and Travel Report for November 2019
Ted Granger, Interim Chief Financial Officer
(For Information Only) (Public Memo dated December 20, 2019)
(Confidential Memo dated December 20, 2019 – Includes Anticipated Travel)

X. REPORTS (Continued)

K. Monthly Status Report on Board of Investments Legal Projects
Steven P. Rice, Chief Counsel
(For Information Only) (Memo dated December 31, 2019)

L. December 2019 Fiduciary Counsel Contact and Billing Report
Steven P. Rice, Chief Counsel
(For Information Only) (Privileged and Confidential)
(Attorney-Client Communication/Attorney Work Product)
(Memo dated December 31, 2019)

XI. ITEMS FOR STAFF REVIEW

XII. GOOD OF THE ORDER
(For information purposes only)

XIII. EXECUTIVE SESSION

A. Conference with Staff and Legal Counsel to Consider the Purchase or Sale of Particular, Specific Pension Fund Investments
(Pursuant to California Government Code Section 54956.81)

1. Syndicated Bank Loan Manager Search
2. Montefiore Investment V S.L.P.
3. Credit Structure Review – Part 2

XIV. ADJOURNMENT

Documents subject to public disclosure that relate to an agenda item for an open session of the Board of Investments that are distributed to members of the Board of Investments less than 72 hours prior to the meeting will be available for public inspection at the time they are distributed to a majority of the Board of Investments Members at LACERA's offices at 300 N. Lake Avenue, Suite 820, Pasadena, CA 91101, during normal business hours of 9:00 a.m. to 5:00 p.m. Monday through Friday.

Persons requiring an alternative format of this agenda pursuant to Section 202 of the Americans with Disabilities Act of 1990 may request one by calling the Board Offices at (626) 564-6000, Ext. 4401/4402, from 8:30 a.m. to 5:00 p.m. Monday through Friday, but no later than 48 hours prior to the time the meeting is to commence. Assistive Listening Devices are available upon request. American Sign Language (ASL) Interpreters are available with at least three (3) business days notice before the meeting date.

MINUTES OF THE REGULAR MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

9:00 A.M., WEDNESDAY, DECEMBER 11, 2019

PRESENT: Shawn Kehoe, Chair

Ronald Okum, Vice Chair (Left the Board meeting at 12:30 p.m.)

Wayne Moore, Secretary (Left the Board meeting at 12:30 p.m.)

Alan Bernstein

David Green (Left the Board meeting at 12:30 p.m.)

Keith Knox

David Muir

Gina V. Sanchez (Left the Board meeting at 12:30 p.m.)

Herman B. Santos (Left the Board meeting at 12:30 p.m.)

STAFF ADVISORS AND PARTICIPANTS

Santos H. Kreimann, Chief Executive Officer

Jonathan Grabel, Chief Investment Officer

Steven P. Rice, Chief Counsel

Christine Roseland, Senior Staff Counsel

Christopher Wagner, Principal Investment Officer

Jim Rice, Principal Investment Officer

Vache Mahseredjian, Principal Investment Officer

Chad Timko, Senior Investment Officer

STAFF ADVISORS AND PARTICIPANTS (Continued)

David Chu, Senior Investment Officer

David Simpson, Investment Officer

Ted Granger, Interim Chief Financial Officer

Didier Acevedo, Investment Officer

Calvin Chang, Senior Investment Analyst

Sabrina Chen, Accountant

Milliman,
Nick Collier, Consulting Actuary
Mark Olleman, Consulting Actuary

Meketa Investment Group
Leandro A. Festino, Managing Principal
Timothy Filla, Managing Principal

StepStone Group LP
Jose Fernandez, Partner

Albourne
James Walsh, Head of Portfolio Advisory
Tom Cawkwell, Partner

SEIU Local 721
Ramon Rubalcava, Director of Member Benefits and Employer Relations

Unite Here Local 11
Jordan Fein

I. CALL TO ORDER

The meeting was called to order at 9:02 a.m., in the Board Room of Gateway Plaza.

II. PLEDGE OF ALLEGIANCE

Mr. Green led the Board Members and staff in reciting the Pledge of Allegiance.

III. APPROVAL OF MINUTES

A. Approval of the Minutes of the Special Meeting of November 20, 2019

Mr. Green made a motion, Mr. Santos seconded, to approve the minutes of the special meeting of November 20, 2019. The motion passed with Mrs. Sanchez and Mr. Bernstein abstaining.

IV. AWARDS

Mr. Kreimann thanked Messrs. Kehoe and Okum for their service and whose terms are ending at the end of the year.

V. REPORT ON CLOSED SESSION ITEMS

Steven Rice, Chief Counsel, reported that:

At the November 20, 2019 Board of Investments meeting, under Agenda item XIV.A.1., the Board met in closed session under Government Code Section 54956.81 to consider the purchase and sale of particular, specific pension fund investments. On a motion by Mr. Santos, seconded by Mr. Muir, the Board voted to suspend new debt investment activity of Barings LLC pending completion of a real estate portfolio review. The motion passed unanimously (roll call) with Messrs. Green, Knox, Okum, Muir and Santos voting yes. Messrs. Bernstein, Kehoe, Moore and Mrs. Sanchez were absent.

Also, at the same meeting on November 20, 2019 under Agenda item XIV.A.3. the Board met in closed session under Government Code Section 54956.81 to

V. REPORT ON CLOSED SESSION ITEMS (Continued)

consider the purchase and sale of particular, specific pension fund investments. As reported out at that meeting, the Board approved a commitment to Revelstoke Capital Partners Single Asset Fund I, L.P. It can now be reported that the amount of the commitment was $60 million.

VI. PUBLIC COMMENT

Mr. Ramon Rubalcava from SEIU Local 721 addressed the Board regarding the Actuarial Assumption Review.

Jordan Fein from Unite Here Local 11 addressed the Board regarding PAI Europe VII investment in Areas, pending labor issues, and the potential effect of those issues on LACERA's investment.

VII. CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated November 22, 2019)

Mr. Kreimann provided a brief presentation on the Chief Executive Officer's Report.

VIII. CHIEF INVESTMENT OFFICER'S REPORT

Mr. Grabel provided a brief presentation on the Chief Investment Officer's Report.

IX. CONSENT ITEMS

A. Recommendation as submitted by Gina Sanchez, Chair, Equities Committee: That the Board approve the 2020 Private Equity Objectives, Policies, and Procedures. (Memo dated November 22, 2019)

Agenda item IX.A was pulled for discussion.

IX. CONSENT ITEMS (Continued)

Mr. Bernstein made a motion, Mr. Kehoe seconded, to approve staff's recommendation in addition to communicating to the Board if there is trustee contact during the deliberation process. The motion passed (roll call) with Messrs., Bernstein, Green, Kehoe, Knox, Muir, Okum and Mrs. Sanchez voting yes and Messrs. Moore and Santos voting no.

Mr. Muir made a motion, Mr. Bernstein seconded, to approve the following agenda items; IX.B., IX.C., IX.D., and IX.E. The motion passed unanimously.

B. Recommendation as submitted by Gina Sanchez, Chair, Equities Committee: That the Board approve the following changes to the Global Equity portfolio structure:

1. Revise LACERA's Global Equity benchmark from the 80% MSCI ACWI IMI Index +20% MSCI World-ex US IMI Index Currency Hedged to the MSCI ACWI IMI Index effective July 1, 2019.

2. Establish market capitalization and regional bands for the Global Equity portfolio relative to the MSCI ACWI IMI Index as follows:

a. Maintain market capitalization exposure of +/- 5 percentage points relative to MSCI ACWI IMI Index for each of the following market capitalization categories: small, mid, and large cap stocks.

b. Maintain U.S. Market, Non-U.S. Developed Markets, and Emerging Markets weights of +/- 5 percentage points relative to the MSCI ACWI IMI Index.

(Memo dated November 22, 2019)

C. Recommendation that the Board approve attendance of Board members at the International Corporate Governance Network Conference on February 25 – 26, 2020 in Seoul, South Korea and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Memo dated December 2, 2019)

IX. CONSENT ITEMS (Continued)

D. Recommendation that the Board approve attendance of Board members at the 2020 SuperReturn Berlin Conference on February 25 – 28, 2020 in Berlin, Germany and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.
(Memo dated December 2, 2019)

E. Recommendation that the Board Approve attendance of Board members at the 2020 SuperReturn China Conference in Beijing,
China on May 6 – 8, 2020 and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.
(Memo dated December 2, 2019)

X. NON-CONSENT ITEMS

A. Recommendation as submitted by Wayne Moore, Chair, Credit and Risk Mitigation Committee; James Rice, Principal; Investment Officer and Chad Timko, Senior Investment Officer: That the Board approve the Minimum Qualifications for a separate account manager to manage a $200 million program of emerging manager hedge funds as amended by the Credit and Risk Mitigation Committee. (Memo dated November 26, 2019)

Messrs. Grabel, Rice and Timko were present and answered questions from

the Board.

Mr. Santos made a motion, Mr. Okum seconded, that the Board approve the Minimum Qualifications for a separate account manager to manage a $200 million program of emerging manager hedge funds as amended by the Credit and Risk Mitigation Committee. The motion passed unanimously.

B. Recommendation as submitted by Santos H. Kreimann, Chief Executive Officer: That the Board review the 2020 meeting calendar and consider rescheduling meeting dates that conflict with a holiday and/or the potential of a lack of quorum. (Memo dated November 27, 2019)

X. NON-CONSENT ITEMS (Continued)

Mr. Kreimann was present and answered questions from the Board.

Mr. Kehoe made a motion, Mr. Bernstein seconded, to schedule the March meeting to March 16, 2020, the May meeting to May 18, 2020 and the November meeting to November 5, 2020. The motion passed unanimously.

XI. REPORTS

A. Actuarial Assumption Review
Ted Granger, Interim Chief Financial Officer
Mark Olleman, Consulting Actuary
Nick Collier, Principal, Consulting Actuary
(Memo dated November 27, 2019)

Mr. Granger and Messrs. Olleman and Collier of Milliman were present and answered questions from the Board.

B. Emerging Manager Policy Review – Part 3
Jon Grabel, Chief Investment Officer
Leandro Festino, Meketa
Ted Wright, Principal Investment Officer
Vache Mahseredjian, Principal Investment Officer
(Memo dated November 27, 2019)

This item will be discussed at the January 2020 Board of Investments meeting.

C. Assembly Bill 2833 Report – Fiscal Year 2019
Jonathan Grabel, Chief Investment Officer
Calvin Chang, Senior Investment Analyst
Sabrina Chen, Investment Accountant
(Memo dated November 26, 2019)

Messrs. Grabel, Chang and Ms. Chen provided a presentation and answered questions from the Board.

XI. REPORTS (Continued)

D. PAI Europe VII Manager Update
Jonathan Grabel, Chief Investment Officer
(Memo dated November 27, 2019)

Mr. Grabel was present and answered questions from the Board.

The following items were received and filed:

E. Real Estate Performance – Second Quarter
John McClelland, Principal Investment Officer
(For Information Only) (Memo dated November 26, 2019)

F. Council of Institutional Investors Joint Letter to Securities and Exchange Commission
Scott Zdrazil, Senior Investment Officer
(For Information Only) (Memo dated November 26, 2019)

G. Semi – Annual Report on Approved Engagements
Barry W. Lew, Legislative Affairs Officer
(For Information Only) (Memo dated November 26, 2019)

H. LACERA Quarterly Performance Book
Jude Perez, Principal Investment Officer
(For Information Only) (Memo dated November 27, 2019)

I. Monthly Education and Travel Report for October 2019
Ted Granger, Interim Chief Financial Officer
(For Information Only) (Public Memo dated November 25, 2019)
(Confidential Memo dated November 25, 2019 – Includes Anticipated Travel)

1st Quarter Education and Travel Expenditure Reports
Ted Granger, Interim Chief Financial Officer
(For Information Only) (Memo dated November 22, 2019)

J. Monthly Status Report on Board of Investments Legal Projects
Steven P. Rice, Chief Counsel
(For Information Only) (Memo dated December 2, 2019)

XI. REPORTS (Continued)

K. November 2019 Fiduciary Counsel Contact and Billing Report
Steven P. Rice, Chief Counsel
(For Information Only) (Privileged and Confidential)
(Attorney-Client Communication/Attorney Work Product)
(Memo dated November 22, 2019)

XII. ITEMS FOR STAFF REVIEW

In regards to item VII., the Board requested staff look into the accuracy of the CEO Report 10 year total Fund Return percentage, as well as for staff to look into reporting underperforming managers.

In addition, in regards to item XI.A., the Board requested for Milliman to provide additional information prior to the January 2020 meeting and requested information as to whether changes in employee contribution rates can be phased in.

Furthermore, regarding item XI. D., the Board requested for staff to share correspondence related to PAI and Unite Here 11 with the whole Board.

Additionally, in regards to item XI.C., the Board requested for staff to request reimbursement from the state for the expenses associated in finalizing the Assembly Bill 2833 Report.

The Board requested for Barry Lew to reach out to Mr. Roda, LACERA's federal lobbyist in regards to the Government Pension Offset and Windfall Elimination Provision bills.

Lastly, in regards to item XI.I., the Board requested for staff to identify cancelled conferences by host on the report.

XIII. GOOD OF THE ORDER (Continued)
(For information purposes only)

The Board thanked Mr. Okum for his service on the Board of Investments.

Mr. Muir shared his experience attending the RI New York Conference on December 3-5, 2019.

XIV. EXECUTIVE SESSION

(This item was held out of order prior to agenda item XI.)

A. Conference with Legal Counsel – Anticipated Litigation Significant Exposure to Litigation (Pursuant to Paragraph (2) of Subdivision (d) of California Government Code Section 54956.9). Note: These items were held under California Government Code Section 54956.81 as a Conference with Staff and Legal Counsel to Consider the Purchase or Sale of Particular, Specific Pension Fund Investments, and were stated to be reported out under that statute as required under the Brown Act.

1. Wynnchurch Capital Partners V, L.P.

Messrs. Grabel, Wagner, Chang and Jose Fernandez of StepStone Group LP provided a presentation and answered questions from the Board.

Mr. Kehoe made a motion, seconded by Mr. Santos, to approve a commitment of up to $75 million to Wynnchurch Capital Partners V, L.P., which is a value-based middle market buyout manager focused on equity and debt investments of companies headquartered in U.S. and Canada. The motion passed (roll call) with Messrs. Bernstein, Green, Kehoe, Knox, Muir, Okum, Santos and Mrs. Sanchez voting yes. Mr. Moore was not present.

2. Illiquid Credit Investment Manager Search

Messrs. Grabel, Mahseredjian, Acevedo and Timko provided a presentation and answered questions from the Board.

XIV. EXECUTIVE SESSION (Continued)

Mr. Santos made a motion, seconded by Mr. Green, to approve an investment of up to $500 million to Napier Park Global Capital LP to manage a portfolio of illiquid credit assets in a single-investor separate account structure. The motion passed (roll call) with Messrs. Bernstein, Green, Kehoe, Knox, Moore, Muir, Okum, Santos and Mrs. Sanchez voting yes.

3. MBK Partners Fund V, L.P. – (For Information Only)

The Board received a For Information Only item concerning a re-up commitment of $150 million to MBK Partners Fund V, L.P. authorized by the Chief Investment Officer based on his authority under the Private Equity Objective, Policies and Procedures. MBK Partners Fund V targets buyout investments in South Korea, Japan, and Greater China.

B. Public Employee Performance Evaluation
(Pursuant to Paragraph (1) of Subdivision (b) of California Government Code Section 54957)

Title: Chief Counsel

The Board met in Executive Session pursuant to Paragraph (1) of Subdivision (b) of California Government Code Section 54957. There was nothing to report.

(Messrs. Green, Moore, Santos, Okum and Mrs. Sanchez left the meeting at 12:30pm)

XV. ADJOURNMENT

There being no further business to come before the Board, the meeting was Adjourned in memory of Dr. Richard Zapanta and Thomas Rice at 2:28 p.m.

Green Folder Information (Information distributed in each Board Members Green Folder at the beginning of the meeting)

1. Item XI. A. – Milliman Actuarial Assumption Review Slides (Revised Page 11 and New Page 12)

2. Item XIV. B. – Closed Session/Chief Counsel Performance Evaluation (Privileged and Confidential)

WAYNE MOORE, SECRETARY

SHAWN KEHOE, CHAIR

December 18, 2019

TO: Each Trustee
Board of Retirement
Board of Investments

FROM: Santos H. Kreimann SHK
Chief Executive Officer

SUBJECT: **CHIEF EXECUTIVE OFFICER'S REPORT**

I am pleased to present the Chief Executive Officer's Report that highlights a few of the operational activities that have taken place during the past month, key business metrics to monitor how well we are meeting our performance objectives, and an educational calendar.

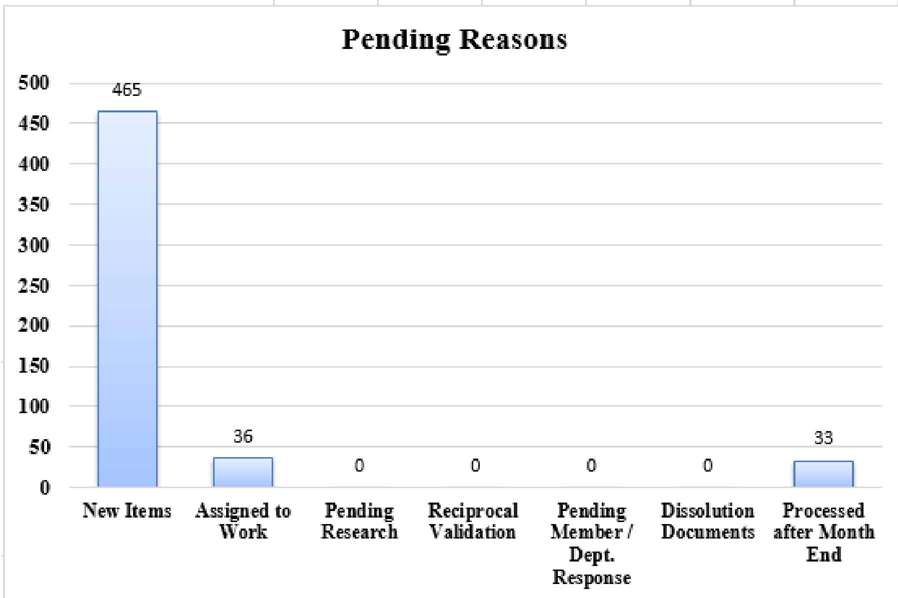
March Madness

We refer to the period beginning in December through the end of March as "March Madness" because retirements tend to spike during this period as members desire to retire in time to be eligible for any April 1st cost-of-living adjustment (COLA) that may be approved. As we have in years past, we are continuing our commitment to share the annual March Madness statistics in the Chief Executive Officer's report. There are two key statistics tracked during this time of year.

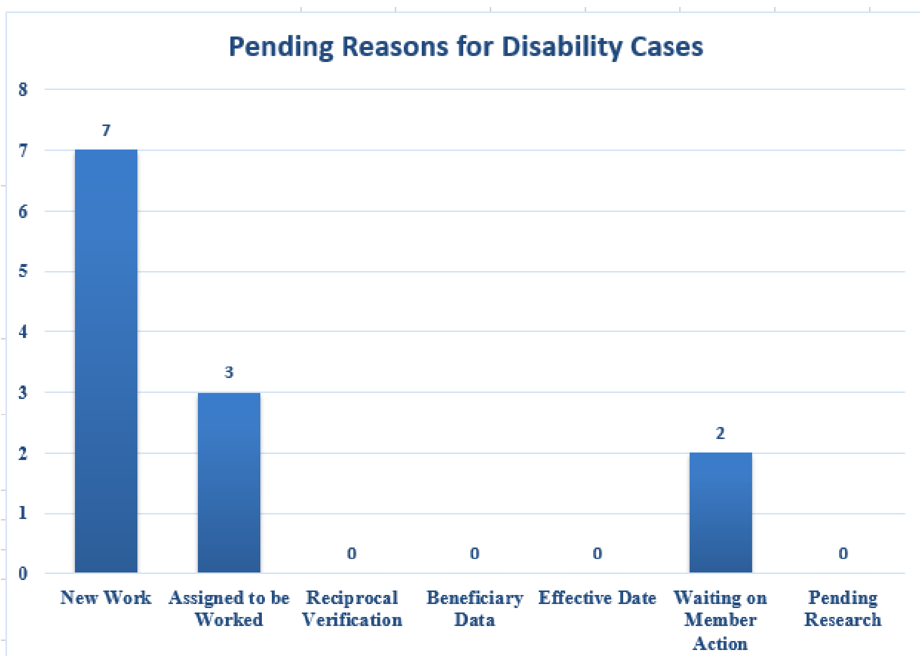
How well are we keeping up with our member's requests to retire? The chart below shows the total number of pending retirement elections. All incoming retirement requests are triaged by staff to facilitate processing those retirements with immediate retirement dates and those, which will require special handling (i.e. legal splits and those with uncompleted service credit purchases).

Retirement Month	Retirement Elections
December 2019	**72**
January 2020	**177**
February 2020	**114**
March 2020	**171**
Pending Disability Cases	**12**
Total Pending	**546**

The 546 retirement elections not completed for December - March are pending for the following reasons:



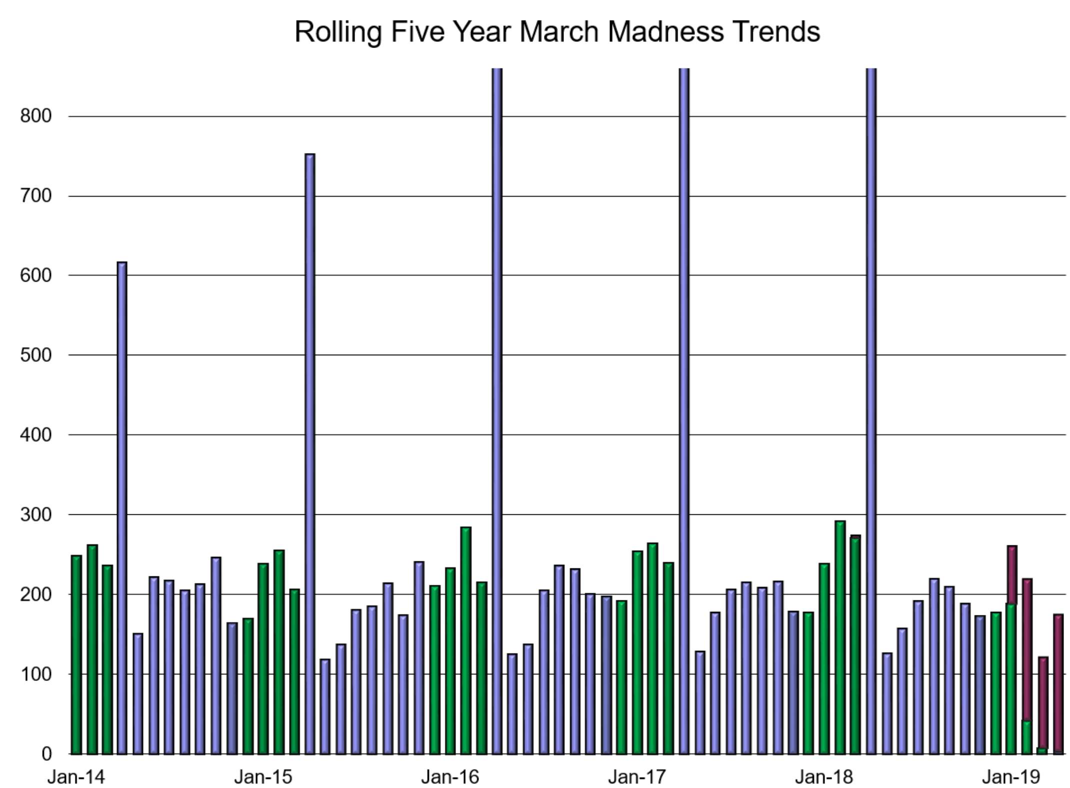
The 113 Pending Disability Cases represents the number of approved disability cases being processed by the Benefits Division. Once a disability has been granted by the Board, the Benefits Division staff work with the member and their employer to select a disability effective date, determine the member's option election, and bring them on payroll. These disability cases are pending for the following reasons:



These cases are not assigned to a specific month in the "March Madness" period because the final effective date has not been determined. As with service retirements, some cases have mitigating factors such as legal splits and uncompleted purchases, which can also extend processing. We expect to successfully meet the retirement agenda deadlines for a majority of our March Madness retirees.

The second key statistic is the volume of retirements during the year, and especially during March Madness. This gives us an indication on the severity of the stress placed on our capacity to meet our various member service requests and demands placed upon our staff.

The green bars in the following chart reflect those members approved by the Board to retire (i.e., their retirement elections have been approved and completed). The red bars reflect those cases that have not been processed as of the date of this report. As of December 17, 2019, we have processed 240 out of 744 retirements for the March Madness period so far. Comparing the total processed and pending per month we are running slightly behind the five-year average (last five completed years) for both December (240 vs. avg. of 242). Putting this into perspective during last year's March Madness 1,764 members retired, which was higher than the rolling five-year average of 1,573 (the five-year averages may change from month-to-month as disability cases are processed due to retroactive retirement dates).



Expanded Member Service Hours for March Madness

Member Services and Systems continue their collaboration to offer expanded hours of operation to six days a week through the end of March. The Member Services Center will be open almost every Saturday through the end of March 2020 for several hours. This allows LACERA to offer additional appointment slots for Saturday. Additionally, we will be offering the Pre-Retirement Workshop each Saturday. I would like to recognize and thank the entire Member Services and Systems teams for their efforts to assist our members.

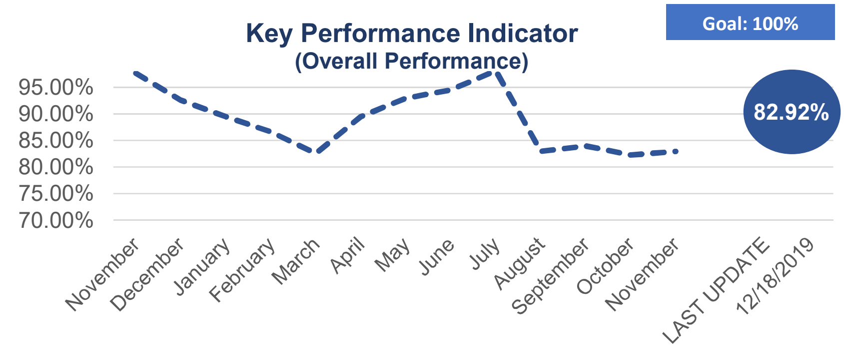
SHK: jp
CEO report Jan 2020.doc

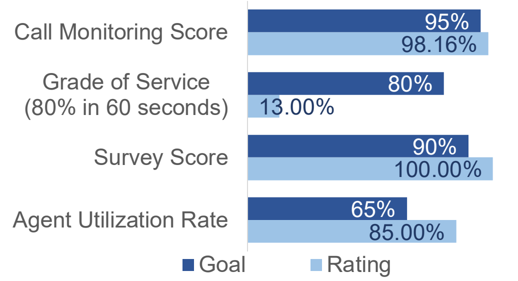
Attachments

Striving for Excellence in Service

Outreach Attendance	Outreach Events	Outreach Satisfaction	Member Service Center	Member Services Calls
2,808	56	96.7%	100.0%	10,190
17,125 Year-to-Date	254 Year-to-Date	1.0% Change Since Last Mo	-.2% Change Since Last Mo	11,180 3 Mo. Avg.

Member Services





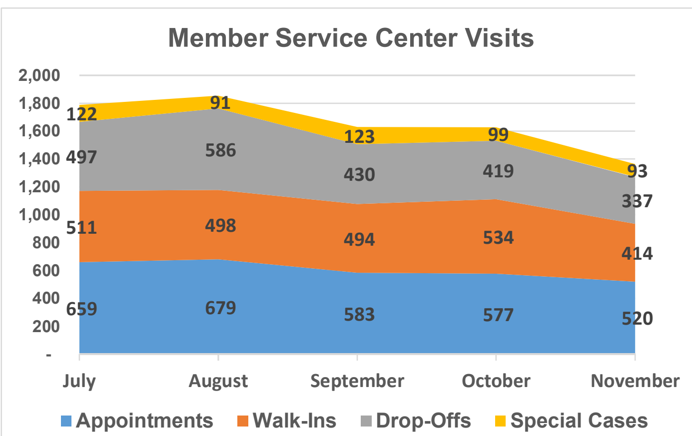
Top Calls

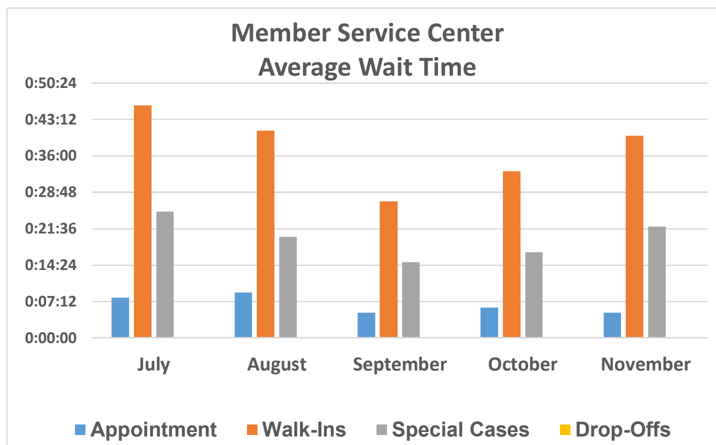
1. My LACERA: Portal Login Issues
2. Workshop Information\Appointments: Inquiry
3. Retirement Counseling: Process Overview

Emails 332

4:48 hours Avg. Response Time (ART)

Secure Messages 181

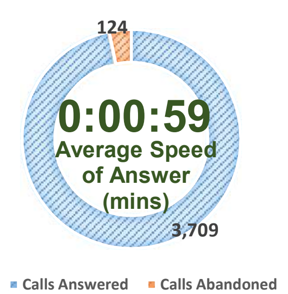




*Drop Off Wait Time: No Waiting

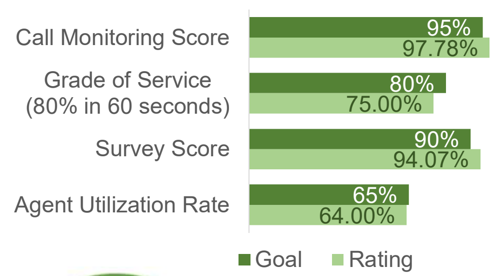
Retiree Healthcare

Total RHC Calls: 3,833



Top Calls

1. Med. Benefits - General Inquiries (RHC)
2. Medical-New Enrollment/Change/Cancel
3. General Inquiries (RHC)



Emails 253

1 Day Avg. Response Time

Secure Messages n/a

Striving for Excellence in Service (Continued)

Disability

Applications

666
In Process
As Of:
11/30/2019

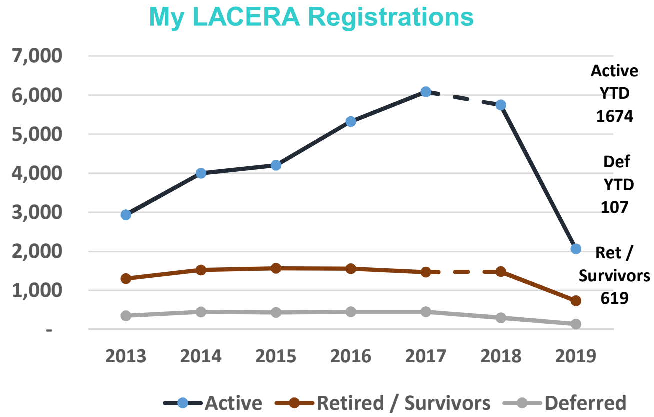
683	Pending as of:
47	Received
229	Year-to-Date
0	Re-Opened
0	Year-to-Date
54	To Board - Initial
221	Year-to-Date
10	Closed
18	Year-to-Date

Appeals

104
In Process
As Of:
11/30/2019

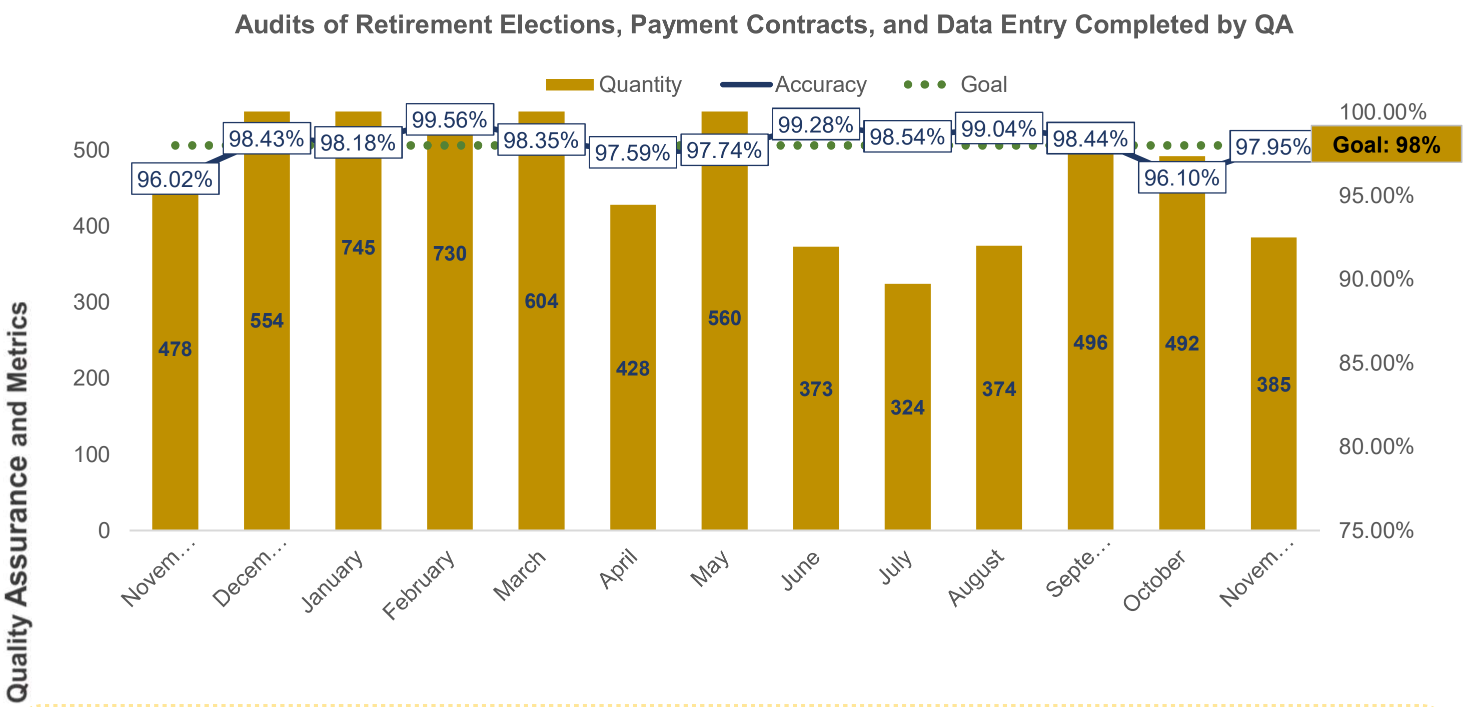
102	Pending as of:
5	Received
20	Year-to-Date
3	Admin Closed/Rule 32
9	Year-to-Date
0	Referee Recommended
0	Year-to-Date
0	Revised/Reconsidered for Granting
0	Year-to-Date

My LACERA



MORE COMING SOON!

Striving for Excellence in Quality

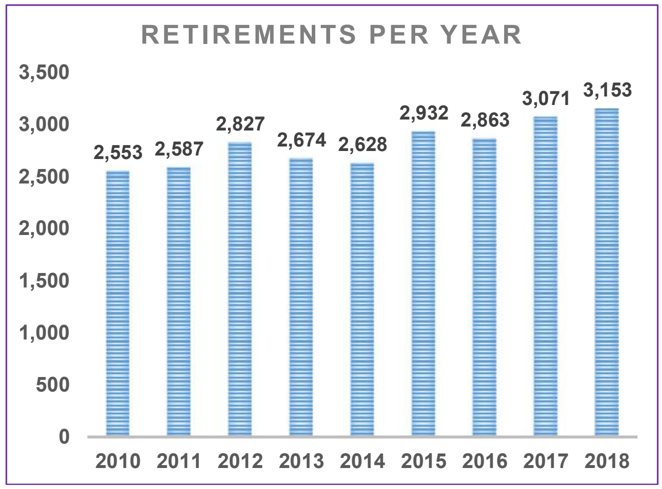


November 2019
97.95%

	Retirement Elections	Payment Contracts	Data Entry
Samples	181	144	60
Accuracy	97.09%	97.33%	99.43%

Member Snapshot

	Members as of 12/14/19				
	Plan	Active	Retired	Survivors	Total
General	Plan A	98	16,433	4,449	**20,980**
General	Plan B	30	678	69	**777**
General	Plan C	38	427	69	**534**
General	Plan D	41,218	15,953	1,489	**58,660**
General	Plan E	16,989	13,291	1,207	**31,487**
General	Plan G	28,289	39	4	**28,332**
General	**Total General**	**86,662**	**46,821**	**7,287**	**140,770**
Safety	Plan A	4	5,189	1,574	**6,767**
Safety	Plan B	9,582	6,016	297	**15,895**
Safety	Plan C	3,382	9	0	**3,391**
Safety	**Total Safety**	**12,968**	**11,214**	**1,871**	**26,053**
TOTAL MEMBERS		**99,630**	**58,035**	**9,158**	**166,823**
% by Category		**60%**	**35%**	**5%**	**100%**



Average Monthly Benefit Allowance Distribution

	General	Safety	Total	%
$0 to $3,999	29,957	2,038	31,995	55.40%
$4,000 to $7,999	12,375	3,568	15,943	27.60%
$8,000 to $11,999	3,100	3,967	7,067	12.24%
$12,000 to $15,999	838	1,241	2,079	3.60%
$16,000 to $19,999	243	234	477	0.83%
$20,000 to $23,999	72	76	148	0.26%
$24,000 to $27,999	26	12	38	0.07%
> $28,000	6	2	8	0.01%
Totals	**46,617**	**11,138**	**57,755**	**100%**

Average Monthly Benefit Allowance:	**$ 4,291.00**

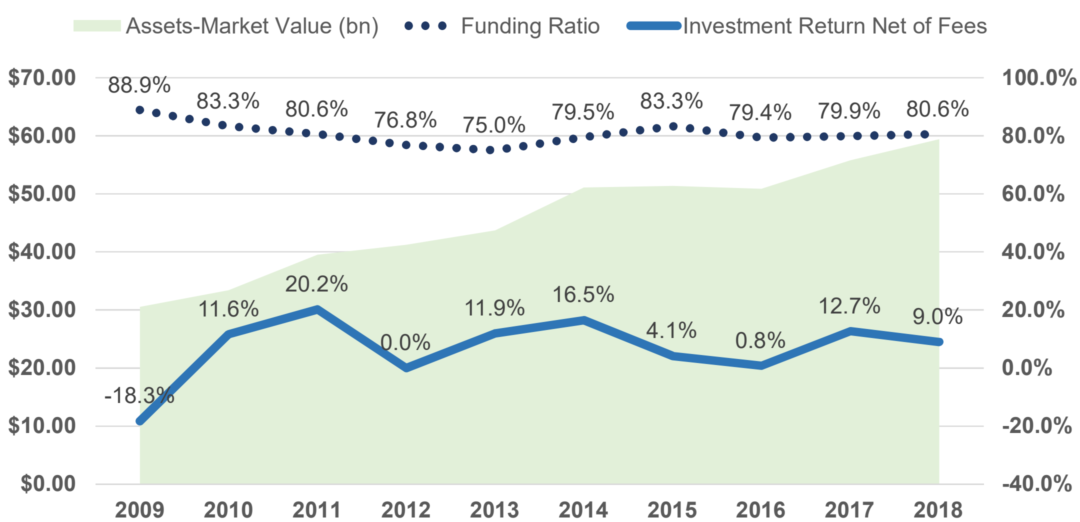
Healthcare Program (YTD)

	Employer	Member
Medical	$223.9m	$18.5m
Dental	$18.7m	$1.9m
Part B	$28.2m	xxxx
Total	**$270.7m**	**$20.4m**

Healthcare Enrollments (Monthly)

Medical	51,465
Dental	52,789
Part B	34,839
LTC	627
Total	**139,720**

Key Financial Metrics



Funding Metrics (as of 6/30/19)

Employer NC	9.92%*
UAAL	10.99%*
Assumed Rate	7.25%*
Star Reserve	$614m
Total Assets	$58.3b

Contributions (as of 6/30/19)

	Employer	Member
Annual Add	$1.7b	$635.4m
% of Payroll	20.91%*	6.88%

*Effective July 1, 2019, as of 06/30/18 actuarial valuation

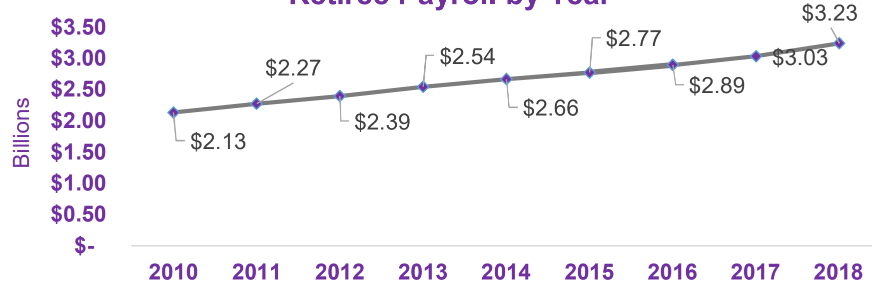
TOTAL FUND RETURN
(Net of Fees)

5 YR: 6.5% **10 YR:** 9.1%*

Retired Members Payroll

Monthly Payroll	$298.36m
Payroll YTD	1.5b
New Retired Payees Added	252
Seamless %	96.83%
New Seamless Payees Added	1,401
Seamless YTD	96.79%
By Check %	3.00%
By Direct Deposit %	97.00%

Retiree Payroll by Year



Date	Conference
January, 2020	
26-29	NCPERS Legislative Conference & Visit to Congress Washington, D.C.
February, 2020	
7	CALAPRS (California Association of Public Retirement Systems) Round Table – Benefits Avenue of the Arts Hotel, Costa Mesa
10-11	Pension Bridge ESG Summit 2020 San Diego, CA
11-12	2020 Milken Institute MEA Summit Abu Dhabi, United Arab Emirates
12-13	IMN (Information Management Network) Annual Beneficial Owners' Intl. Securities Finance & Collateral Mgmt. Conference Fort Lauderdale, FL
12-14	Pacific Pension Institute (PPI) North American Winter Roundtable Rancho Palos Verdes, CA
25-28 *(note date change)*	International Corporate Governance Network (ICGN) Conference Seoul, South Korea
25-28	2020 SuperReturn Berlin Conference Berlin, Germany
March, 2020	
2-3	National Institute on Retirement Security (NIRS) Annual Conference Washington D.C.
4-5	PREA (Pension Real Estate Association) Spring Conference Beverly Hills, CA
7-10	CALAPRS (California Association of Public Retirement Systems) General Assembly Meeting Rancho Mirage, CA
9-11	Council of Institutional Investors (CII) Spring Conference Washington D.C.
18-19	AHIP (America's Health Insurance Plans) National Health Policy Conference Washington D.C.
29-April 1	World Healthcare Congress Washington D.C.
30-April 1	CALAPRS (California Association of Public Retirement Systems) Advanced Principles of Pension Management for Trustees at UCLA Los Angeles, CA

Chief Investment Officer Monthly Report

Board of Investments

January 8, 2020

Jonathan Grabel
Chief Investment Officer

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

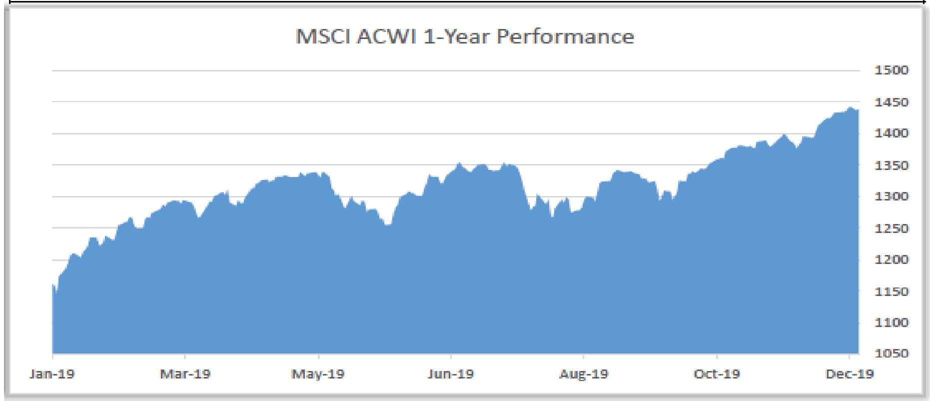
Table of Contents

Market Environment

Global Market Performance as of December 31, 2019

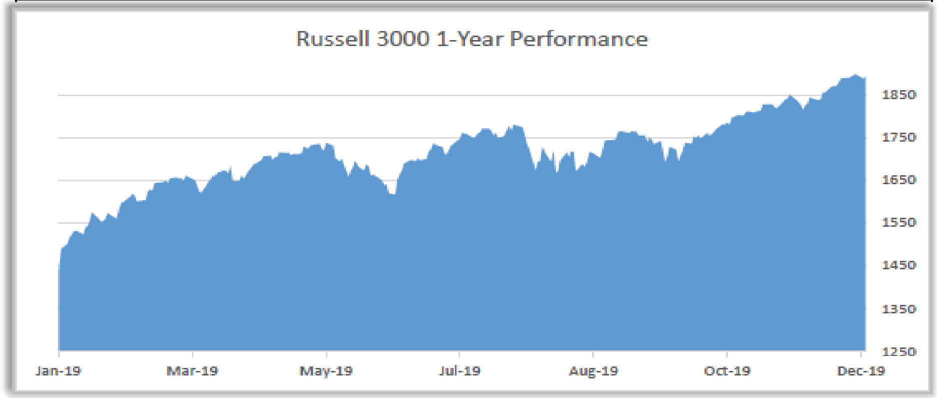
MSCI ACWI Index (Global Equity Market)*

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
3.4	8.8	27.4	27.4	12.7	9.0	9.5



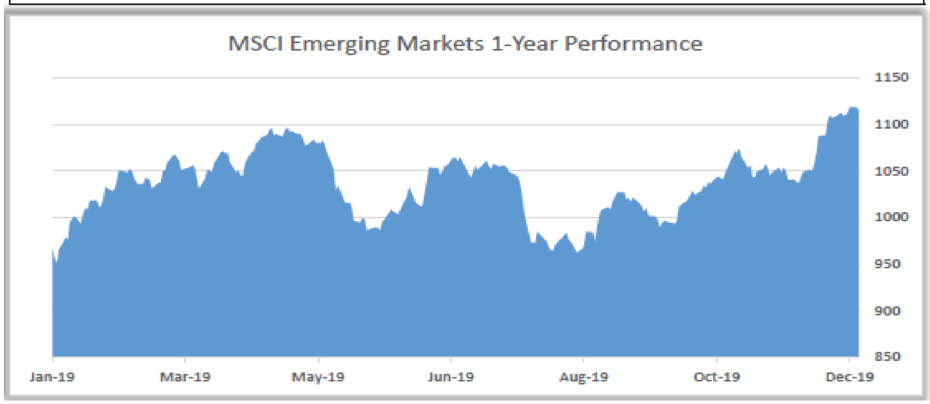
Russell 3000 Index (U.S. Equity Market)

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
2.7	9.1	31.1	31.1	14.6	11.3	13.3



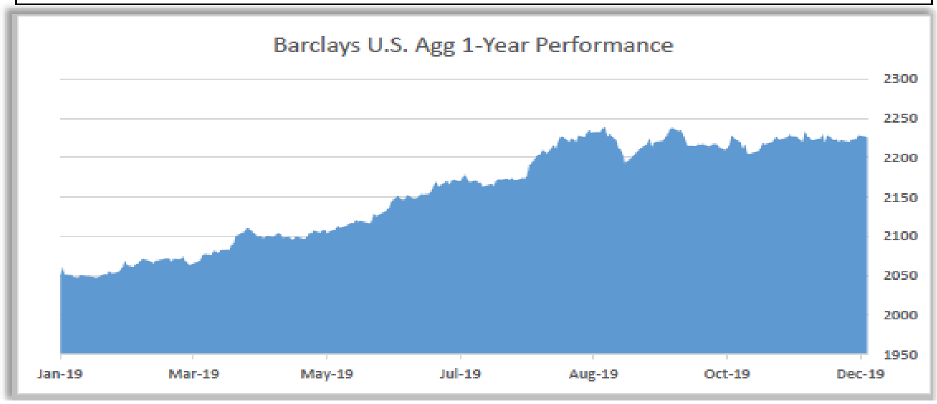
MSCI Emerging Market Index

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
7.2	11.3	19.9	19.9	11.9	6.0	4.1



Barclays U.S. Aggregate Bond Index**

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
-0.1	0.2	8.7	8.7	4.0	3.0	3.7

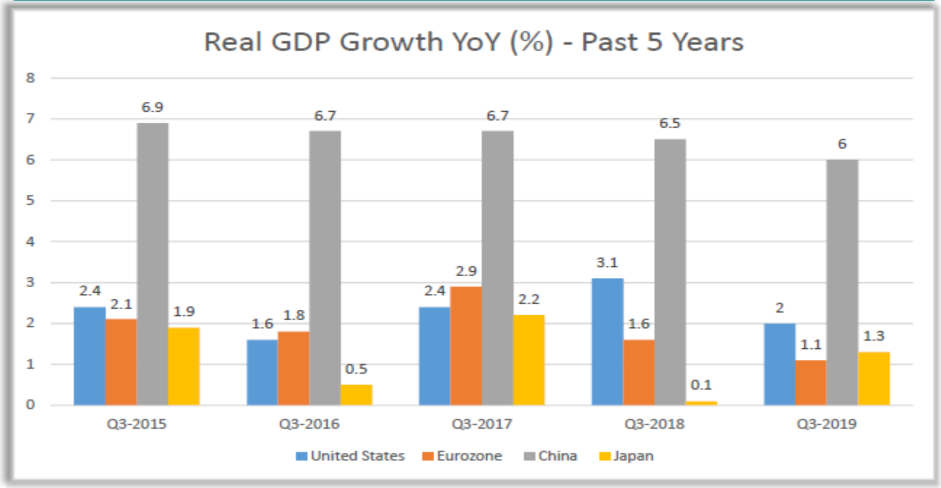


*Global Equity Policy Benchmark - MSCI ACWI IMI Index
**Investment Grade Bonds Policy Benchmark - Barclays U.S. Aggregate Bond Index

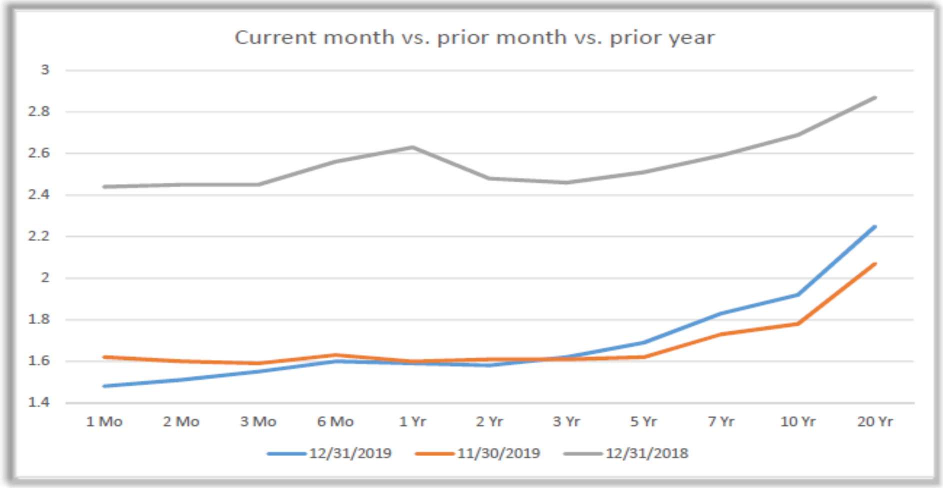
Source: Bloomberg

Key Macro Indicators

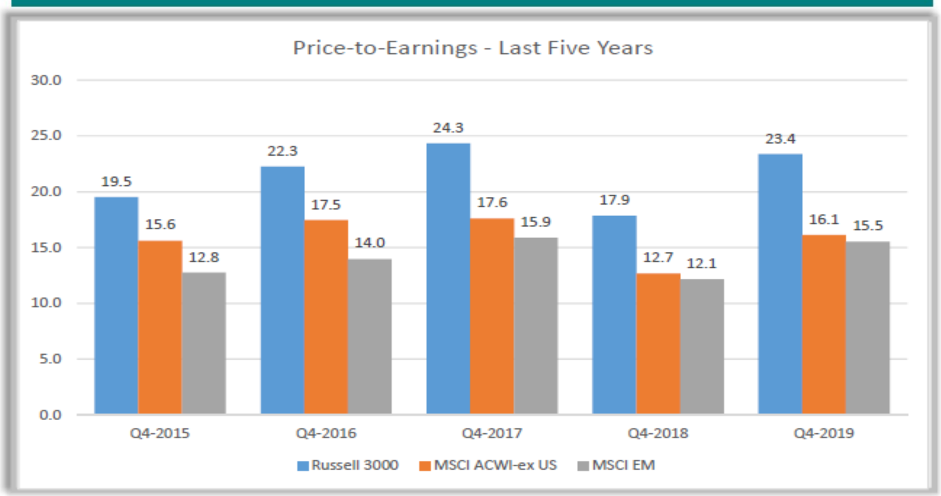
GDP Growth of Major Economies[1]



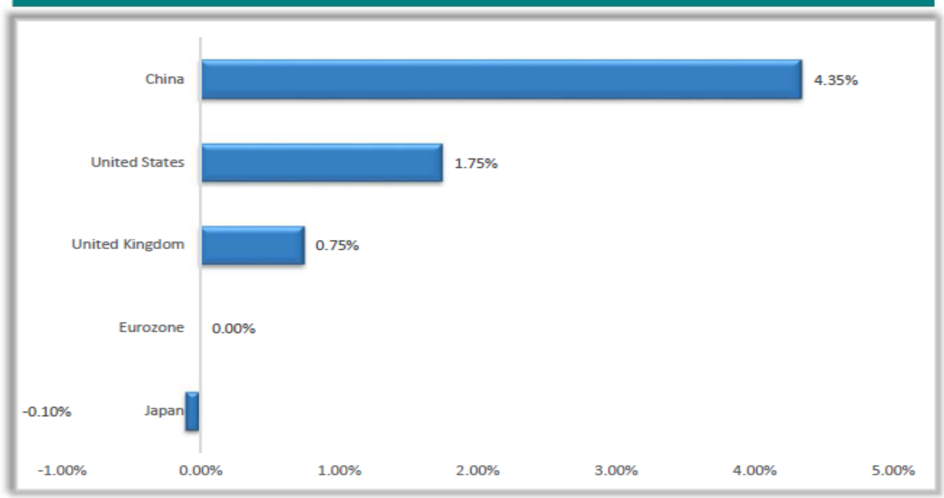
U.S. Treasury Yield Curve[2]



World Equity Valuation[3]



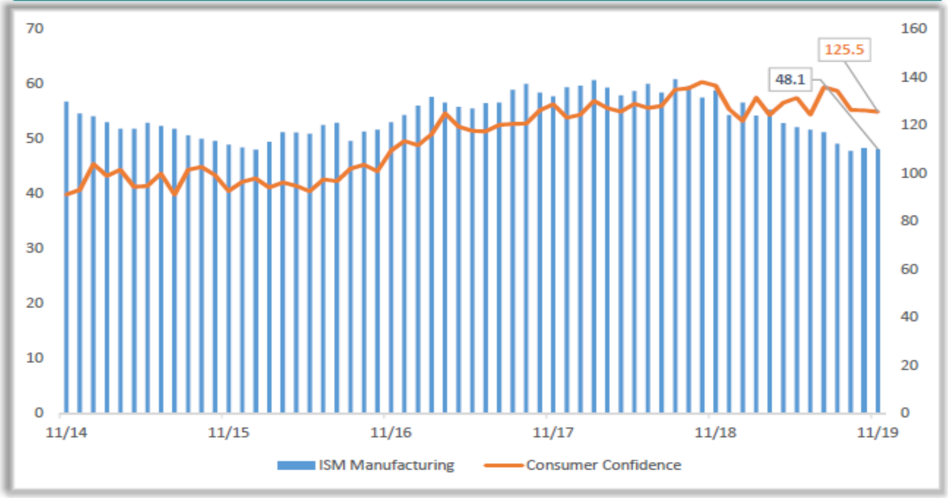
Central Bank Rates[4]



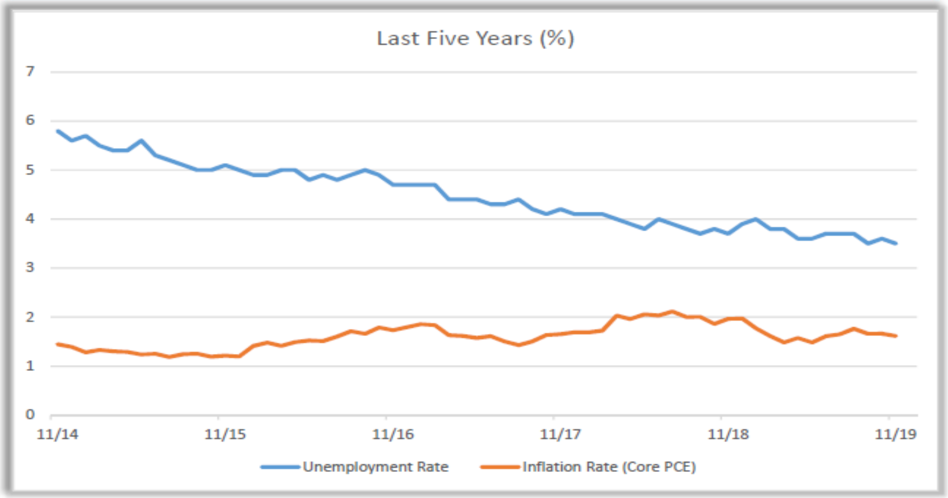
Sources: 1. Bloomberg 2. U.S. Treasury Department 3. Factset 4. Factset

Key Macro Indicators

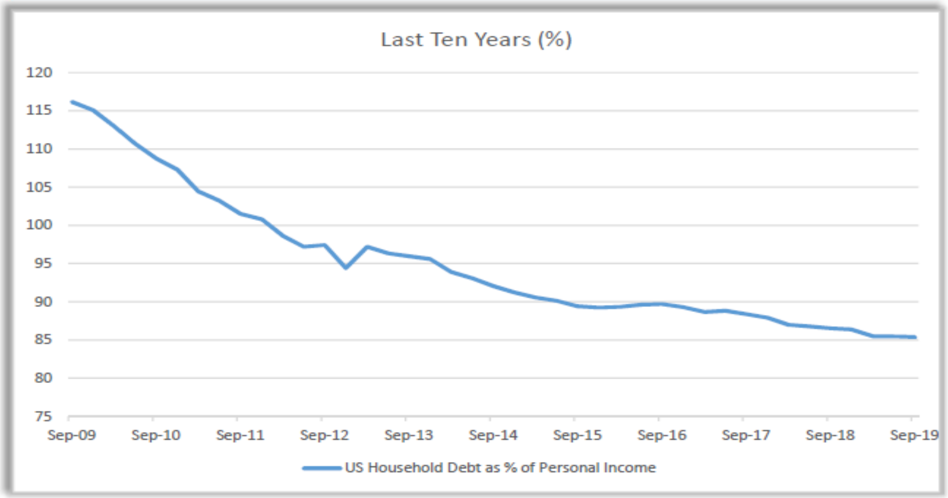
Consumer Confidence & ISM Manufacturing[1]



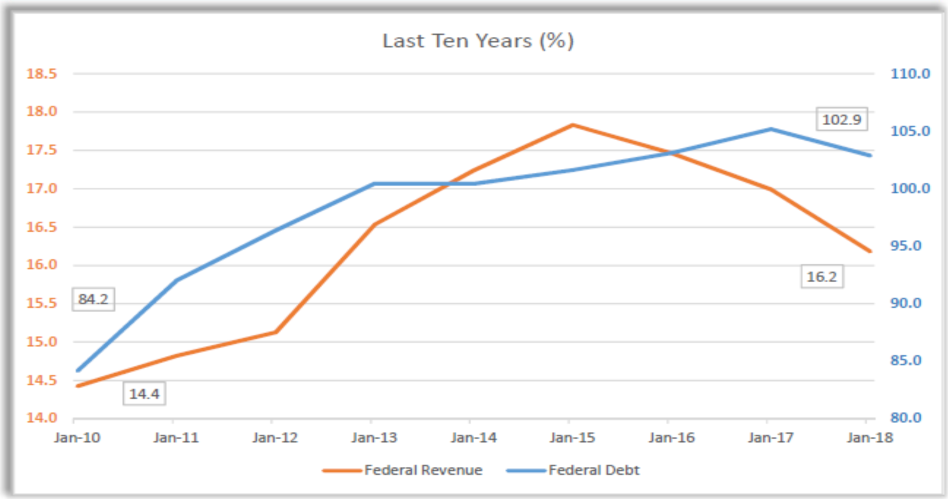
U.S. Inflation & Unemployment[2]



US Household Debt as % of Personal Income[3]



Federal Revenue and Federal Debt as % of GDP[4]



Sources: 1. Bloomberg 2. Bloomberg 3. Bloomberg 4. Bloomberg & Federal Reserve

Market Themes and Notable Items to Watch

Recent Themes

- U.S stock market experienced new highs
  - Price to Earnings multiple expansion
- Moderating global growth
- Geopolitical risks
  - China trade tensions; "Phase One" trade deal was announced, yet to be signed
  - Asian countries reached an agreement over a trade pact that is expected to be signed in 2020
  - Brexit negotiations
- Central banks remain accommodative

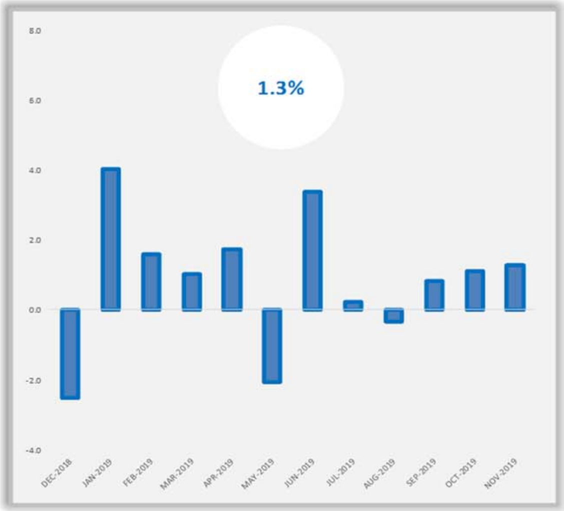
What to Watch

- Brexit – Extension of the country's departure from the EU to be deferred to January 31, 2020
- Negative economic data from China and Hong Kong
- Global central bank stance
- Credit spreads
- Impeachment proceedings
- Trade policies / trade deals

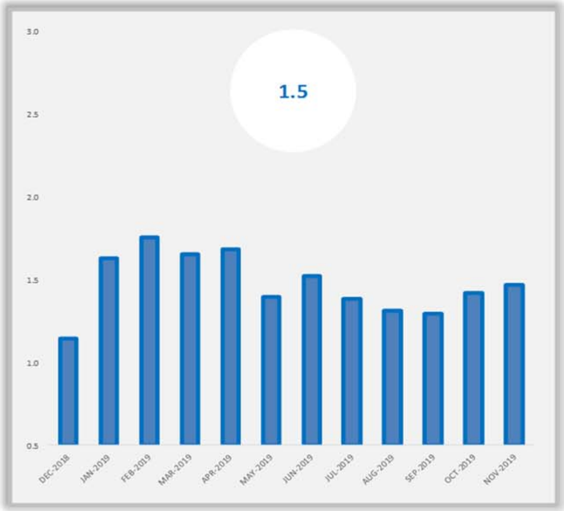
Portfolio Performance Update

Total Fund Summary as of November 2019

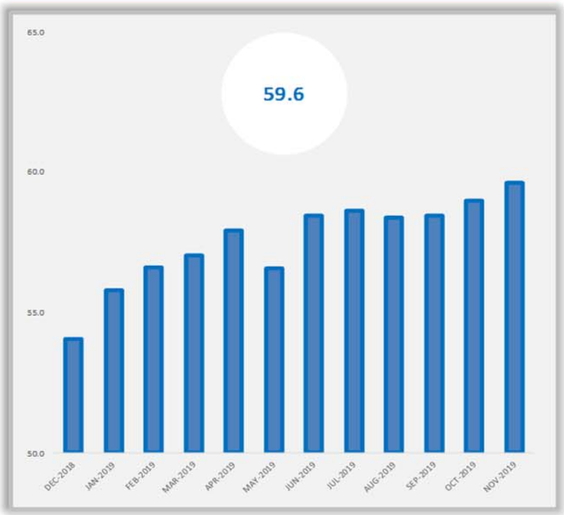
Monthly Return
(net)



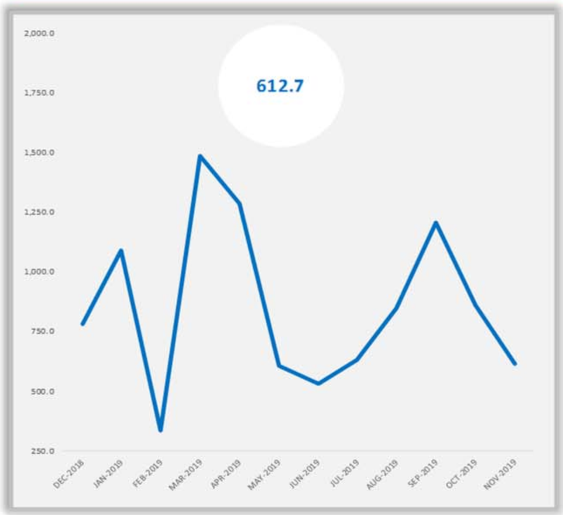
Sharpe Ratio
(3-Year Annualized)



Total Market Value
($ billions)

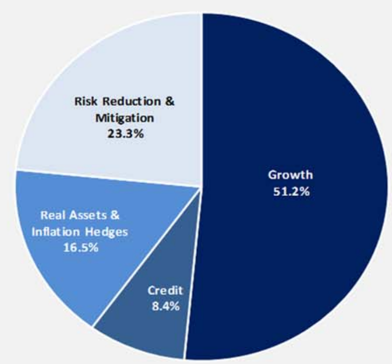


Cash
($ millions)



Asset Allocation

	Market Value[1] ($ millions)	% of Total	Final Target[2]
TOTAL FUND	**59,604**	**100.0%**	
Growth	**30,508**	**51.2%**	**47.0%**
Global Equity	23,358	39.2%	35.0%
Private Equity[3]	6,130	10.3%	10.0%
Opportunistic Real Estate[4]	1,020	1.7%	2.0%
Credit	**5,034**	**8.4%**	**12.0%**
High Yield	2,352	3.9%	3.0%
Bank Loans	925	1.6%	4.0%
Emerging Market Debt	841	1.4%	2.0%
Illiquid Credit[3,4,5]	916	1.5%	3.0%
Real Assets & Inflation Hedges	**9,826**	**16.5%**	**17.0%**
Core & Value Added Real Estate[4]	4,982	8.4%	7.0%
Natural Resources & Commodities	2,280	3.8%	4.0%
Infrastructure	1,641	2.8%	3.0%
Treasury Inflation-Protected Securities	922	1.5%	3.0%
Risk Reduction & Mitigation	**13,875**	**23.3%**	**24.0%**
Investment Grade Bonds	11,586	19.4%	19.0%
Diversified Hedge Fund Portfolio[5]	1,676	2.8%	4.0%
Cash	613	1.0%	1.0%
Overlay Composite[6]	361	0.6%	—



1. Transition balances are included in each subcategory total, if applicable
2. Final target weights effective as of 10/1/19
3. Private Equity market values reflect latest available and are adjusted for cash flows
4. Real Estate market values reflect a 3-month lag and best available values for the quarter are in the total fund
5. Hedge Fund market values reflect a 1-month lag
6. Reflects net cash position for overlay investing

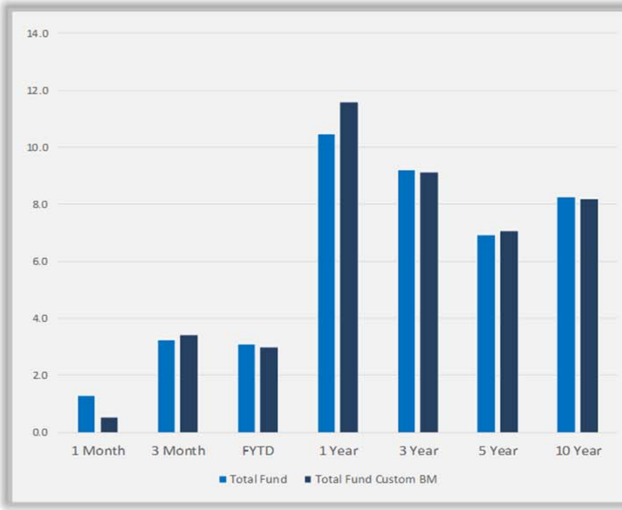
Historical Net Performance as of November 2019*

LACERA Pension Fund
(net)

	Market Value ($ millions)	% of Total Fund	Final Target[1]	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year
TOTAL FUND	59,604	100.0%	100.0%	1.3	3.2	3.1	10.5	9.2	6.9	8.3
Total Fund Custom BM				*0.5*	*3.4*	*3.0*	*11.6*	*9.1*	*7.1*	*8.2*
7.25% Annual Hurdle Rate				*0.58*	*1.77*	*2.96*	*7.25*	*7.25*	*7.25*	*7.25*

Functional Composites[2]	Market Value ($ millions)	% of Total Fund	Final Target[1]	1 Month	3 Month	FYTD
GROWTH	30,508	51.2%	47.0%	2.7	6.8	5.7
Growth Custom BM				*1.2*	*6.5*	*4.3*
CREDIT	5,034	8.4%	12.0%	0.1	0.5	0.9
Credit Custom BM				*0.3*	*1.1*	*2.2*
REAL ASSETS & INFLATION HEDGES	9,826	16.5%	17.0%	-0.4	-0.6	-1.2
Real Assets & Inflation Hedges Custom BM				*-0.3*	*0.8*	*0.5*
RISK REDUCTION & MITIGATION	13,875	23.3%	24.0%	0.0	0.0	2.4
Risk Reduction & Mitigation Custom BM				*0.0*	*0.0*	*2.4*
OVERLAY COMPOSITE	361	0.6%	—			

Historical Returns
(net)

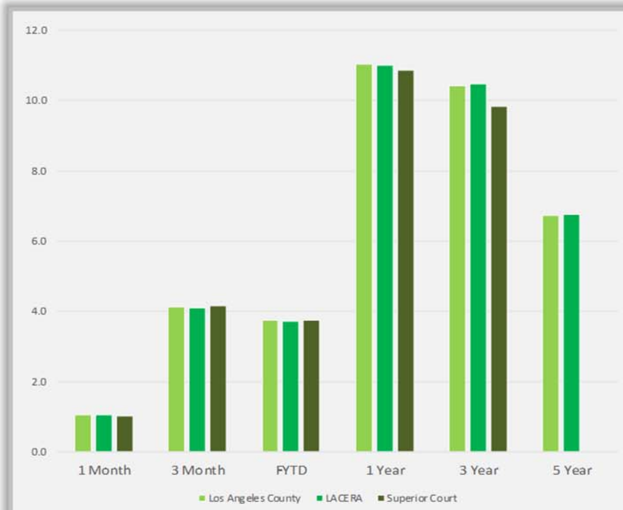


OPEB Master Trust Fund
(net)

Sub-Trusts	Market Value ($ millions)[3]	Trust Ownership %	Target Weight	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year
TOTAL OPEB MASTER TRUST	1,349								
Los Angeles County	1,297	96.2%	—	1.0	4.1	3.8	11.0	10.4	6.7
LACERA	5	0.4%	—	1.0	4.1	3.7	11.0	10.5	6.8
Superior Court	46	3.4%	—	1.0	4.1	3.8	10.9	9.8	—

Functional Composites	Market Value ($ millions)[3]	Trust Ownership %	Target Weight	1 Month	3 Month	FYTD	1 Year	3 Year
OPEB Growth	687	51.0%	50.0%	2.5	7.6	5.3	13.5	11.9
Custom OPEB MT Growth Pool				*2.5*	*7.5*	*5.1*	*13.2*	*11.6*
OPEB Credit	265	19.7%	20.0%	0.1	1.1	1.5	7.4	—
Custom OPEB MT Credit Pool				*0.0*	*1.0*	*1.2*	*7.1*	—
OPEB Real Assets & Inflation Hedges	263	19.5%	20.0%	-1.1	1.0	3.3	8.4	—
Custom OPEB MT RA & IH Pool				*-1.1*	*1.0*	*3.3*	*8.5*	—
OPEB Risk Reduction & Mitigation	132	9.8%	10.0%	0.0	-0.1	2.2	9.1	3.8
Custom OPEB MT RR & M Pool				*0.0*	*-0.1*	*2.2*	*9.1*	*3.5*
Operating Cash	0.1	0.0%	—					

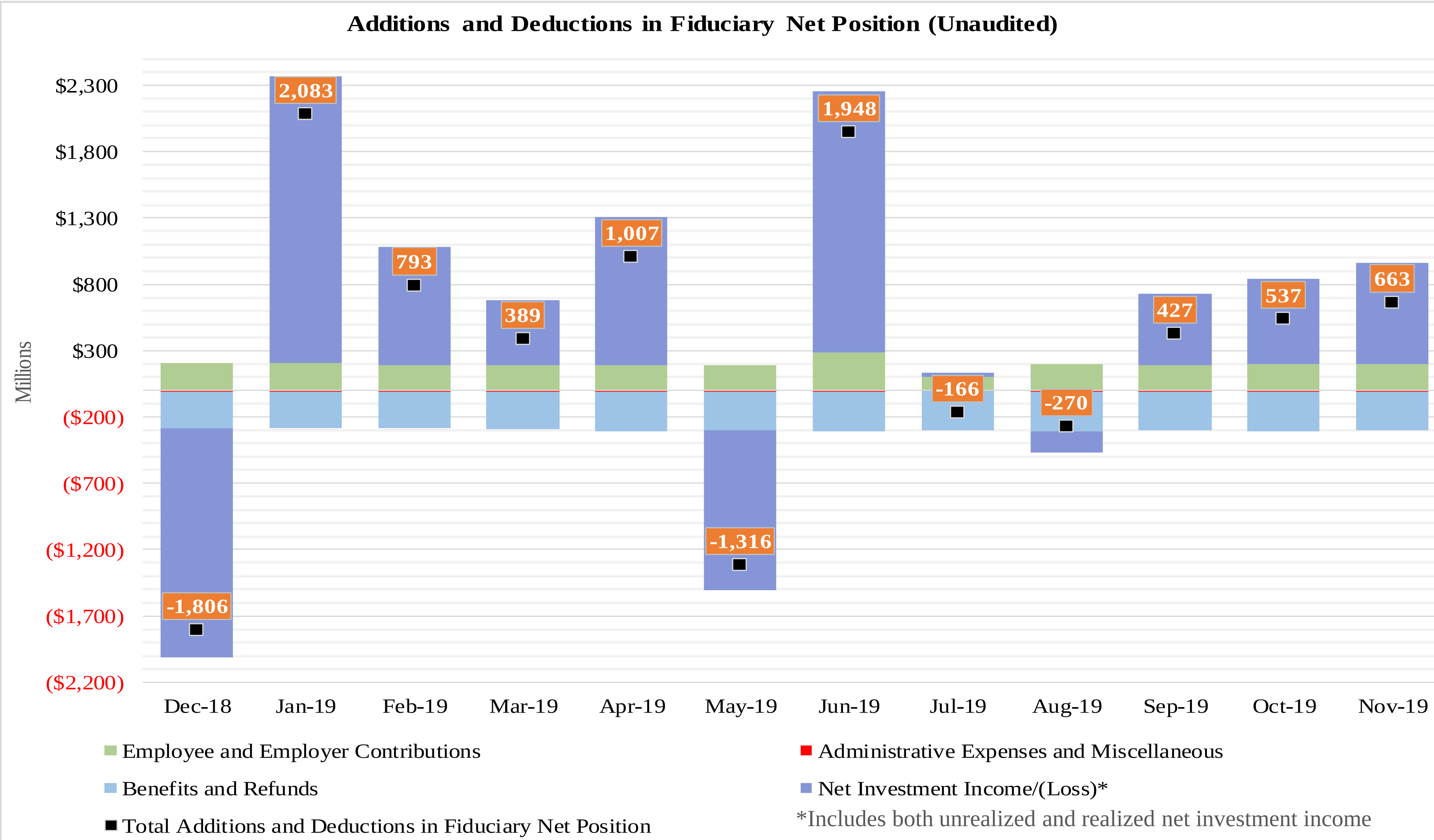
Historical Returns
(net)



1. Final target weights effective as of 10/1/19
2. Functional composites were adopted on 4/1/19
3. Market value differences between the sub-trusts and functional composites are due to operational cash

* Historical real estate valuations are currently under review, therefore November 2019 total fund, composite, and benchmark returns are preliminary

Change In Fiduciary Net Position



Fiscal Year	Negative Months	Positive Months	Total Net Position Change $
FY-18	3	9	$3.0 billion
FY-19	4	8	$1.9 billion
FY-20 YTD	2	3	$1.2 billion

Portfolio Structural Updates

Portfolio Structural Updates

Portfolio Movements

Rebalancing Activity

From		To
$354 million Public Equity	→	Cash
$225 million Cash	→	Real Assets Completion Port.
$100 million Cash	→	Real Assets TIPS
$115 million Hedge Funds	→	Cash
$120 million Cash	→	Overlay

Hedges and Overlays

Program	November Return	Gain/Loss November	Gain/Loss Inception*
Currency Hedge	0.60%	$9.8 Million	$974 Million
Overlay	-0.01%	-$0.1 Million	-$19 Million

Current Search Activity

Status of Active Searches

Name	RFP Issued	Due Diligence	BOI Review
Total Fund Risk Platform	●	●	Anticipated Jan 2020
Syndicated Bank Loans	●	●	Anticipated Jan 2020
Factor-Based Global Equity	●	●	Anticipated Early 2020
Appraisal Management Services	●	●	Anticipated Early 2020
Securities Lending Services	●	●	Anticipated Spring 2020
Alternatives Administrative Services	●	●	Anticipated Summer 2020
Total Fund Performance Provider	●		Anticipated Summer 2020
Dedicated Managed Account Services	●		Anticipated Summer 2020

Quiet Period for Search Respondents

Please see the Appendix for this month's list of respondents to active searches

* Currency and overlay program since inception dates are 8/2010 & 7/2019, respectively

Key Initiatives and Operational Updates

Notable Initiatives and Operational Updates

Key Initiative Updates

- Began transition to the MSCI ACWI IMI Index
- Sustainability Accounting Standard Board (SASB) formally announced LACERA joining its investor Advisory Group
- Updating business continuity plan

Operational Updates

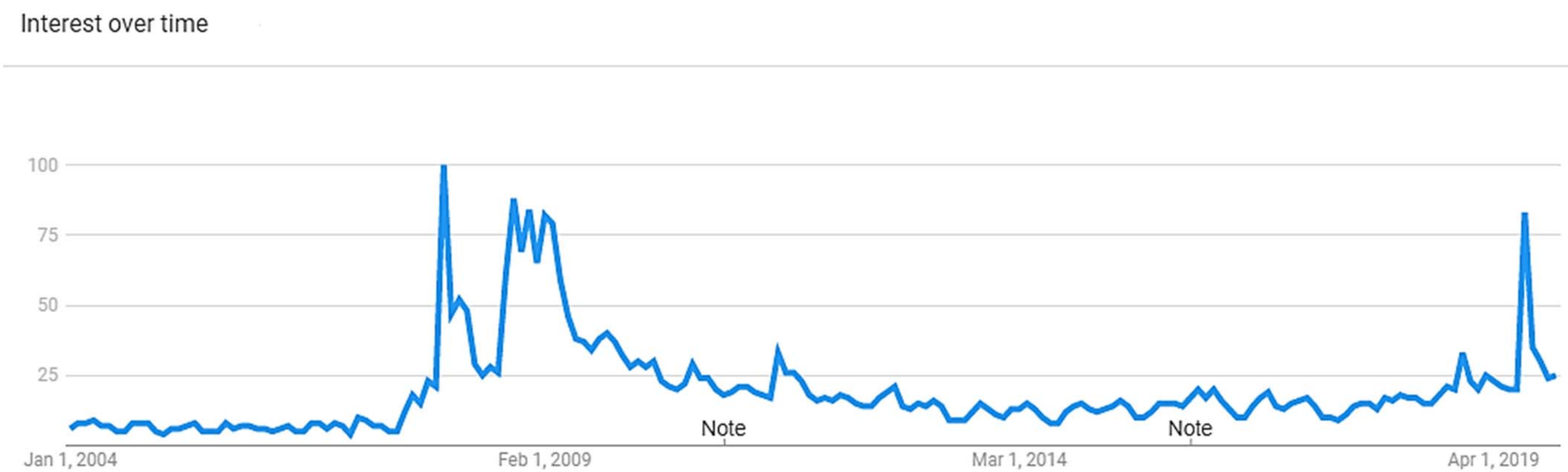
- Financial Analyst III searches
  - Public Equity, Private Equity, Credit, Real Assets
- Initiating Investment Division internship program for FY-2020
- Forthcoming CIO Report additions
  - Risk update (Pending RFP)
  - Compliance Monitor (on quarterly basis)

Manager/Consultant Updates

- Global Alpha Capital Management – Granted a emerging manager guideline exception for exceeding $3 billion of AUM
- PIMCO – Senior Investment Chief, Mihir Worah, is retiring in the coming months. Mr. Worah served as CIO for Asset Allocation and Real Return Strategies. His position will be assumed by other key investment managers under Investment Chief Dan Ivascyn.
- Parametric – Christine Smith, Chief Operating Officer, and Orison Chaffe, Head of Technology will be leaving the firm at the end of 2019. Ranjit Kapila joined the firm in December as Chief Technology Officer and Head of Operations.

Commentary

Staff Charts of the Month*
Recession Fear Since the GFC



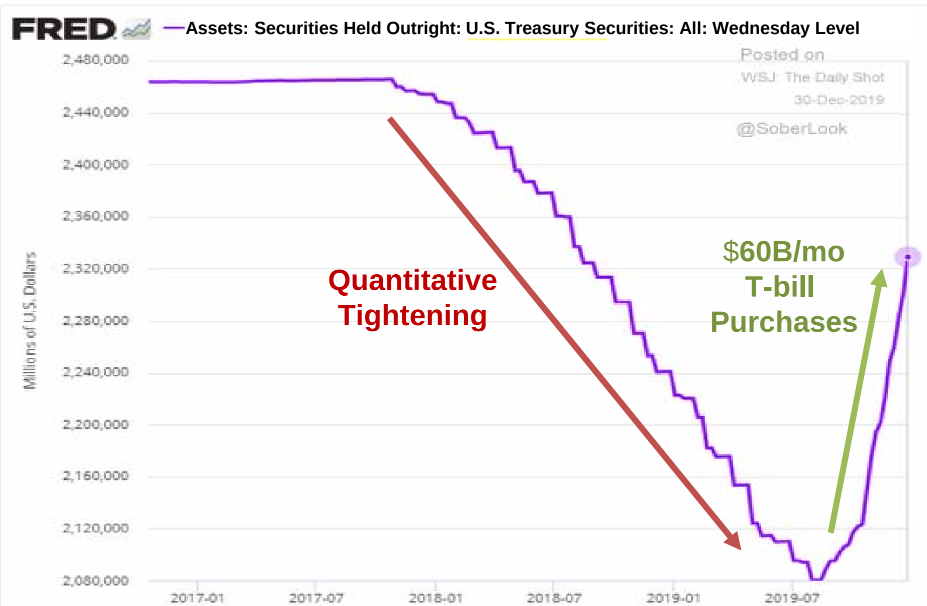
- Based on google trends, August 2019 had the highest recession fear (based on the number of searches for the word “recession”) since the GFC.

* Submitted by the Real Assets team

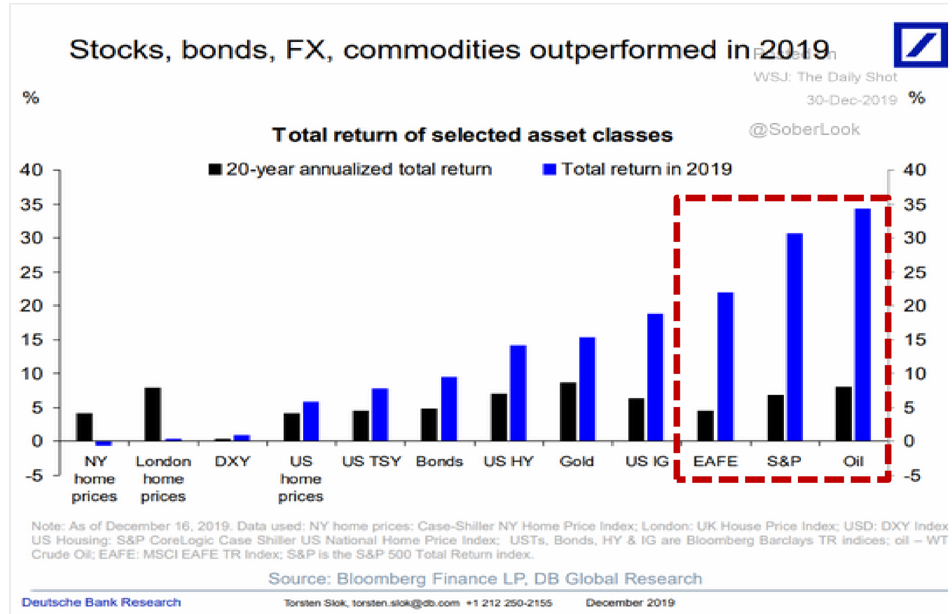
Staff Charts of the Month*

U.S. Fed Activity vs. Asset Class Returns 2019 YE

FED Balance Sheet Activity[1]



2019 Asset Class Returns[2]



- The Fed reversed quantitative tightening with aggressive asset purchases in 2H 2019 at a pace of $60 billion per month
- CY 2019 returns across most asset classes outpaced their historical 20-year average returns, especially riskier assets

1. Source: Borodovsky, Lev. “The Daily Shot.” The Wall Street Journal 12/30/19 – FRED
2. Source: Borodovsky, Lev. “The Daily Shot.” The Wall Street Journal 12/30/19 – Bloomberg / Deutsche Bank Research – as of 12/16/19

Appendix

Quiet Period for Search Respondents

Total Fund Risk System

- ✓ BlackRock Solutions
- ✓ BNY Mellon
- ✓ FactSet
- ✓ MSCI
- ✓ State Street
- ✓ Sustainalytics
- ✓ Wilshire Associates

Appraisal Management Service Provider

- ✓ Altus Group
- ✓ RERC, LLC.

Alternative Administrative Services

- ✓ CITCO Fund Services USA, Inc.
- ✓ LP Analyst, LP
- ✓ MUFG Capital Analytics, LLC
- ✓ SS&C Technologies, Inc
- ✓ State Street
- ✓ Sudrania Fund Services

Securities Lending Services

- ✓ Citibank, N.A.
- ✓ Deutsche Bank AG, New York Branch
- ✓ Goldman Sachs Agency Lending
- ✓ JPMorgan Chase Bank, N.A.
- ✓ Securities Finance Trust Company
- ✓ State Street Bank and Trust Company
- ✓ The Bank of New York Mellon

Syndicated Bank Loan Investment Management Services

- ✓ Aegon Asset Management US
- ✓ Ares Management LLC
- ✓ Bain Capital Credit, LP
- ✓ Barings
- ✓ BlackRock, Inc
- ✓ Brigade Capital Management, LP
- ✓ CIFC Asset Management LLC
- ✓ Credit Suisse Asset Management LLC
- ✓ Crescent Capital Group LP
- ✓ Crestline Denali Capital, LP
- ✓ CVC Credit Partners, LLC
- ✓ Eaton Vance Management
- ✓ FIAM LLC
- ✓ Franklin Advisors, Inc. (Investment Adviser)
- ✓ Franklin Resources, Inc. (Parent)
- ✓ GoldenTree Asset Management
- ✓ Goldman Sachs Asset Management LP
- ✓ GSO Capital Partners LP
- ✓ Guggenheim Partners Investment Management, LLC
- ✓ Invesco
- ✓ KKR Credit Advisors (US) LLC
- ✓ Loomis, Sayles &Co., LP
- ✓ Lord, Abbott & Co. LLC
- ✓ M&G Investments
- ✓ Neuberger Berman
- ✓ Oaktree Capital Management, LP
- ✓ Pacific Asset Management
- ✓ Par-Four Investment Management LLC
- ✓ PineBridge Investments LLC
- ✓ Seix Investment Advisors LLC
- ✓ Shenkman Capital Management, Inc.
- ✓ Symphony Asset Management LLC
- ✓ T. Rowe Price Associates, Inc.
- ✓ THL Credit Advisors LLC
- ✓ Voya Investment Management
- ✓ Wellington Management Company LLP
- ✓ Western Asset Management Company, LLC

Factor-based Equity Investment Management Services

- ✓ Allianz Global Investors
- ✓ AQR Capital Management, LLC
- ✓ AXA Investment Managers, Inc.
- ✓ BlackRock, Inc.
- ✓ Brandywine Global Investment Management
- ✓ Capital International, Inc.
- ✓ Connor, Clark, and Lunn Investment Management, Ltd.
- ✓ Dimensional Fund Advisors LP
- ✓ FFCM LLC
- ✓ Goldman Sachs Asset Management, LP
- ✓ HSBC Global Asset Management Inc.
- ✓ Invesco
- ✓ J.P. Morgan Asset Management
- ✓ Lazard Asset Management LLC
- ✓ Legal & general Investment Management
- ✓ Los Angeles Capital Management and Equity Research Inc.
- ✓ Mellon Investments Corporation
- ✓ Northern Trust Investments, Inc.
- ✓ PanAgora Asset Management, Inc.
- ✓ QMA LLC
- ✓ Robeco Institutional Asset Management US, Inc.
- ✓ State Street Global Advisors, LLC
- ✓ TOBAM
- ✓ Wells Fargo Asset Management

December 30, 2019

TO: Trustees – Board of Investments

FROM: Santos H. Kreimann SHC
Chief Executive Officer

Jonathan Grabel
Chief Investment Officer

Ted Granger TG
Interim Chief Financial Officer

FOR: Board of Investments Meeting on January 8, 2020

SUBJECT: **2019 INVESTIGATION OF EXPERIENCE FOR RETIREMENT BENEFIT ASSUMPTIONS**

RECOMMENDATION

It is recommended that the Board of Investments (BOI):

1. Adopt the economic assumptions identified as Alternative #2 on page 17 of the draft 2019 Investigation of Experience for Retirement Benefit Assumption Report (2019 Experience Study), as submitted by the plan actuary (Milliman). This option (combined with 25 year amortization for existing layers) is labeled as Alternative 2a on the Milliman presentation slides to be shown and discussed at the upcoming January 8, 2020 Board of Investments (BOI) meeting. The economic assumptions recommended for adoption by LACERA staff and Milliman includes a 6.75% investment return; 3.00% general wage growth; 2.50% price inflation rate and 3.00% payroll growth factor.

2. Adopt a 25-year amortization period for existing annual payment layers and a new 20-year amortization schedule for all payment layers added in future years.

3. Adopt the demographic assumptions that allow for use of revised mortality tables; larger merit salary increases; modified rates of retirement; small adjustments to the termination and disability assumptions; and other minor changes. The recommended changes are more fully described in Milliman's draft 2019 Experience Study report.

4. Adopt the phase-in of increases in the employer contribution rates over a three-year period to help fulfill LACERA's fiduciary duty of legal authority to minimize the impact on employer contributions in the short-term.

5. Delegate authority to the Chief Executive Officer working in concert with LACERA's General Counsel, the Interim Chief Financial Officer and Chief Investment Officer to

ensure the actuarial assumptions adopted by the BOI Trustees, and as more fully detailed in Appendix A of the 2019 Experience Study report, are incorporated in Milliman's calculation of plan liabilities presented in the 2019 Actuarial Valuation of Retirement Benefits report.

EXECUTIVE SUMMARY

The Board of Investments' Retirement Benefit Funding Policy requires annual valuations to monitor the LACERA pension plan (Plan) funding status and to calculate employer contribution rates for the coming year. The California Government Code requires the Board to conduct a plan experience study at least once every three years to measure the effectiveness of the plan assumptions and valuation methodology. *Attachment I* for the Board's consideration is the draft 2019 Experience Study conducted by Milliman.

At the October, November and December 2019 BOI meetings, Milliman provided educational sessions for the BOI Trustees to thoroughly discuss potential modifications to the assumptions for investment return, general wage growth, payroll increases, and cost of living adjustments, as well as possible changes to the amortization periods for both current and future annual payment layers. As a supplement to this discussion, Milliman estimated the likely funding impact on the Plan.

A brief description of the demographic assumptions was provided to the Trustees and discussed at the December 2019 BOI meeting, a more detailed description of the demographic assumptions can be found in the draft 2019 Experience Study report. The proposed demographic changes are also summarized as part of this letter for your convenience. A more thorough presentation of the recommended demographic assumptions along with the various economic assumptions is also planned for the next BOI meeting scheduled for Wednesday, January 8, 2020.

LACERA's audit actuary, Cavanaugh Macdonald Consulting, LLC (CMC) completed their review of the draft 2019 Investigation of Experience report and the processes Milliman used to develop the recommendations, and will provide an oral presentation at the January 8, 2020 Board meeting. The draft Actuarial Review on the 2019 Investigation of Experience draft report is included as *Attachment II*.

LEGAL AUTHORITY

Provisions contained in the County Employees Retirement Law (California Government Code, Sections 31450-31899.1) and the California Constitution (Article XVI, Section 17) govern the actuarial process at LACERA.

Section 31453 of the County Employees Retirement Law requires LACERA to obtain an actuarial valuation at least once every three years. The valuation shall be conducted under the supervision of an actuary, shall cover the mortality, service, and compensation experience of the members and beneficiaries, and shall evaluate the assets and liabilities of the retirement fund. Government Code Section 7504(a) additionally provides, for all California public pension systems, not less than every three years, the fund actuary “shall perform a valuation of the system utilizing actuarial assumptions and techniques established by the agency that are, in the aggregate, reasonably related to the experience and the actuary’s best estimate of anticipated experience under the system. Any differences between the actuarial assumptions and techniques used by the actuary that differ significantly from those established by the agency shall be disclosed in the actuary’s report and the effect of the differences on the actuary’s statement of costs and obligations shall be shown.”

The California Constitution, Article XVI, Section 17(a) of the Constitution provides that public pension trustees “shall discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. A retirement board’s duty to its participants and their beneficiaries shall take precedence over any other duty.” To comply with their fiduciary duty with respect to actuarial decisions, the Constitution requires that each of these three elements be considered and evaluated with the interests of members and beneficiaries being paramount.

Article XVI, Section 17(e), assigns “the sole and exclusive power to provide for actuarial services” to the governing body of the public employees’ retirement system. Such power is given by the Constitution in order to “assure the competency of the assets of the public pension or retirement system.”

LACERA’s RETIREMENT BENEFIT FUNDING POLICY

LACERA’s Retirement Benefit Funding Policy requires annual actuarial valuations to review the retirement system’s funding progress. These annual valuations are used to set the employer contribution rates and member contribution rates for the General Plan G and Safety Plan C plan tiers.

In addition to the annual valuations, LACERA requires its actuary to review the reasonableness of the economic and non-economic (demographic) actuarial assumptions every three years. This review, commonly referred to as the investigation of experience or experience study, is accomplished by comparing actual experience during the preceding three years to what was expected to happen according to the actuarial assumptions. On the basis of this review, the actuary recommends whether any changes in the assumptions or methodology would allow a more accurate projection of total benefit liabilities and asset growth. Based on the triennial Investigation of Experience results and the respective annual actuarial valuation, all employer and employee contribution rates are evaluated for reasonableness and adjusted as needed.

INVESTIGATIVE PROCESS

The plan actuary, Milliman, prefers to discuss the results of the investigation of plan experience with the Board of Investment Trustees prior to performing the valuation. This enables the Trustees to discuss the reasonableness of the actuarial assumptions and methodology with the actuary and provides the opportunity for the Trustees to give direction to the actuary prior to completing the annual valuation of plan liabilities. The first step in the investigation process is to evaluate LACERA's plan experience over the last three years. The actuary completed this task and presents their findings in the attached report titled '2019 Investigation of Experience for Retirement Benefit Assumptions'.

The Investigation of Experience report is the basis for completing the second step in the investigative process that is for the Trustees to review the reasonableness of actuarial assumptions to be used in the upcoming calculation of plan liabilities. Milliman includes a summary of their recommendations in this report on page 8. LACERA staff include their recommendations in this memo.

LACERA engaged CMC, our audit actuary, to prepare an independent Actuarial Review of the 2019 Investigation of Experience for LACERA (Actuarial Review Report). The scope of CMC's work included an independent verification of the results and evaluation of any recommendations in Milliman's Report, the preparation of a report and a presentation of any findings to the Board of Investments. We have received CMC's draft Report (*Attachment II*), and CMC will be present at the January 8, 2020, meeting to summarize the results of their audit and address any questions you may have.

Although CMC noted a few minor items for consideration that may present opportunities for improvement of the assumptions, none are believed to have a material impact on the proposed assumptions. Nonetheless, LACERA staff have noted these suggested assumption opportunities and will review them as part of the analysis for the next triennial actuarial review in 2022.

Most importantly, please note, in the opinion of CMC, the assumptions and methods proposed by Milliman are reflective of sound professional judgement and are appropriate for the systematic funding of the pension obligations of LACERA. Furthermore, CMC has determined that the actuarial methods, assumptions, processes and the report as written are consistent with the applicable Actuarial Standards of Practice.

DISCUSSION

Milliman provides a variety of economic scenarios in their report and staff have focused the discussion below on the 'Recommended' economic assumptions on page 4 and Alternative #2 on page 17 of the draft 2019 Experience Study report (Alternative 2a within Milliman's presentation slides). Alternatives covered in the discussion below are labelled as Alternative A on page 4 of Milliman's draft 2019 Experience Study report and Alternative 1b in the presentation slides.

Investment Return Assumption

Milliman recommends lowering the current 7.25% investment return assumption by 50 basis points to 6.75% (Recommended) to reflect the current economic environment. Milliman also considers a reduction of 25 basis points to 7.00% (Alternative A) as reasonable. Milliman based their recommendation on a comparison of the Board's investment consultant, 34 investment advisors in the 2019 Horizon survey, and their own capital market assumptions as of January 2019 across 10-years and 20-years. Fluctuation in the market since January 2019 has led Milliman to believe that future expected returns have decreased materially.

Staff concurs with Milliman's recommendation to lower the investment return assumption to 6.75%. Although this change causes slightly higher employer and employee contributions, this approach better aligns the fund return expectations with recent long term economic forecasts. This process of reviewing recent past experience and establishing realistic targets and goals seeks to ensure LACERA will maintain its ability to fund future benefits. Setting the assumption at this level now could reduce the possibility of Milliman requesting an additional economic assumption review in the shorter term, instead of three years when the next triennial experience study is scheduled.

Milliman's recommended 6.75% investment return assumption is consistent with historical return relationships among traditional investments such as cash, bonds, and stocks. Given today's low cash yield, a traditional 60/40 portfolio consisting of 60% stocks and 40% bonds would have an expected return of approximately 6.75%. Modifying the analysis to reflect LACERA's actual asset allocation may not materially increase returns, but importantly it reduces expected risk. This is relevant as LACERA's investment beliefs state that "the pattern of returns matters because volatility levels and the sequence of gains and losses can impact funded status and contribution rates." Hence, LACERA's allocation to less liquid investment strategies dampen volatility in a manner that maximizes the Fund's expected return and risk quotient. While many of LACERA's private market investments are expected to earn higher returns than their public market counterparts, LACERA's portfolio—which has a target allocation of 35% to public equities and 10% to private equity—has less equity exposure, and hence less risk, than a traditional 60/40 stock/bond portfolio. Also, in 2018 the Plan went through an asset allocation study done by LACERA's Investment consultant, Meketa, the study had a 10-year expected Investment return rate of 6.3%, which makes the 6.75% return assumption closer to the policy portfolio adopted by the BOI in 2018. Therefore, a 6.75% return assumption is reasonable for LACERA.

Price Inflation Assumption

Milliman recommends lowering the price inflation assumption by 25 basis points to 2.50% if the investment return assumption approved is 6.75% (Recommended). Milliman also accepts keeping the current 2.75% price inflation assumption if the investment return assumption approved is 7.00% (Alternative A). The price inflation assumption is a building block for other plan assumptions (wage growth, payroll growth and COLA) and the actuary recommends lowering each related assumption in a similar fashion. The wage growth assumption is set equal to price inflation plus 50 basis points. As a result, Milliman recommends lowering it by 25 basis points to 3.00% (Recommended) or keeping the current 3.25% (Alternative A) wage growth assumption, depending upon the investment return assumption rate ultimately adopted.

Milliman recommends lowering the general wage growth assumption to 3.00%, which is the recommended price inflation assumption of 2.50% plus the real wage inflation rate of 0.50%. As discussed at three recent educational meetings, the Board may choose to retain the current set of price inflation related assumptions, however, the plan actuary noted this assumption set has the lowest probability to approximate actual future experience. In addition, lowering the wage growth assumption partly offsets the impact of reducing the investment return assumption.

As discussed in Milliman's report, the bond market can provide useful information for making inflation forecasts. By comparing the yield of a nominal 30-year U.S. Treasury Bond to the yield of a 30-year U.S. Treasury Inflation-protected security (TIPS), we can determine the bond market's inflation forecast for the next 30 years. As of December 24, the nominal 30-year Treasury bond yield was 2.34% and the 30-year TIPS yield was 0.54%. Therefore, the bond market's estimate for expected U.S. inflation over the next 30 years is 1.8% (2.34%-0.54%). As Milliman observes, inflation in California has historically been higher than the national average, so the inflation assumption of 2.50% is reasonable and conservative relative to most forecasts.

Amortization Period

In accordance with LACERA's Funding Policy, the employer contribution rates are set equal to the normal cost rate, net of expected member contributions for the next year, plus amortization of any Unfunded Actuarial Accrued Liability (UAAL). A UAAL occurs if the Funded Ratio is less than 100 percent. The amortization of the UAAL beginning with the June 30, 2009 valuation is funded over a closed 30-year period. Any future unanticipated changes in the UAAL, such as assumption changes or actuarial gains and losses, are amortized over new closed 30-year periods beginning with the June 30, 2010 valuation. This approach is often referred to as a "layered amortization method." The employer contribution rate is not allowed to be less than the rate if LACERA amortized the total UAAL over a 30-year period. For the most recent valuation completed as of June 30, 2018, ten amortization layers were used to calculate the total amortization payment beginning July 1, 2019.

Based on a recent funding survey by Roeder Financial Services, LACERA ranks 37th out of 37 California retirement systems in having the longest future amortization period of 30 years. Milliman recommends changing the current 30-year UAAL amortization methodology to a 20-year amortization for all future payment layers. For the existing layers, the plan actuary recommends either retaining current layers, or applying a 22-year maximum amortization period to the current layers. Another approach Milliman considers acceptable is to re-amortize all existing layers over a 25-year period. This would result in shortening the time period for some existing payment layers while extending it for others.

Staff concurs with Milliman's recommendation to apply a 20-year amortization period to all future amortization payment layers to be consistent with actuarial guidance and more closely align the Plan with our peers. For existing amortization layers, staff agrees with the option, in conjunction with an investment return assumption decrease to 6.75%, to apply a 25-year amortization period to all existing layers (Recommended). Although this method results in extending the amortization period for some payment layers, it helps reduce the economic impact to the employer contributions and is considered reasonable per actuarial guidance.

Other Assumptions and Methods

The draft 2019 Investigation of Experience for Retirement Benefit Assumptions report also reviews other economic and non-economic (demographic) assumptions and valuation methods. Other assumptions and methods adjustments are discussed in Milliman's report but their impact is not as material to the valuation results when compared to changes proposed for the investment return, price inflation, and amortization period assumptions.
The plan actuary will review these assumptions and methods with the Board and may request the Board to consider adjusting some assumptions or valuation methods. For example, Milliman is recommending changing the mortality assumption tables to those more closely correlated with public retirement benefit plans. Staff agrees with this change as these assumptions better align with LACERA plan experience and are reviewed annually by the external auditor for reasonableness. Routinely changing these assumptions to best match the anticipated experience is considered an important tool in providing stable contribution rates.

Employer Contribution Rates Phase-in

LACERA elected to phase-in the increases in employer contribution rates over a three-year period when new assumptions were adopted with the previous 2016 Investigation of Experience. Instead of immediately recognizing the new employer contribution rates in the first year, the employer rates are stepped up over time. When the phase-in approach is applied, the employer contribution rates will be slightly higher in the third year as compared to if the new employer contribution rates were fully recognized in the first-year.

The phase-in of increases in employer contributions over a three-year period supports LACERA's fiduciary duty of legal authority set forth in the California Constitution, Article XVI, Section 17(a) to minimize the financial impact to the employer. LACERA staff recommends electing the phase-in of increases in the employer contribution rate over a three-year period, regardless of the economic assumptions selected as all recommendations increase employer contributions. LACERA staff believe this phase-in approach is reasonable as it minimizes the immediate impact to the employer plan sponsors and complies with actuarial standards.

Financial Impact

According to the 2019 Experience Study the Plan funded ratio is forecasted to fall from 80.7% based on a June 30, 2019 Valuation estimate with no assumption changes to 76.4% assuming the recommended economic and demographic assumption changes are implemented and the same June 30, 2019 Valuation date is used.

Also, by using the recommended assumption changes, Milliman is projecting an increase in total employer contributions. As a percentage of payroll the employer contribution is projected to rise from 21.3% (or $1.9 billion) to 24.5% (or $2.3 billion). This results in an estimated net increase of $105 million in fiscal year beginning (FYB) 2020; $216 million in FYB 2021; and $346 million in FYB 2022 in employer contributions over the projected employer contribution rates without the assumption and method changes. The gradual contribution increase is due to the three-year phase-in preferred by the plan sponsor.

If the recommended assumptions are adopted, member contribution rates are expected to increase, primarily due to the recommended decrease in the investment return assumption (see chart below). Note that Milliman is recommending larger increases in the merit salary increase assumption for Safety members than General members to reflect certain service levels where longevity increases occur for many Safety members resulting in higher salaries and future retirement benefits. As the merit salary increase assumption is used in the calculation of member rates, there is a much higher increase in the Safety member contribution rates as compared to the General members.

Estimated Member Contribution Rates

		Current		Alternative 2a		
	Plan	Total	$	Total	Increase	
Average Member Rate (Monthly)	General D	7.4%	$ 548	8.2%	0.8%	$ 59
	General G	8.4%	441	9.5%	1.1%	58
	Safety B	10.1%	1,051	11.9%	1.8%	187
	Safety C	13.7%	986	15.3%	1.6%	115

Staff received the attached letter (*Attachment III*) dated December 19, 2019 from the Los Angeles County Chief Executive Officer, Sachi Hamai regarding Milliman's draft 2019 Experience Study report which includes recommended changes to the economic and demographic assumptions. Ms. Hamai indicates in her letter that the County supports either Alternative 1b or 2a assuming a three-year phase-in of the employer contribution is implemented.

As a result, the County is in support of our recommendation to adopt the economic and demographic assumptions contained in Alternative 2a with a three-year phase-in of the employer contribution.

CONCLUSION

At the three most recent Board meetings, LACERA's actuary Milliman presented alternative assumptions and assumption combinations for the BOI to consider, which they described as recommended and acceptable. Milliman, will be present at the January 8, 2020, meeting to discuss the draft 2019 Investigation of Experience for Retirement Benefit Assumptions report and answer any questions you may have regarding the report.

While the Board may prudently work within range of the recommended and acceptable options laid out by Milliman, staff believes the constitutional balance is best met by staff's recommendations for the reasons explained.

Attachments

I. Draft 2019 Investment of Experience for Retirement Benefit Assumptions (Experience Study Report)
II. Draft Cavanaugh MacDonald's Actuarial Review report
III. County of Los Angeles Memo dated December 19, 2019
IV. Milliman's Presentation Slides dated January 8, 2020

SHK:tg
2019ExpStudy.BOI.Jan2020_Final.docx

c: Steven Rice
Richard Bendall
Bernie Buenaflor
Sachi Hamai

ATTACHMENT I

Draft 2019 Investment of Experience for Retirement Benefit Assumptions (Experience Study Report)

Note: At your request, we have provided this DRAFT Report prior to completion of our work. Because this is a draft Report, Milliman does not make any representation or warranty regarding the contents of the Report. Milliman advises any reader not to take any action in reliance on anything contained in the draft Report. All parts of this Report are subject to revision or correction prior to the release of the final Report, and such changes or corrections may be material. No distribution of this draft Report may be made without our express prior written consent.

Los Angeles County Employees Retirement Association

2019 Investigation of Experience for Retirement Benefit Assumptions

January 2020 Board Meeting

Prepared by:

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December 26, 2019

Board of Investments
Los Angeles County Employees Retirement Association
300 North Lake Avenue, Suite 820
Pasadena, CA 91101-4199

Re: **Los Angeles County Employees Retirement Association**

Dear Members of the Board:

It is a pleasure to submit this report of our investigation of the experience of the Los Angeles County Employees Retirement Association (LACERA) for the three-year period ending June 30, 2019. The results of this investigation are the basis for recommended changes in actuarial assumptions for the actuarial valuation of retirement benefits to be performed as of June 30, 2019.

The purpose of this report is to communicate the results of our review of the actuarial methods and the economic and demographic assumptions to be used in the completion of the upcoming valuation. Several of our recommendations represent changes from the prior methods or assumptions and are designed to better anticipate the emerging experience of LACERA.

We have provided financial information showing the estimated hypothetical impact of the recommended assumptions if they had been used in the June 30, 2018 actuarial valuation. We believe the recommended assumptions provide a reasonable estimate of anticipated experience affecting LACERA. Nevertheless, the emerging costs will vary from those presented in this report to the extent that actual experience differs from that projected by the actuarial assumptions. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following:

- Plan experience differing from the actuarial assumptions,
- Future changes in the actuarial assumptions,
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as potential additional contribution requirements due to changes in the plan's funded status), and
- Changes in the plan provisions or accounting standards.

Due to the scope of this assignment, we did not perform an analysis of the potential range of such measurements.

In preparing this report, we relied without audit on information (some oral and some in writing) supplied by LACERA's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We used LACERA's benefit provisions as stated in our June 30, 2018 Actuarial Valuation report. In our examination, after discussion with LACERA and making certain adjustments, we have found the data to be reasonably consistent and comparable with data used for other purposes. Since the experience study results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our determinations might need to be revised.

We certify that the assumptions developed in this report satisfy ASB Standards of Practice, in particular, No. 27 (Selection of Economic Assumptions for Measuring Pension Obligations) and No. 35 (Selection of Demographic and Other Non-Economic Assumptions for Measuring Pension Obligations).

This investigation of experience report recommends assumptions to be used in the valuation to provide an estimate of the System's financial condition as of a single date. The valuation can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Milliman's work is prepared solely for the internal business use of LACERA. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

(a) The System may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

(b) The System may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

We would like to acknowledge the help in the preparation of the data for this investigation given by the LACERA staff. We look forward to our discussions and the opportunity to respond to your questions and comments at your next meeting.

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

Sincerely,

Mark Olleman, FSA, EA, MAAA
Consulting Actuary

Nick Collier, ASA, EA, MAAA
Consulting Actuary

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

Table of Contents

1. Executive Summary and Recommendations

Milliman has performed the triennial investigation of experience for the period July 1, 2016 through June 30, 2019. This report contains the findings of this investigation and includes several recommended changes in assumptions.

Determining the adequacy of the current contribution rates is dependent on the assumptions used to project the future benefit payments and then to discount the value of future benefits to determine the present values. Therefore, the assumptions are critical in assisting the System in adequately funding future retirement benefits.

Summary

This section describes the key findings of this investigation of experience. We have recommended several changes to the demographic and economic assumptions. If adopted, these changes would have a material effect on the member and employer contribution rates effective July 1, 2020. The potential impact to the members is discussed on the next page. The potential impact to employers is discussed at the end of this section.

We will refer to our recommended assumptions as the “recommended” or “proposed” assumptions throughout this report. We have provided a summary of the proposed changes to the assumptions later in this section. The Board of Investments has the ultimate decision on the assumptions to be used in the actuarial valuation.

Introduction

Section 2 discusses the following:

- How the investigation of experience study was performed.
- Actuarial Standards of Practice No. 27 and No. 35.
- The presentation of results you will see in this report.

Actuarial Methods (Includes Amortization Periods and Member Contribution Rates)

Section 3 describes the actuarial methods used in performing our valuation and in assisting LACERA to administer the plan. We are recommending one change in the actuarial methods used in the valuation. Under LACERA’s current amortization policy, annual changes in the Unfunded Actuarial Accrued Liability (UAAL) are funded over separate 30-year periods as a level percentage of payroll. These annual payments are referred to as “layers.” We recommend that the 30-year period for these layers be changed to 20 years for future changes in the UAAL. 30 years is inconsistent with actuarial guidance and is longer than other California retirement systems.

We are not recommending any changes in the amortization periods for the existing amortization layers. However, it should be noted that some existing layers would still have amortization periods much longer than 20 years. One option for LACERA would be to combine all existing layers greater than 22 years and reamortize them over 22 years in the 2019 valuation. Under this approach, LACERA would be fully transitioned to 20-year amortization with the 2021 valuation. Either of these two approaches (no changes to existing layers, or changing to a 22-year maximum period for existing layers) would be appropriate for LACERA.

One additional option that we discussed with the Board of Investments was the reamortization of the full UAAL as of June 30, 2019 over a 25-year period, with future changes in the UAAL being amortized over 20-year periods. This weakens the funding of the existing UAAL by reducing the contribution rate for existing layers. However, Milliman would view this as reasonable if the change was combined with a reduction in the investment return assumption to 6.75%. Overall, Milliman would view this as strengthening funding, and it would result in each component of the assumptions and methods being acceptable.

We are also recommending an update to the operating tables LACERA uses in the calculation of optional forms of payment to reflect any changes in the COLA, mortality, and investment return assumptions.

Also note that new member rates will be computed based on the 2019 triennial valuation using the assumptions adopted. We have estimated the new member rates based on the proposed assumptions, as shown in Section 3. These estimates show that there will be material increases in member rates under the proposed assumptions. Note that the actual member contribution rates cannot be determined until completion of the June 30, 2019 valuation.

Sample member contribution rates are shown in the following table. We have shown the results under two economic scenarios: 1) the recommended investment return assumption of 6.75% and a wage growth assumption of 3.00%; and 2) a reasonable alternative investment return assumption of 7.00% and a wage growth assumption of 3.25%. We have shown these two sets as they were the two alternatives where most of the focus was during discussions between Milliman and the Board of Investments this fall. Note that all estimated member contribution rates also include the proposed demographic assumption changes and are the total member rate (i.e., Normal + COLA).

			Estimated Member Contribution Rates Effective July 1, 2020[1]	
	Entry Age	Currently in Effect[2]	Inv = 6.75% Wage = 3.00%	Inv = 7.00% Wage = 3.25%
General Members				
Plan D	25	6.27%	7.02%	6.83%
	35	7.83%	8.66%	8.43%
	45	9.78%	10.62%	10.33%
	55	11.57%	12.35%	12.00%
Plan G	All Ages	8.43%	9.46%	9.21%
Safety Members				
Plan B	25	11.00%	12.81%	12.42%
	35	13.57%	15.24%	14.75%
	45	16.20%	18.14%	17.56%
	55	16.35%	18.14%	17.55%
Plan C	All Ages	13.69%	15.33%	14.83%

1. Final member contribution rates will not be determined until the COLA portion is calculated in the June 30, 2019 actuarial valuation.

2. The rates currently in effect are based on the June 30, 2016 actuarial valuation and include an investment return assumption of 7.25% and a wage growth assumption of 3.25%.

Economic Assumptions

Section 4 discusses the economic assumptions: price inflation, general wage growth (includes price inflation and productivity), investment return, and future COLA increases. As with virtually all actuarial assumptions, there is not one right answer; however, we do believe there is considerable evidence that a lower investment return assumption is appropriate for LACERA. We have recommended a reduction in the investment return assumption to 6.75%. We have also included two alternative investment return assumptions of 6.50% or 7.00% in our discussion, which we believe would be reasonable with certain wage growth assumptions.

The most compelling reason to lower the investment return assumption is the lower expectation for future investment returns. The capital market assumptions reported by LACERA's general investment consultant, Meketa Investment Group (Meketa), forecast an expected net return based on LACERA's asset allocation of between 6.8% and 7.5% depending on the timeframe (10 to 20 years). Milliman's capital market assumptions are projecting a 6.4% net expected return for LACERA's target portfolio over the next 20 years (6.3% net expected return over 10 years).

Further, the capital market assumptions used in the analysis of the expected return were determined at January 2019 (or the end of 2018). Subsequent to those capital market assumptions being determined, there has been a significant decline in yields on fixed income which we believe will cause a drag on future expected returns, and an increase in the price-to-earnings ratio which leaves less room for future growth. Therefore, we recommend that the investment return assumption be lowered to 6.75% (net of both investment and administration expenses). Note that we relied upon both Meketa's and Milliman's capital market assumptions in making this recommendation, as well as a survey of other investment consultants.

As detailed in Section 4, there is an expectation for lower price inflation in both the short and long term. In particular, there has been a sustained period of low inflation, with a 2.2% average increase over the 20-year period ending in 2018. Looking forward, there is a continued expectation of low price inflation, as evidenced by the current (November, 2019) implied inflation expectation of approximately 1.7% based on the difference in yield between 30-year Treasury Inflation-Protected Securities (TIPS) and a regular 30-year treasury bond. However, it should be noted that CPI increases in the Los Angeles area have been 1.0% higher over the last four years than the national average, which most forecasts are focused on.

We recommend a price inflation assumption of either 2.50% (if the investment return assumption is lowered to 6.75% or less) or 2.75%. We recommend the wage inflation assumption be set equal to the price inflation plus 0.5% (either 3.00% or 3.25%), as there is a high correlation between price and wage inflation. We recommend a reduction in the assumed cost-of-living adjustment (COLA) for retiree benefits for most Plan A retirees if the price inflation assumption is reduced.

The following table shows our recommended assumption set, along with two alternatives.

	Economic Assumptions			
Assumption	**Current**	**Recommended**	**Alternative A**	**Alternative B**
Investment Return[1]	7.25%	6.75%	7.00%	6.50%
General Wage Growth	3.25%	3.00% or 3.25%	3.25%	3.00%
Payroll Growth	3.25%	3.00% or 3.25%	3.25%	3.00%
Price Inflation	2.75%	2.50% or 2.75%	2.75%	2.50%
Future Retiree COLAs[2] (Plan A / Other Plans)	2.75% / 2.00%	2.50% / 2.00% or 2.75% / 2.00%	2.75% / 2.00%	2.50% / 2.00%

1. Net of both investment and administration expenses. For GASB financial reporting, the recommended investment return assumption is 0.13% higher.

2. The first of the two numbers applies to Plan A; the second number applies to the remainder of the plans (although the Plan E COLA is pro-rated based on pre-2002 service). To account for existing Plan A COLA balances, retirees and beneficiaries with a retirement date prior to April 1, 1981 are assumed to receive 3.00% annual COLAs.

Analysis by Compensation Level

In our analysis of the active demographic assumptions (merit salary, active death, service retirement, disability, and termination), we reflected the impact of compensation levels by weighting the results by compensation. That is, a member with annual compensation of $80,000 has twice the impact on the observed rates in comparison to a member with annual compensation of $40,000. We observed some differences in member behavior based on compensation. For example, members with higher levels of compensation tended to have higher probabilities of retiring at a given age. These compensation-weighted probabilities are shown as the “Actual” bars in the graphs in Section 5 through Section 9.

Merit Salary Increases

Section 5 discusses the individual salary increases due to promotion and longevity – the merit component of salaries. Merit salary increases were higher than assumed increases, primarily for Safety members. We are recommending small increases in the assumption for General members to reflect actual experience. For Safety members, we are recommending small increases at most service levels and large increases at certain service levels where longevity increases occur for many members.

Death from Active Status

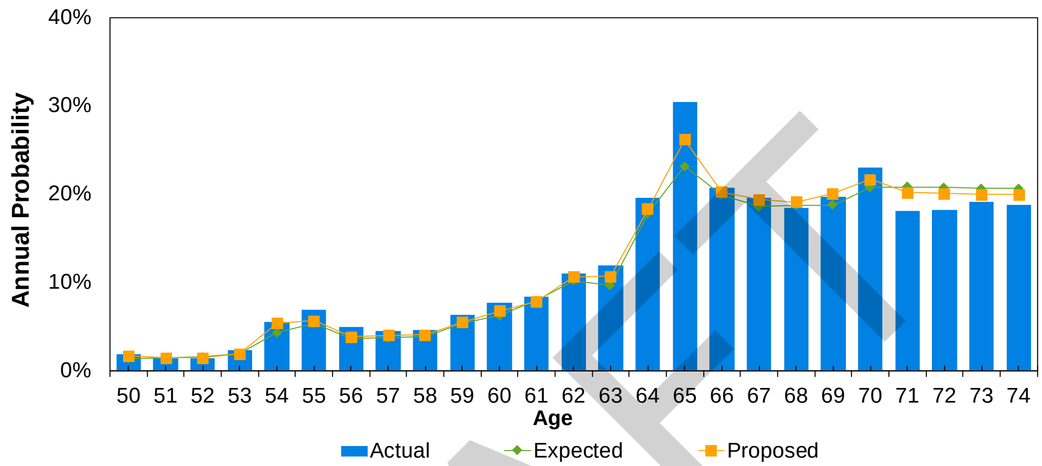
Section 6 discusses the probability of a member dying while in active employment. For nonservice-connected deaths, the actual rates were greater than what the current assumptions predicted. We are recommending updating the assumptions to new active employee mortality tables specific to public plans. The recommended tables result in a small increase in the assumed mortality. For the service-connected death assumption, we are not recommending a change given the limited data for this assumption.

Service Retirement

Section 7 discusses the probability of an eligible active member taking a service retirement at a specific age. The results of our study showed actual retirement rates that were generally equal to or greater than the assumptions. The current assumptions expected 7,050 retirements among all active members; 7,569 actually occurred, resulting in a total Actual-to-Expected ratio of 107%. We have recommended increases to service retirement rates for Safety B members and some minor changes to General Plans D and E. We have also recommended new separate tables for General G and Safety C to reflect their specific age factors.

The following graph shows the actual experience for all members from the current experience study (light blue bars). The proposed assumptions are shown as an orange line and compared to the current assumptions (green line). As the graph illustrates, the overall changes were relatively small.

Service Retirement Rates – All Plans



Disability Retirement

Section 8 discusses the probability of an active member becoming disabled. We studied both service-connected disability and nonservice-connected disability. The results were as follows:

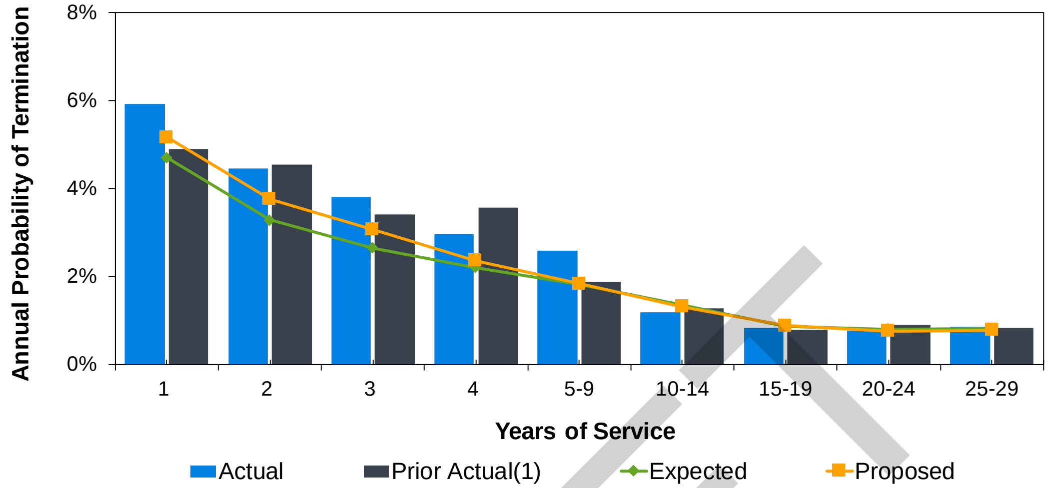
Type	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
Service-Connected	640	788	81%	661	97%
Nonservice-Connected	55	81	68%	77	71%
Total	**695**	**869**	**80%**	**738**	**94%**

For disability retirements, actual experience was less than expected. We are recommending reductions to the assumed rates to better fit actual experience, primarily to the service-connected disability rates.

Termination

Section 9 summarizes the results of our study of terminations of employment for reasons other than death, service retirement, or disability. The current assumptions expected 3,324 terminations and 3,890 actually occurred, resulting in a total Actual-to-Expected ratio of 117%. We have recommended increases to the termination rates at service less than five years.

The following graph shows the actual experience for all members from the current experience study (light blue bars), as well as the average experience from the prior two experience studies (dark gray bars). The proposed assumptions are shown as an orange line and compared to the current assumptions (green line).



1. Prior Actual numbers reflect average experience from last two studies (2016 and 2013).

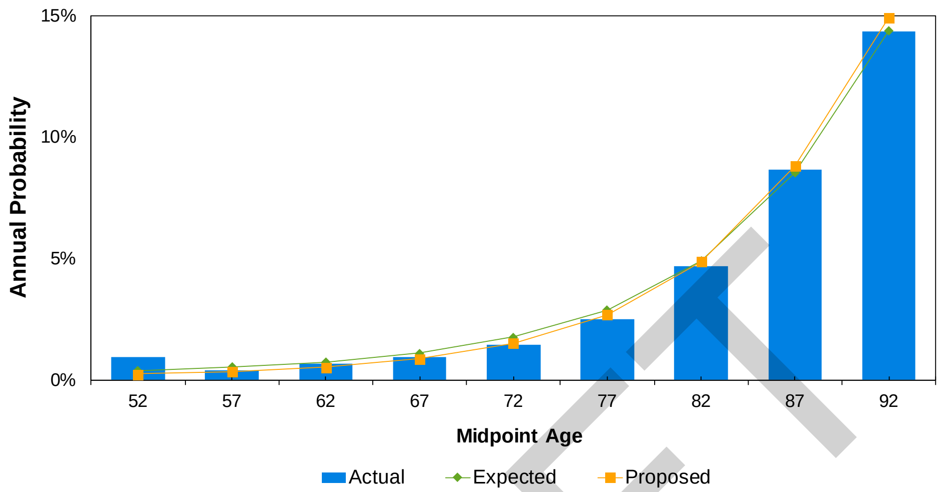
Probability of Refund

In Section 10, we report the actual number of vested members electing a refund upon termination was 91% of the expected number. We are recommending small reductions in this assumption to reflect the recent experience.

Retiree Mortality

The mortality assumption is used to predict the life expectancy of both members currently in pay status and those expected to receive a benefit in the future. The results of the study showed there were 3% more deaths than the assumptions predicted. However, retirees with larger-than-average benefits tend to have lower mortality than those with smaller-than-average benefits. Adjusting for the impact of the benefit levels on mortality, there were actually 6% fewer deaths than assumed. That is, the assumptions projected that 6% more benefits would stop being paid during the period than actually occurred.

We are recommending new retiree mortality rates based on recently published tables that are specific to public plan general and safety members, with adjustments to match LACERA experience. Under the recommended tables the assumptions are very close to actual experience, after accounting for the impact of benefit levels. The graph below shows the results of the study for service retirees on a benefit-weighted basis.



We are also recommending the continued use of a projection scale that reflects the gradual year-to-year improvement in mortality that is expected to occur in the future. This approach is sometimes referred to as "generational mortality" because it results in the succeeding generation of members living longer than the preceding one. We are not recommending any changes to the projection scale. Additional details are provided in Section 11.

Miscellaneous Assumptions

Section 12 discusses some other assumptions that are made. We are recommending the following:

- Retain the current assumption for the probability a member will have an eligible survivor at retirement who is eligible for the unreduced continuance benefit.
- Increase the assumed retirement age for deferred vested members for General Plan D. Retain the current assumption for all other plans.
- Retain the current assumption for the probability of a deferred vested member establishing reciprocity and retiring with another system.

Summary of Recommendations

The following table summarizes our recommendations. The next section provides an overview of the financial impact of these proposed changes.

Assumption	Recommendation
Actuarial Methods (Amortization)	Amortize future changes in the UAAL over 20 years. For existing amortization layers, either 1) continue to amortize the existing layers over the current periods; or 2) amortize all existing layers over the shorter of the current period and 22 years. A full reset at 25 years would also be reasonable if a 6.75% investment return assumption is adopted.
Other Actuarial Methods	Update operating tables used in the calculation of optional forms of payment to include recommended changes.
Economic	

Assumption	Economic Assumptions Current	Economic Assumptions Recommended
Investment Return	7.25%	6.75%
General Wage Growth	3.25%	3.00% or 3.25%
Payroll Growth	3.25%	3.00% or 3.25%
Price Inflation	2.75%	2.50% or 2.75%
Future Retiree COLAs (Plan A / Other Plans)	2.75% / 2.00%	2.50% / 2.00% or 2.75% / 2.00%

Assumption	Recommendation
Merit Salary Increase	Increases, primarily for Safety plans.
Death While Active	Move to updated tables specific to public plans with adjustments for consistency with LACERA experience.
Service Retirement	Small increases to General Plans D and E and Safety plans.
Disability Retirement	Reductions to both service-connected disability and nonservice-connected disability rates.
Termination	Small increases in rates at lower levels of service. Extend termination rates beyond 20 years for Safety C members.
Probability of Refund	Small reductions.
Retiree Mortality	Move to updated tables specific to public plans with adjustments for consistency with LACERA experience.
Miscellaneous	Increase the assumed retirement age for deferred vested members for General Plan D.

Estimated Financial Impact

The estimated financial impact of the proposed changes to the economic assumptions, if adopted, is expected to be significant. For the recommended demographic assumptions, the financial impact will be smaller, but is still projected to result in a material increase in the employer contribution rates. The following exhibit is designed to give the reader an idea of how the proposed changes may affect LACERA as a whole. Note that these estimates represent the immediate impact. Ultimately, the long-term costs should approximately balance out, so, for example, the proposed assumptions with the lower investment return component will require more contributions in the short term but will ultimately require less contributions in the future than the current set of assumptions.

The financial impact was evaluated by performing additional valuations with the June 30, 2018 valuation data and benefits, and reflecting the proposed assumption changes. This allows us to evaluate the relative financial impact of the various proposed changes. We have projected these results forward to June 30, 2019. Note that the impact of the various assumption changes by component is somewhat dependent on the order in which they are evaluated.

We have shown the estimated financial impact based on the recommended 6.75% investment return assumption and a 3.00% wage growth assumption. We have shown this set of economic assumptions because the Board of Investments has previously indicated a preference for this assumption compared to our alternative recommendation of a 6.75% investment return assumption with a 3.25% wage growth assumption.

Projected Results of June 30, 2019 Valuation
With Proposed Assumptions

	Funded Ratio	Total Employer Contribution % of Payroll	Total Employer Contribution $ millions
June 30, 2018 Valuation	**80.6%**	**20.9%**	**$ 1,771**
Preliminary Estimate of Year-to-Year Change	0.1%	0.4%	93
Est. June 30, 2019 Valuation (no changes)	**80.7%**	**21.3%**	**$ 1,864**
Recommended Economic & 20-Year Amortization of New UAAL Layers			
6.75% Interest / 3.00% Wage / 2.50% CPI	-3.9%	4.0%	$ 350
Recommended Demographic Assumptions			
Merit Salary	-0.2%	0.4%	$ 35
Post-Retirement Mortality	0.1%	0.0%	-
Rates of Retirement	-0.2%	0.3%	26
All Other Changes	-0.1%	0.1%	9
Subtotal Demographic Change	-0.4%	0.8%	$ 70
Summary			
Est. June 30, 2019 Valuation (no changes)	80.7%	21.3%	$ 1,864
Economic Assumptions	-3.9%	4.0%	350
Demographic Assumptions	-0.4%	0.8%	70
Total Assumption Changes	-4.3%	4.8%	$ 420
Est. June 30, 2019 Valuation with Changes(1)(2)	**76.4%**	**26.1%**	**$ 2,284**

1. Impact estimated based on June 30, 2018 actuarial valuation. New assumptions will be implemented with the June 30, 2019 actuarial valuation and affect contribution rates effective July 1, 2020, so actual results will vary. A 20-year amortization of changes in the June 30, 2019 UAAL is included in the estimate.

2. Impact of proposed changes will vary by plan; however, relative increase for the combined General plans and the combined Safety plans should be similar.

Reset of Amortization Period

As discussed at the bottom of page 1 of this report, one option that we have discussed with the Board of Investments is the reamortization of the full UAAL as of June 30, 2019 over a 25-year period, with future changes in the UAAL being amortized over 20-year periods. The following table shows the estimated financial impact of a 25-year reamortization of the UAAL.

	Funded Ratio	Total Employer Contribution % of Payroll	Total Employer Contribution $ millions
25-Year Reamortization of UAAL			
Est. June 30, 2019 Valuation (no changes)	80.7%	21.3%	$ 1,864
Combined Assumption Changes	-4.3%	4.8%	420
25-Year Reamortization Impact	0.0%	-1.4%	(123)
Adjusted Financial Impact with Reamoritzation	-4.3%	3.4%	$ 297
Est. June 30, 2019 Valuation	**76.4%**	**24.7%**	**$ 2,161**

Estimated Financial Impact of Alternative Reasonable Assumptions

Milliman has provided the estimated financial impact of a number of reasonable alternative assumptions during our presentations to the Board of Investments. As previously noted, one of the reasonable alternatives that has been extensively discussed during our presentations is a 7.00% investment return assumption with a 3.25% wage growth assumption and a 20-year amortization of future changes in the UAAL. We estimate that this alternative would have a 77.8% Funded Ratio and a total employer contribution rate of 24.7% of pay if the change in assumptions were fully recognized in the June 30, 2019 actuarial valuation.

Phase-in of Employer Contribution Rates

When new assumptions were adopted following the previous investigation of experience, LACERA elected to phase-in the increases in employer contribution rates over a three-year period. That is, in the first year, one-third of the increase was recognized followed by two-thirds in the second year. In the third year, no adjustment was made as the full increase was recognized. Note that this results in a slightly higher employer contribution rate in the third year than if the increase in the employer contribution rates was fully recognized in the first year .

This approach is acceptable under actuarial guidance, and we believe it continues to be a reasonable approach for LACERA. We provided LACERA with estimates of the financial impact of using the three-year phase-in approach at the December Board of Investments meeting.

Conclusion

We recommend that the Board adopt the proposed actuarial assumptions shown in Appendix A. We believe these assumptions reasonably reflect future expectations. Other assumption packages may be reasonable, and we have provided information on other assumptions that we feel are reasonable.

2. Introduction

Funding and Valuation Principles

While our goal is to make the best possible estimate of future experience, it is important for the Board to recognize that the future will almost certainly differ from our current best efforts to forecast it. Routine scheduled reevaluations of the actuarial assumptions, such as through this experience investigation, are a sound methodology to identify where assumptions differ from emerging experience and to fine-tune the actuarial estimates to keep them as close as possible to emerging experience.

It is expected that there will be years in which the actual investment return will exceed the actuarial assumption, and there will be years when the actual experience will not meet the assumed rate. It is the annualized expected median long-term rate that is used to actuarially project and finance the retirement benefits.

Recognition should be made that a higher investment return assumption will tend to lower required contributions in the short term (and higher required contributions in the long term), while a lower investment return assumption will tend to require higher contributions in the short term (and lower required contributions in the long term). However, the actual contributions will ultimately be determined by the actual experience, so in the long term, this should approximately balance out.

The actuarial assumptions are usually divided into two groups: economic and demographic. The economic assumptions must not only reflect LACERA's actual experience but also give even greater consideration to the long-term expectation of future economic growth for the nation as well as the global economy.

The non-economic, or demographic assumptions, are based on LACERA's actual experience, adjusted to reflect trends and historical experience. Thus, the economic assumptions are much more subjective than the demographic assumptions, and the demographic assumptions are much more dependent on recent experience.

Overview

This report presents the results of an investigation of the recent actuarial experience of LACERA. We will refer to this investigation as an experience study.

Throughout this report, we refer to "expected" and "proposed" actuarial assumptions. The "expected" assumptions are those used for our actuarial valuation of LACERA as of June 30, 2018. They may also be referred to as the "current" assumptions. These assumptions and methods were adopted by the Board based on Milliman's 2016 experience study. The "proposed" or "recommended" assumptions are those we recommend for use in the valuation as of June 30, 2019 and for subsequent valuations until further changes are made.

The choice of economic assumptions (investment return, general wage growth, payroll increase, and COLA increase) is discussed in Section 4 of this report. These assumptions are generally chosen on the basis of expectations as to the effect of future economic conditions on the operation of LACERA. However, the setting of these assumptions is much more subjective than the setting and recommending of demographic assumptions.

Sections 5 through 12 of this report show the results of our study of demographic assumptions. These assumptions tend to be more objective than the economic assumptions. The exhibits are detailed comparisons between actual and expected decrements (members leaving active or retired status, for reasons such as retirement or death) on both the current and proposed bases. Each exhibit is identified by two numbers corresponding to the section of the report and the specific exhibit within that section. For example, Exhibit 7-1 is referred to in Section 7, retirement rates.

For each type of assumption, graphs show the actual, the expected and proposed rates, usually by some combination of gender, plan, years of service, and age. The exhibits also show the total numbers of actual and expected terminations. Ratios larger than 100% on the current basis generally indicate that the rates may need to be raised; ratios smaller than 100% generally indicate that rates may need to be lowered.

For each exhibit, the actual decrement rates for the current and prior period are shown as bar graphs on either a quinquennial-age basis, a years-of-service basis, or, in the case of retirement rates, on an age-by-age basis. The current assumptions – the "expected" rates – used in the June 30, 2018 actuarial valuation, are shown, as well as the new proposed assumptions, as line graphs. Therefore, the assumption changes we are proposing are illustrated by the difference between the two lines in each exhibit. Note that in cases where no change is being proposed, only the expected rate line is shown.

Actuarial Standard of Practice No. 27

The Actuarial Standards Board has adopted Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*. This standard provides guidance to actuaries giving advice on selecting economic assumptions for measuring obligations under defined benefit plans such as LACERA.

Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

ASOP 27 states that each economic assumption selected by the actuary should be reasonable. The assumption is reasonable if it has the following characteristics:

- It is appropriate for the purpose of the measurement.
- It reflects the actuary's professional judgment.
- It takes into account relevant historical and current economic data.
- It reflects the actuary's estimate of future experience and observation of the estimates in market data.
- It has no significant bias (i.e., it is not significantly optimistic or pessimistic), but may specifically make provision for adverse deviation.

Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

In our opinion, the economic assumptions we recommend for Retirement Board consideration in this report have been developed in accordance with ASOP No. 27.

Actuarial Standard of Practice No. 35: Selection of Demographic Assumptions

Actuarial Standard of Practice No. 35 (ASOP No. 35) governs the selection of demographic and other non-economic assumptions for measuring pension obligations. ASOP No. 35 states that the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the defined benefit plan that is the subject of the measurement.

ASOP 35 Steps

The actuary should follow these steps in selecting the demographic assumptions:

1. **Identify the types of assumptions.** Types of demographic assumptions include but are not limited to: retirement, mortality, termination of employment, disability, election of optional forms of payment, administrative expenses, family composition, and treatment of missing or incomplete data. The actuary should consider the purpose and nature of the measurement, the materiality of each assumption, and the characteristics of the covered group in determining which types of assumptions should be incorporated into the actuarial model.
2. **Consider the relevant assumption universe.** The relevant assumption universe includes experience studies or published tables based on the experience of other representative populations, the experience of the plan sponsor, the effects of plan design, general trends, and future expectations.
3. **Consider the assumption format.** The assumption format includes whether assumptions are based on parameters such as gender, age, service, or calendar year. The actuary should consider the impact the format may have on the results, the availability of relevant information, the potential to model anticipated plan experience, and the size of the covered population.
4. **Select the Specific Assumptions.** In selecting an assumption the actuary should consider the potential impact of future plan design as well as the factors listed above.
5. **Select a Reasonable Assumption.** The assumption should be expected to appropriately model the contingency being measured. The assumption should not be anticipated to produce significant actuarial gains or losses.

ASOP 35 General Considerations and Application

Each individual demographic assumption should satisfy the criteria of ASOP No. 35. In selecting demographic assumptions, the actuary should also consider: the internal consistency between the assumptions, materiality, cost effectiveness, and the combined effect of all assumptions. At each measurement date, the actuary should consider whether the selected assumptions continue to be reasonable, but the actuary is not required to do a complete assumption study at each measurement date. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with ASOP No. 35.

3. Actuarial Methods

As part of the triennial investigation, we have reviewed the valuation methods and other issues related to the actuarial assumptions.

- **Actuarial Cost Method:** The actuarial valuation is prepared using the entry age actuarial cost method. We believe that this cost method is appropriate for LACERA's valuation. It is also the cost method that is required for financial reporting under GASB Statements 67 and 68. We recommend no change. Note that this is by far the most common method used for public sector retirement systems, as it results in more stability in normal costs and provides a level allocation of costs over each individual's working lifetime.
- **Valuation Assets:** We believe that the current asset valuation method where gains and losses are smoothed over five years is appropriate for LACERA's valuation. A five-year period is used by a majority of large public retirement systems. We recommend no change.

  Under LACERA's funding policy, the reserve value for STAR benefits is included in the Valuation Assets; however, the liability for any STAR benefits that may be granted in the future is not included in the liability portion of valuation. At the time decision this decision was made, our recommendation was to exclude the STAR reserve from the Valuation Assets for consistency with the treatment of STAR benefits. If the funding policy is revisited, we recommend the STAR reserved be excluded from the valuation assets.

It should be noted that the California Actuary Advisory Panel (CAAP) has published a paper on model actuarial funding policies which include guidelines for asset smoothing. LACERA's method of five-year smoothing without a corridor falls in the "Acceptable Practices" category under these guidelines (categories described below for reference). The only difference between LACERA's method and the method described in the "Model Practices" is that it includes a corridor of no greater than 50% to 150%, and LACERA has no corridor for five-year smoothing. We believe a five-year period is short enough that a corridor is not needed.

Categories Under CAAP Guidelines	
Model Practices	Those practices most consistent with the Level Cost Acturial Model (LCAM) developed by CAAP.
Acceptable Practices	Generally those which, while not consistent with the LCAM, are well established in practice and typically do not require additional analysis.
Acceptable Practices with Conditions	May be acceptable in some circumstances either to reflect different policy objectives or on the basis of additional analysis.
Non-Recommended Practices	Systems using these practices should acknowledge the policy concerns identified in the CAAP Guidelines.
Unacceptable Practices	No description provided by CAAP, but implication appears to be clear.

Operating Tables

We are recommending changes in the investment return and mortality assumptions and have included possible changes to the COLA increase assumptions. If any of these changes are adopted, the operating tables should be updated to reflect the changes.

Blended Mortality Table

We have studied the following factors that apply to the blended mortality tables used in the operating factors:

- **Gender Proportion:** We found that males account for 33% of the total present value of benefits for current General members and 86% for current Safety members.

  We are recommending the General Unisex mortality table use a blending of 35% male and 65% female (no change) and the Safety Unisex mortality table use a blending of 85% male and 15% female (was 90%/10%).
- **Assumed Retirement Year:** Since generational mortality rates vary by age and year, theoretically new operating tables would be needed every year. For administrative simplicity, we recommend using the mortality tables based on the member's age in the year 2023. This is three years in the future from the implementation date. This is expected to allow for use of the new mortality table for the next six years.
- **Retirement Type:** LACERA uses healthy mortality (i.e., the mortality table used for service retirees) in cases where a members as a disability, but the benefit is based on the service retirement formula. We believe this continues to be a reasonable approach.

  Reflecting the proposed assumptions in the optional monthly annuities would result in changes in the modified (or Unmodified Plus) benefit amount for future retirees who elect optional forms of payment. It would not affect the unmodified benefit.

Sample member contribution rates are shown in the following table. We have shown the results under two economic scenarios: 1) the recommended investment return assumption of 6.75% and a wage growth assumption of 3.00%; and 2) a reasonable alternative investment return assumption of 7.00% and a wage growth assumption of 3.25%. We have shown these two sets as they were the two alternatives where most of the focus was during discussions between Milliman and the Board of Investments this fall. Note that all estimated member contribution rates include the proposed demographic assumption changes and are the total member rate (i.e., Normal + COLA).

			Estimated Member Contribution Rates Effective July 1, 2020[1]	
	Entry Age	**Currently in Effect[2]**	**Inv = 6.75% Wage = 3.00%**	**Inv = 7.00% Wage = 3.25%**
General Members				
Plan D	25	6.27%	7.02%	6.83%
	35	7.83%	8.66%	8.43%
	45	9.78%	10.62%	10.33%
	55	11.57%	12.35%	12.00%
Plan G	All Ages	8.43%	9.46%	9.21%
Safety Members				
Plan B	25	11.00%	12.81%	12.42%
	35	13.57%	15.24%	14.75%
	45	16.20%	18.14%	17.56%
	55	16.35%	18.14%	17.55%
Plan C	All Ages	13.69%	15.33%	14.83%

1. Final member contribution rates will not be determined until the COLA portion is calculated in the June 30, 2019 actuarial valuation.

2. The rates currently in effect are based on the June 30, 2016 actuarial valuation and include an investment return assumption of 7.25% and a wage growth assumption of 3.25%.

4. Economic Assumptions

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, provides guidance to actuaries giving advice on selecting economic assumptions for measuring obligations under defined benefit plans. As future events are unknown, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience. To meet the standard, the assumption should reflect "the actuary's estimate of future experience" and "it has no significant bias (i.e., it is not significantly optimistic or pessimistic)…"

Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

This section will discuss the economic assumptions. We have recommended two potential reductions in the price inflation assumption with corresponding reductions in the investment return, wage inflation, and COLA increase (for Plan A) assumptions. We believe either of these sets of assumptions satisfy ASOP No. 27.

The following table shows our recommendation and the alternative assumption sets.

Economic Assumptions	Current Assumptions	Recommended Assumptions Alternative #1	Recommended Assumptions Alternative #2
Investment Return(1)	7.25%	6.75%	6.75%
General Wage Growth	3.25%	3.25%	3.00%
Payroll Growth	3.25%	3.25%	3.00%
Price Inflation	2.75%	2.75%	2.50%
COLAs for Retirees(2)	2.75% / 2.00%	2.75% / 2.00%	2.50% / 2.00%

1. Net of both investment and administration expenses. For GASB financial reporting, the recommended investment return assumption is 0.13% higher.

2. The first of the two numbers applies to Plan A; the second number applies to the remainder of the plans (although the Plan E COLA is pro-rated percentage of 2.00% based on pre-2002 service). To account for existing Plan A COLA balances, retirees and beneficiaries with a retirement date prior to April 1, 1981 are assumed to receive 3.00% annual COLAs.

1. Price Inflation

Use in the Valuation

When we refer to inflation in this report, we are generally referring to price inflation. The inflation assumption has an indirect impact on the results of the actuarial valuation through the development of the assumptions for investment return, general wage increases and the payroll increase assumption. It does not have a direct impact on the valuation results, except where it affects the assumed COLA to be paid.

The long-term relationship between inflation and investment return has long been recognized by economists. The basic principle is that the investors demand a "real return" – the excess of actual investment returns over inflation. If inflation rates are expected to be high, investors will demand investment returns that are also expected to be high enough to exceed inflation, while lower inflation rates will result in lower expected investment returns, at least in the long run.

The current valuation assumption for inflation is 2.75% per year. Our recommendation is to retain the assumption, or consider lowering it to 2.50% (if the investment return assumption is lowered to 6.75% or less).

Historical Perspective

The data for inflation shown below is based on the national Consumer Price Index, US City Average, All Urban Consumers (CPI-U) as published by the Bureau of Labor Statistics.

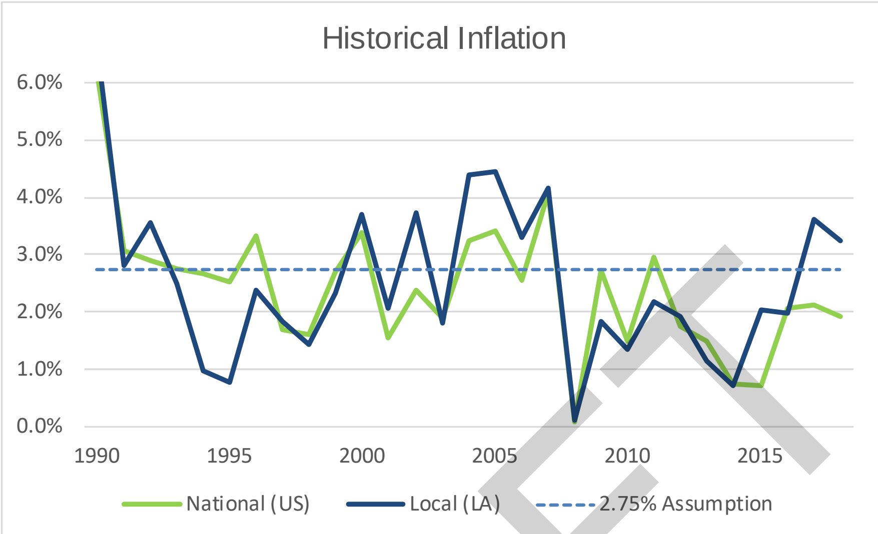
Although economic activities in general and inflation in particular, do not lend themselves to prediction on the basis of historical analysis, historical patterns and long term trends are a factor to be considered in developing the inflation assumption.

There are numerous ways to review historical data, with significantly differing results. The table below shows the compounded annual inflation rate for various 10-year periods, and for the 50-year period ended in December 2018. Note that the 50-year average is heavily influenced by the inflation of the late 1970s and early 1980s. The last 30 years have averaged closer to 2.5%.

Decade	CPI Increase
2009-2018	1.8%
1999-2008	2.5%
1989-1998	3.1%
1979-1988	5.9%
1969-1978	6.7%
Prior 50 Years	
1969-2018	4.0%

These are national statistics. The inflation assumption as it relates to the investment return assumption should be based more on national and even global inflation; whereas, the inflation assumption used in the wage growth, payroll growth, and COLA increase assumptions is tied to inflation in California. We believe that although there have been historical differences between U.S. and California CPI changes, in the long term there should be a high correlation. For comparison, the average CPI increase for California has been 4.2% for the 50-year period 1966-2018, compared to the national average of 4.0%.

The following graph shows historical CPI increases since 1990. The national CPI increase has generally been less than 2.75% over the last 10 years of the period. Also shown for comparison are CPI increases specific to the Los Angeles area. These have tracked fairly close to the national statistics, although over the last four years, local CPI has exceeded the national CPI by 1.0% on average.



Forecasts of Inflation

Since the U.S. Treasury started issuing inflation indexed bonds, it is possible to determine the approximate rate of inflation anticipated by the financial markets by comparing the yields on inflation indexed bonds with traditional fixed government bonds. Current market prices as of November 2019 suggest investors expect inflation to be about 1.7% over the next 30 years. Most forecasts of future price inflation by economists and investment professionals are lower than 2.75%, although they are generally 2.0% or greater.

Additionally, we reviewed the expected increase in the CPI by the Office of the Chief Actuary for the Social Security Administration. In the 2019 Trustees Report, the projected average annual increase in the CPI over the next 75 years under the intermediate cost assumptions was 2.60%.

Recommendation

The price inflation assumption is not used in determining LACERA's funding and thus has no direct impact on the contribution rates; however, it is a factor in our recommendations for the wage growth, COLA, and investment return assumptions.

Given that LACERA has recently experienced both greater-than-assumed COLAs and wage increases, it would be reasonable to leave the inflation assumption at 2.75%. Forecasts on a national basis are for lower inflation, so it would also be reasonable to lower the inflation assumption to 2.50%.

Consumer Price Inflation	
Current Assumption	2.75%
Recommended Alternative #1	2.75%
Recommended Alternative #2	2.50%

2. Wage Growth

Use in the Valuation

Estimates of future salaries are based on two types of assumptions: 1) general wage increase and 2) merit increase. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary increases due to promotion and longevity generally occur even in the absence of inflation. The promotion and longevity assumptions, referred to as the merit scale, will be reviewed with the other demographic assumptions (see Section 5).

The current assumption is for wage growth of 0.50% above the inflation assumption.

Historical Perspective

We have used statistics from the Social Security Administration on the National Average Wage back to 1969.

There are numerous ways to review this data. For consistency with our observations of other indices, the table below shows the compounded annual rates of wage growth for various 10-year periods and for the 50-year period ending in 2018. The excess of wage growth over price inflation represents “productivity” (or the increase in the standard of living, also called the real wage inflation rate).

Decade	Wage Growth	CPI Increase	Real Wage Inflation
2009-2018	2.2%	1.8%	0.4%
1999-2008	3.7%	2.5%	1.2%
1989-1998	4.1%	3.1%	1.0%
1979-1988	6.2%	5.9%	0.3%
1969-1978	6.6%	6.7%	-0.1%
Prior 50 Years			
1969-2018	4.5%	4.0%	0.5%

LACERA-Specific Experience

We reviewed the increase in the average compensation for LACERA members since 1989. Over that period, the average compensation increased by 3.10% annually, compared to a 2.53% average annual increase in inflation. Therefore, for LACERA members only, we estimate real wage inflation has averaged 0.57% (3.10% less 2.53%) over the last three decades.

Forecasts of Future Wages

Wage inflation has been projected by the Office of the Chief Actuary of the Social Security Administration. In the 2019 Trustees Report, the ultimate long-term annual increase in the National Average Wage is estimated to be 1.2% higher than the Social Security intermediate inflation assumption of 2.6% per year.

Recommendation

Over the last 50 years, the actual experience, on a national basis, has been close to the current assumption, although this has varied considerably by decade. Over the most recent 10-year period, the real wage growth has been 0.4%, after being higher than the assumption for each of the two decades before that. Actual experience for employees participating in LACERA has also been close to the assumption over the last 30 years. We believe that wages will continue to grow at a greater rate than prices over the long term, although not to the extent projected by Social Security. We are recommending that the long-term assumed real wage inflation rate remain at 0.50% per year.

Real Wage Inflation Rate	
Current assumption	0.50%
Recommended assumption	0.50%

The wage growth assumption is the total of the consumer price inflation assumption and the real wage inflation rate. If the real wage inflation assumption remains at 0.50% and the price inflation assumption is set at 2.50% or 2.75%, this would result in a total wage growth assumption of 3.00% or 3.25% respectively.

Payroll Increase Assumption

In addition to setting salary assumptions for individual members, the aggregate payroll of LACERA is expected to increase, without accounting for the possibility of an increase in membership. See comments on growth in membership discussed below.

The current payroll increase assumption is equal to the general wage growth assumption of 3.25%. It is our general recommendation to set these two assumptions to be equal, unless there is a specific circumstance that would call for an alternative assumption. We are recommending that the payroll increase assumption continue to be set equal to total wage growth assumption.

Growth in Active Membership

We propose continuing the assumption that no future growth or decline in active membership will occur. This assumption affects the Unfunded Actuarial Accrued Liability (UAAL) amortization payment rate. With no assumed growth in membership, future salaries are assumed to grow due to wage growth increases only. If increases should occur because of additional members, there will be a larger pool of salaries over which to spread the UAAL, if any, resulting in an actuarial gain.

3. Investment Return

Use in the Valuation

The investment return assumption is one of the primary determinants in the calculation of the expected cost of LACERA's benefits, providing a discount of the future benefit payments that reflects the time value of money. This assumption has a direct impact on the calculation of liabilities, normal costs, member contribution rates, and the factors for optional forms of benefits. The current investment return assumption for LACERA is 7.25% per year, net of all administrative and investment-related expenses.

Expected Long-Term Investment Return

To estimate the expected long-term return we have looked at capital market assumptions from three sources: Milliman, Meketa (LACERA's external investment consultant, and a survey of other investment consulting firms (Horizon Survey of Capital Market Assumptions, 2019 edition). We have combined these capital market assumptions with LACERA's target asset allocation. The target asset allocation is summarized in the following table:

Class	Target Allocation
Global Equity	35%
Private Equity	10%
Opportunistic Real Estate	2%
High Yield Bonds	3%
Bank Loans	4%
Emerging Market Debt	2%
Illiquid Credit	3%
Core / Value-Add Real Estate	7%
Natural Resources / Commodities	4%
Private Infrastructure	3%
TIPs	3%
Investment Grade Bonds	19%
Diversified Hedge Funds	4%
Cash	1%

Combining the capital market assumptions with the target asset allocation policy, we calculated both the 10- and 20-year expected returns for each of the three sources. These expected returns have been reduced for administrative and investment expenses, as discussed later, and are the median expected return on a geometric basis for LACERA's assets. Note that we have also indicated the associated inflation assumptions for the capital market assumptions. A higher inflation assumption will generally lead to a higher expected return.

	Meketa	Milliman	Horizon
Based on 10-Year Assumptions			
Median Annualized Return	**6.8%**	**6.3%**	**6.6%**
Assumed Inflation	2.1%	2.3%	2.2%
Based on 20-Year Assumptions			
Median Annualized Return	**7.5%**	**6.4%**	**7.3%**
Assumed Inflation	2.6%	2.3%	2.3%

Notes:

1. Returns are net of assumed expenses of 0.18% of assets.
2. The Horizon Survey reports a limited number of asset classes. In cases where there was not a corresponding asset class in the survey, Meketa's assumptions for the corresponding time horizon were used.
3. Horizon 10-year assumptions include some consultants with less than 10 years. Horizon 20-year assumptions include some consultants with more than 20 years and are based on a subgroup of less than half of the full group.

When actuaries recommend the investment return assumption, they generally consider a long-term time horizon. As LACERA is a mature plan (over half the value of accrued liabilities are expected to be paid in the next 15 years), we have considered both the 10-year and 20-year time horizons in making our recommendation. This reflects the time horizon over which the majority of LACERA's acturial accrued liability is to be paid.

Timing of Capital Market Assumptions

The capital market assumptions used in this analysis were determined as of January 2019 (or the end of 2018). Subsequent to those capital market assumptions being determined, there has been a significant decline in yields on fixed income which we believe will cause a drag on future expected returns, and an increase in the price-to-earnings ratio which leaves less room for future growth. At the October Board of Investments meeting, Meketa indicated that they also expect to see a decline in the expected return. We have considered this decrease in expected future returns in making our recommendations, but have not directly reflected it in our analysis.

Administrative and Investment-Related Expenses

The investment return used for the valuation is assumed to be net of all administrative and investment-related expenses. Most asset classes in the Milliman capital market assumptions are effectively net of investment expenses. It is our understanding this is true for Meketa and the investment consultants included in the Horizon survey. Asset classes that are readily marketable, such as global equity and fixed income, do not reflect expenses in the expected return assumption. For those classes, we assume investment fees based on the cost of indexing, as it is unlikely LACERA would pay active managers unless it was expected the return could at least match the index return. Additionally, we adjust for other investment-related expenses, such as internal investment staff and outside consultants. Our assumption is that investment expenses will be 0.05% of assets.

The following table shows the ratio of administrative expenses to the LACERA Plan assets over the last 10 fiscal years ending June 30. The expense ratio is calculated as the expense amount divided by the ending asset balance at fair market value.

($million) Year Beginning	Beginning Market Assets	Admin. Expense Amount	Admin. Expense Ratio
2009	$30,499	$49	0.16%
2010	33,434	51	0.15
2011	39,452	50	0.13
2012	38,307	54	0.14
2013	41,774	59	0.14
2014	47,722	63	0.13
2015	48,818	67	0.14
2016	47,847	67	0.14
2017	52,743	67	0.13
2018	56,300	71	0.13

For the administrative expenses, we have assumed no change in the current assumption of 0.13% of market assets, as the actual ratio has been close to this over the last five years. Accounting for this, combined with the 0.05% we have assumed for investment-related expenses, we have included a reduction of 0.18% in our calculation of the expected return. For example, Meketa calculated a 7.0% 10-year expected return; we have used 6.8% in our analysis, reflecting this 0.18% reduction.

The expense assumption does not have a direct impact on the actuarial valuation results, but it does provide a measure of gross return on investments that will be needed to meet the actuarial assumption used for the valuation. For example, our recommended investment return assumption is 6.75%, so LACERA would need to earn a gross return on its assets of 6.93% in order to net the 6.75% for funding purposes.

We recommend the 0.13% adjustment for administrative expenses be added to the investment return assumption adopted to determine the discount rate used in LACERA's GASB 67 and 68 valuations, as GASB requires the discount rate to be the long-term expected rate of return gross of administrative expenses, but not investment expenses.

Excess Earnings

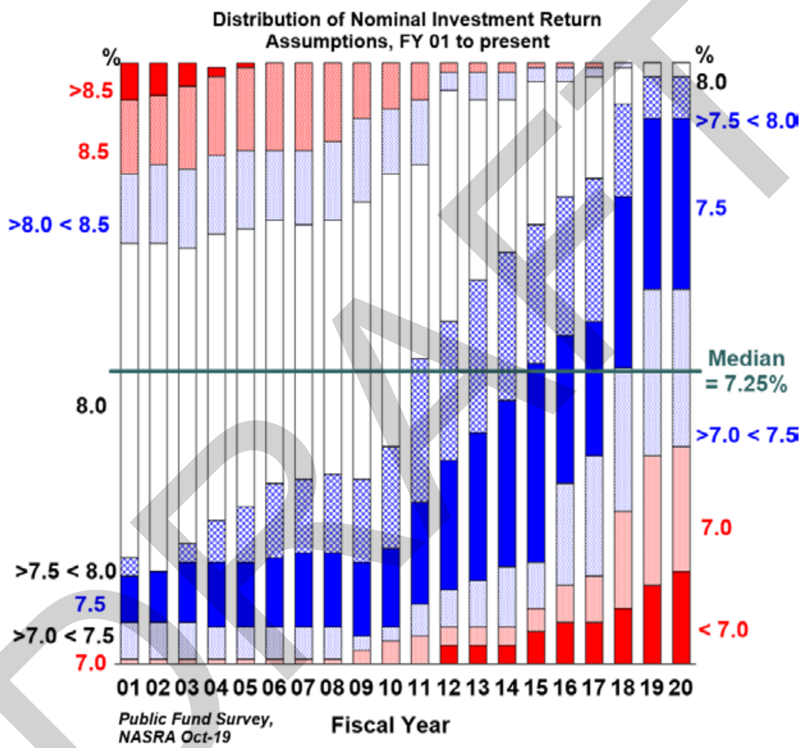
Section 31592.2 of the 1937 Act provides the Retirement Board with the authority to set aside earnings of the retirement fund during any year in excess of the total interest credited to contributions when such surplus exceeds 1.00% of the total assets of the retirement system.

Under LACERA's Retirement Benefit Funding Policy, it is the intention of the Board of Investments to distribute no excess earnings unless the plan is fully funded and then to only provide limited benefits on the basis of excess earnings after the plan is fully funded. Since it is expected to be quite some time before LACERA once again reaches full funding status, the likelihood of any excess earnings being distributed for discretionary benefits is quite low in the foreseeable future. Further Section 7522.44 may further restrict the Board's ability to distribute excess earnings. Therefore, for purposes of the 2019 experience study, we do not propose to recognize any additional excess earnings benefits for future years when setting the investment return assumption. This issue should be addressed again in 2022 as part of the 2022 assumption study.

If the Board of Investments determines that the fund should share excess earnings with members when times are good, but the fund is not able to collect additional revenue when investment returns lag expectations, there is a cost to LACERA over time. Thus, if the Board changes its policy toward excess earnings, it must find some way to recognize an obligation for benefits attributable to excess earnings. An excess earnings policy would result in increased payments made by LACERA to members over the long term. If these potential future benefits are not recognized in setting the investment return assumption or in determining LACERA's future benefit payments, the total liabilities will be understated.

Peer System Comparison

According to the *Public Fund Survey*, the average investment return assumption for statewide systems has been steadily declining. As of the most recent study, the median rate is 7.25%. The following chart shows a progression of the distribution of the investment return assumptions. In 2001, very few systems had an assumption of 7.25% or lower and over 80% had an assumption of 8.0% or greater. As of fiscal year 2019, over 50% have an assumption of 7.25% or less and this is continuing to trend down.



Cost Implications of Changes in Investment Return Assumption

In most retirement systems with variable contribution rates, such as LACERA, the greatest factor contributing to the volatility of contribution rates is the return on investments. If, in the future, the full actuarial assumption of 7.25% is not able to be credited to the valuation reserves, there may be an increase in the employer contribution rate. The base member contribution rates are determined based on the '37 Act statutes, the actuarial assumptions, and the benefit provisions and are not affected by asset values. The COLA portion of the member rates also does not reflect asset values. Therefore, any experience gain or loss in investments is not expected to directly impact the member contribution rates but will impact the employer contribution rates.

To assist the Board in understanding the sensitivity to changes in the investment return rate assumption, we revalued the 2018 valuation results using the recommended investment return assumption of 6.75%, as well as an alternative of 7.00%. This is discussed in the Financial Impact section of the Executive Summary.

Conclusion

Based on Meketa's January 2019 capital market assumptions, there is slightly more than a 50% probability that the current investment return of 7.25% will be met over the next 20 years; however, there is less than a 50% probability that the current investment return of 7.25% will be met over the next 10 years. Based on Milliman's capital market assumptions, the probability of meeting 7.25% is materially less than 50% over all time horizons. Further, expected returns have declined since January 2019. Therefore, we are recommending a reduction in the investment return assumption to 6.75%.

Investment Return (net of all expenses)	
Current assumption	7.25%
Recommended	6.75%
Reasonable Alternatives	6.50% or 7.00%

Post-Retirement Cost-of-Living Adjustments (COLA)

The current assumption is that retiree COLAs will be equal to the maximum COLA level provided by the plan (3% for Plan A, up to 2% for Plan E based on the individual, and 2% for the other plans), but not greater than the price inflation assumption. We recommend this assumption be continued. This means that if the price inflation is reduced, the assumed COLA for Plan A should be reduced to that level. The only exception is that to account for existing Plan A COLA balances, retirees and beneficiaries with a retirement date prior to April 1, 1981 are assumed to receive 3.00% annual COLAs.

5. Salary Increases Due to Promotion and Longevity (Merit Increases)

As discussed in Section 4, estimates of future salaries are based on assumptions for two types of increases:

1. Increases in each individual's salary due to promotion or longevity, which occur even in the absence of inflation; and
2. Increases in the general wage level of the membership, which are closely related to inflation and increases in productivity.

In section 4, we reviewed the general wage growth assumption. In this section, we will study increases due to promotion or longevity. We generally refer to these increases as merit increases.

Results

Merit increases are assumed to be related to two factors. We studied each of these factors to see if they were significant, and, if so, what the impact was. Our findings were as follows:

- **Service:** Members in the early stages of their careers tend to get larger merit increases. In other studies, we have found years of service to have the most significant impact on merit increases. We found this to be true with LACERA.
- **Membership:** The current rates assume that Safety members receive slightly larger salary increases than General members later in their career. As noted in the Methodology section below, we studied a longer period this year. Based on this study, we observed that Safety members received significantly larger merit increases at certain service levels (19, 24 and 29 years of service). We reviewed the most recent contract for deputy sheriffs and confirmed that the contract has included longevity pay increases at those service levels for a number of years. Note that other Safety groups have different provisions in their contracts, but given the size of the deputy sheriff group, it is clearly having a significant impact. Therefore, we believe the results of the study are valid and are recommending changes to reflect the actual experience.

Methodology

In studying merit increases, we first calculated the increase in member salaries that was due to general wage growth for each year of the study. For each individual we then calculated the total salary increase by comparing salaries for successive years. The merit increase was then identified by removing the general wage growth portion from the member's total salary increase.

There can be significant year-to-year variations in the calculated general wage growth, which can in turn cause disparities in the observed merit salary increases. To reduce these variations, we are using longer time frames in our studies of merit salary increases. For LACERA, we have used a 15-year period.

Recommendation

Merit salary increases were higher than assumed increases, primarily for Safety members. We are recommending small increases in the assumption for General members to reflect actual experience. For Safety members, we are recommending small increases at most service levels and large increases at service years 19, 24, and 29. The assumed rates are shown numerically in Appendix A.

Exhibit 5-1
Salary Increases by Service – General Members

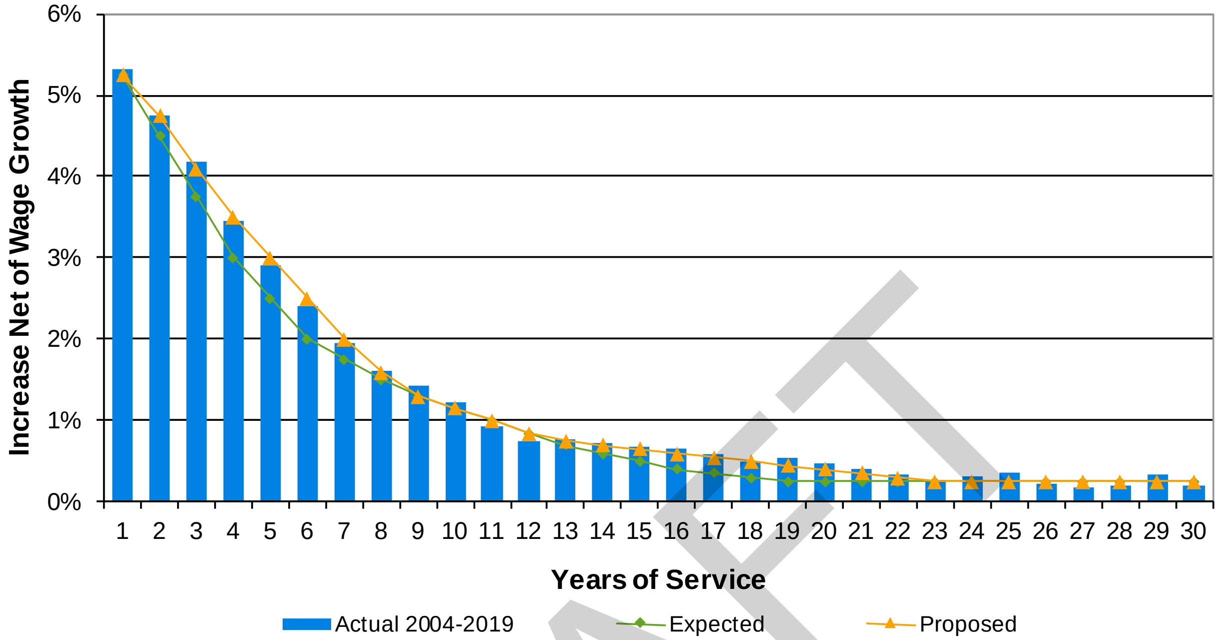
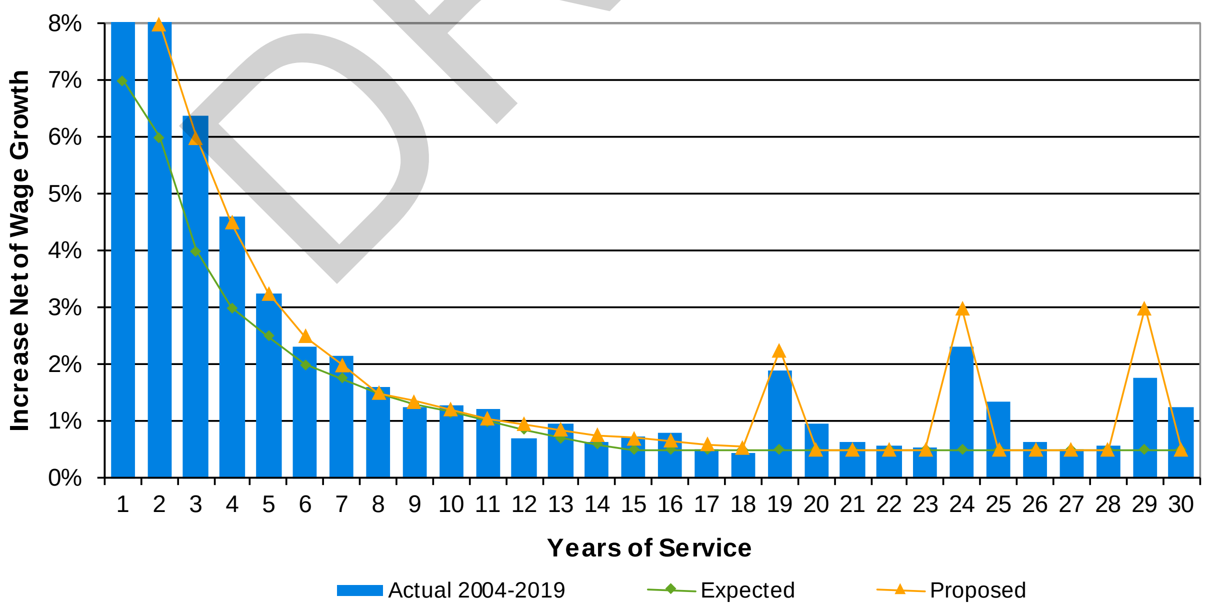


Exhibit 5-2
Salary Increases by Service – Safety Members



6. Death from Active Status

We studied rates of mortality among active members. At any given age, the current assumption is a lower probability of death for an active member than for a retired member. We feel this is reasonable as a person who is actively working tends to be healthier on average, and therefore less likely to die than the general population.

Results: Service-Connected Deaths

The current assumptions for service-connected deaths are zero for General members and 0.01% per year for Safety members. Since the actual experience is extremely limited, we recommend retaining the current service-connected death assumption for active members. The data is not a statistically significant enough size to merit studying separately.

Results: Nonservice-Connected Deaths (Ordinary Deaths)

The following is a comparison of the actual-to-expected deaths of active members by plan and gender for this study period. We have recommended changes to the ordinary death rates to reflect more recent mortality tables based on experience for public sector retirement systems. The recommended tables are discussed on the following page.

Plan	Gender	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General A-D & G[1]	Male	125	99	126%	104	120%
General A-D & G[1]	Female	152	130	117%	127	120%
Safety	Male	30	24	125%	28	107%
Safety	Female	1	3	33%	3	33%
	Total	**308**	**256**	**120%**	**262**	**118%**

1. Note that Plan E has been excluded from this study, as we believe that these deaths are under-reported because Plan E does not provide a death benefit for active members.

The results of the study are shown graphically in Exhibits 6-1 to 6-4. The proposed rates are also shown numerically in Appendix A. The rates are currently based on three factors. We studied each of these factors to see if they were significant, and, if so, what the impact was. Our findings were as follows:

- **Age:** Members at older ages tend to have a greater probability of dying than younger members. This is almost universally true in mortality studies.
- **Gender:** Male members tend to have a greater probability of dying than females. This trend is generally true for all mortality studies, and we found this to be true with LACERA.
- **Membership:** Safety members have comparatively lower rates of mortality than the general population. These lower rates of death while still in active employment are most likely a result of the much earlier retirement ages available to Safety members and their higher rates of disability while active. That is, Safety members who are less healthy than the rest of the population will tend to leave active employment sooner, and only the healthiest group remains in active Safety employment at ages 50 and above when there is a higher probability of active death.

Additionally, we looked at the impact of the compensation level on active mortality rates. We observed that members with lower compensation levels had higher rates of mortality. The graphs at the end of this section reflect the compensation-weighted probabilities of death while active.

New Public Plan-Specific Mortality Tables

In 2019, the Society of Actuaries published new mortality tables based on data from public sector retirement systems. In particular, tables specific to general and safety members were included. We compared how well the current LACERA mortality tables and the new class-specific mortality table matched the actual experience. Based on our analysis, we found that the tables matched well with the retired mortality experience. There was more variation among the active member groups, which is typical of what we see with other systems. We are recommending a change to the new tables.

Recommendation

Based on results of the study, we have recommended lowering the member death rates as follows:

Class	Gender	Current Table		Proposed Table
General	Male	RP 2014E Male, Generational[(1)]	-2	PubG-2010 (120%) Employee Male[(2)]
General	Female	RP 2014E Female, Generational[(1)]	-0	PubG-2010 (130%) Employee Female[(2)]
Safety	Male	RP 2014E Male, Generational[(1)]	-6	PubS-2010 (100%) Employee Male[(2)]
Safety	Female	RP 2014E Female, Generational[(1)]	-0	PubS-2010 (100%) Employee Female[(2)]

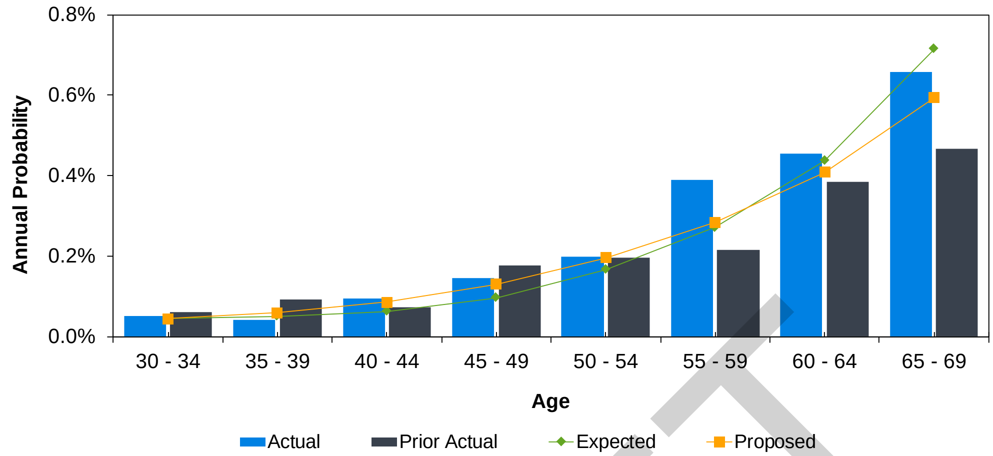
1. All tables are the RP-2014 Employee mortality table with mortality improvement based on 100% of the MP-201 Ultimate projection scale.

2. All tables are the Pub-2010 Employee mortality tables for General and Safety members, with mortality improvement based on 100% of the MP-2019 Ultimate projection scale.

To reflect future increase in life expectancies, we are recommending continued use of the same mortality improvement projection scale. Note that the public-specific mortality tables did not include projections scales. See Section 11 (Retiree Mortality) for additional discussion on this topic.

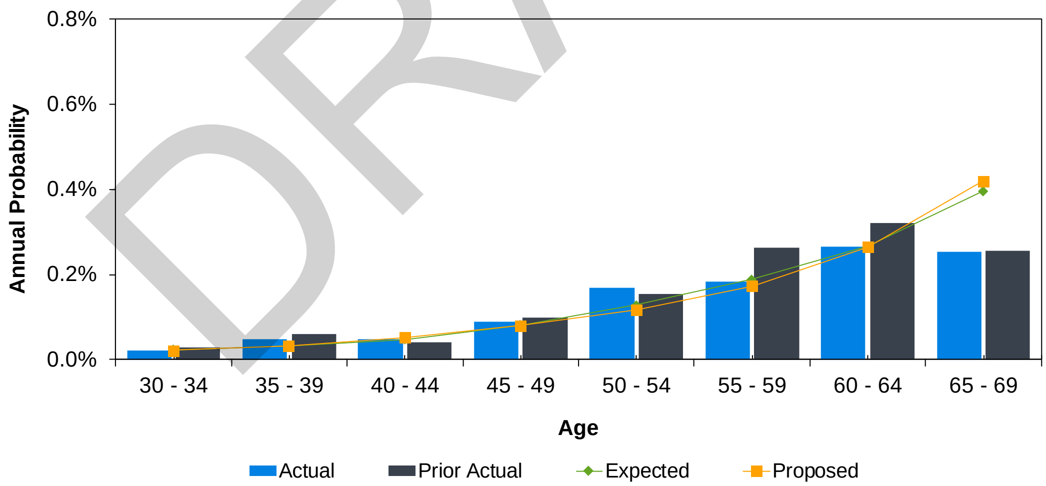
There is insufficient data for female Safety members to perform an analysis that is statistically significant. We have recommended the female Safety member nonservice-connected death rate be set equal to the female General member assumption. This is consistent with the current assumption.

Exhibit 6-1
Nonservice-Connected Death – General A-D & G Male Members



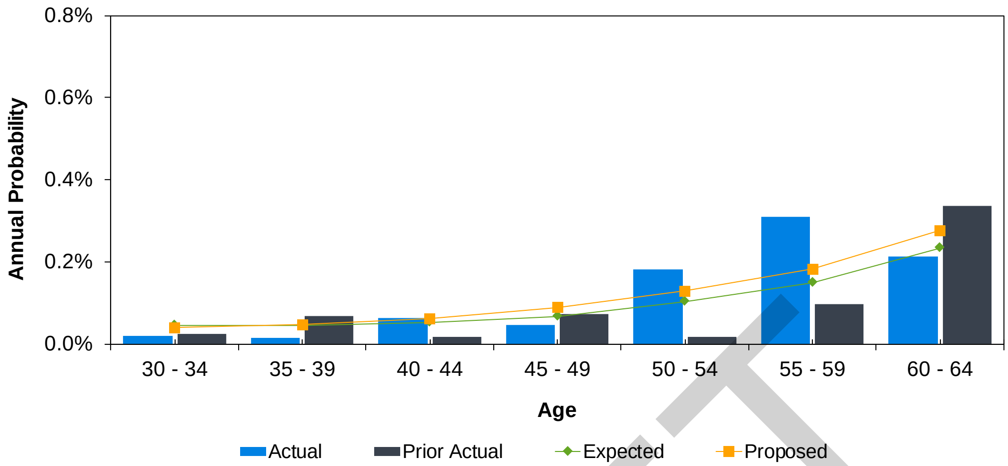
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	99	125	104
Actual / Expected	126%		120%

Exhibit 6-2
Nonservice-Connected Death – General A-D & G Female Members



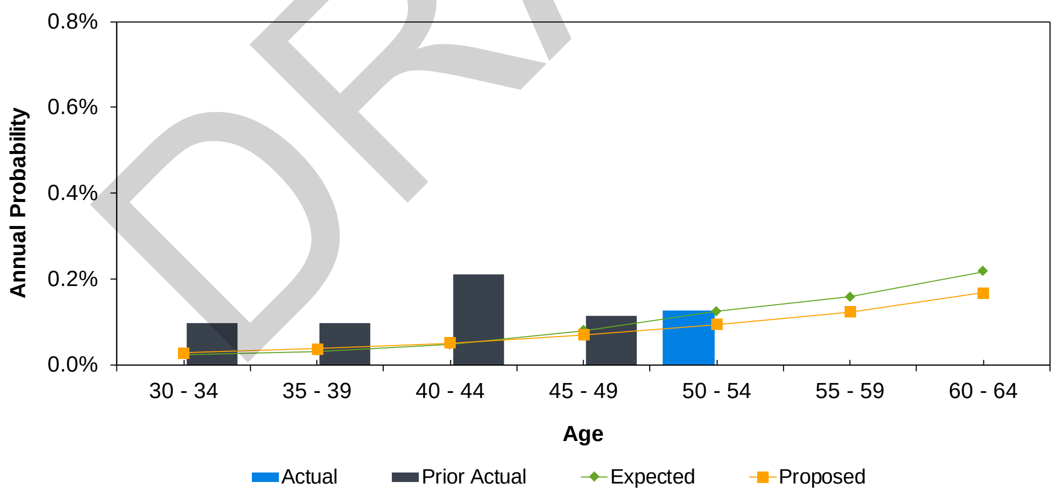
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	130	152	127
Actual / Expected	117%		120%

Exhibit 6-3
Nonservice-Connected Death – Safety Male Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	24	30	28
Actual / Expected	125%		107%

Exhibit 6-4
Nonservice-Connected Death – Safety Female Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	3	1	3
Actual / Expected	33%		33%

7. Service Retirements

Exhibits in this section present comparisons of actual service retirements during the study period with those expected according to the actuarial assumptions used in our June 30, 2018 valuation. Overall, the actual number of service retirements exceeded the number expected, although there were some differences by plan.

Results

For General D and Safety A & B plan members, the actual number of retirements exceeded the expected number.

Plan	Actual	Expected	Actual / Expected
General A-C	218	244	89%
General D	3,829	3,375	113%
General E	2,387	2,423	99%
Safety A & B	1,135	1,008	113%
Total	**7,569**	**7,050**	**107%**

Counts reported for General members are for ages 50-74;
counts reported for Safety members are for ages less than 65.

Retirement rates are currently based on two factors. We studied each of these factors to see if they were significant, and, if so, what the impact was. Our findings were as follows:

- **Age:** For General members, probabilities of retirement tend to be higher at ages 60 and above than at earlier ages. Additionally, there tend to be even higher rates at ages 62, 65, 66, and 67, likely due to the impact of Medicare and Social Security. The trend is less pronounced for LACERA than we generally see in other systems, since the County has not participated in Social Security since 1982.
- **Membership:** The older, closed General Plans A-C have higher rates of retirement than the younger Plans D and E, likely due to the more valuable benefit formula at the younger ages for these plans. Safety members are currently assumed to have retired from active status by age 65 and have much higher rates of retirement between ages 55 and 60 than the General members. General members are assumed to have retired from active status by age 75. Note that we have excluded the new plans (General G and Safety C) as there were insufficient members eligible for retirement during the period to analyze their experience.

Additionally, we looked at the impact of the compensation level on service retirement rates. We observed that members with higher compensation have higher probabilities of retiring at a given age. The graphs at the end of this section reflect the compensation-weighted probabilities of service retirement.

Recommendation

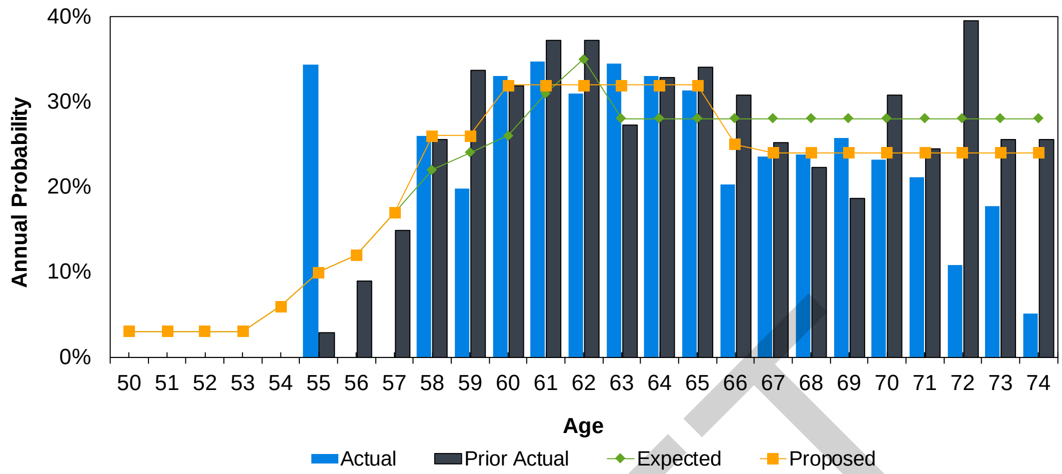
We are recommending some changes in the rates of retirement, as shown in Exhibits 7-1 to 7-4. These are primarily increases in the assumed service retirement rates. We have also recommended new tables for General G and Safety C to reflect their specific age factors. The new proposed rates are shown numerically in Appendix A. The recommended changes will increase the number of expected retirements.

The results reflecting the proposed assumptions are shown in the following table:

Plan	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General A-C	218	244	89%	243	90%
General D	3,829	3,375	113%	3,584	107%
General E	2,387	2,423	99%	2,506	95%
Safety A & B	1,135	1,008	113%	1,073	106%
Total	**7,569**	**7,050**	**107%**	**7,406**	**102%**

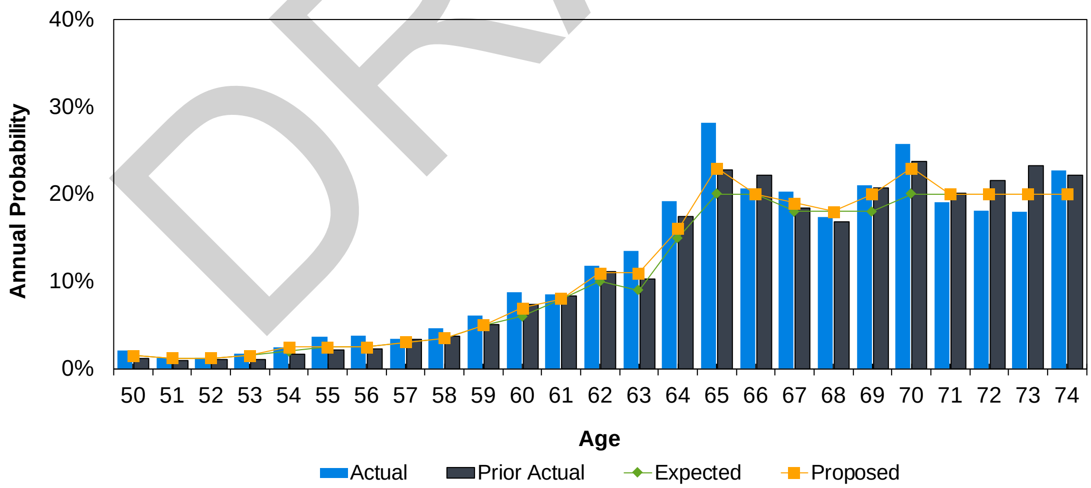
Counts reported for General members for ages 50-74; counts reported for Safety members are for ages less than 65.

Exhibit 7-1
Service Retirement – General A, B & C Members



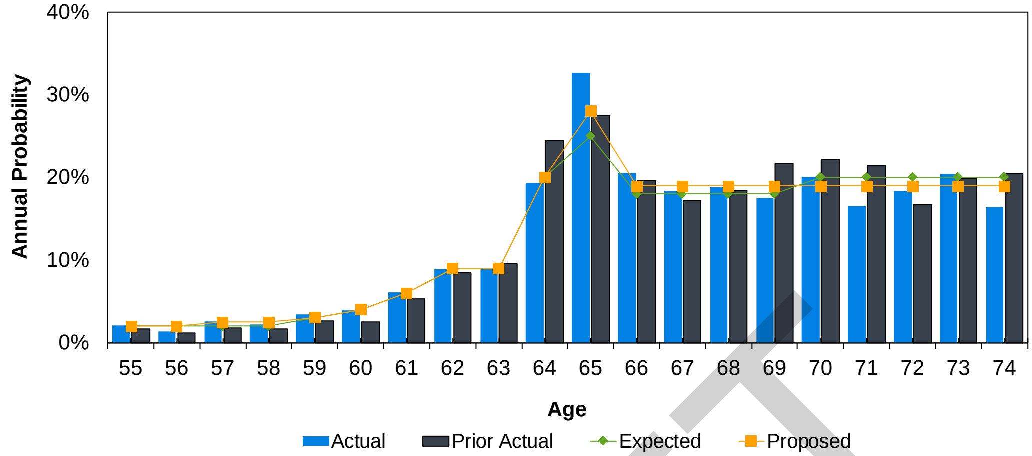
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	244	218	243
Actual / Expected	89%		90%

Exhibit 7-2
Service Retirement – General D Members



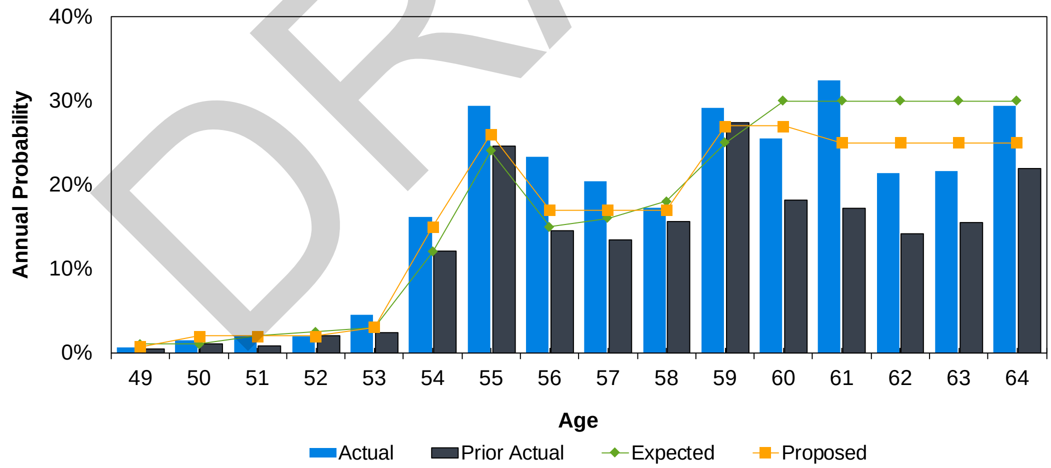
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	3,375	3,829	3,584
Actual / Expected	113%		107%

Exhibit 7-3
Service Retirement – General E Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	2,423	2,387	2,506
Actual / Expected	99%		95%

Exhibit 7-4
Service Retirement – Safety Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	1,008	1,135	1,073
Actual / Expected	113%		106%

8. Disability Retirements

LACERA allows a member to start receiving benefits prior to eligibility for service retirement if the member becomes disabled. There are two types of disability:

- **Service-Connected Disability:** This is available only to members who are disabled for the performance of duty. There is no service requirement for this benefit, and the service-connected disability benefit generally pays a larger benefit than nonservice-connected disability.
- **Nonservice-Connected Disability:** This is available to a disabled member upon satisfying the vesting requirement.

Results: Service-Connected Disability

Overall, we found there were fewer service-connected disabilities than the current rates predicted. The following is a comparison of the actual to expected service-connected disabilities for active members by gender and plan for this study period.

Plan	Gender	Actual	Expected	Actual / Expected
General A-D & G	Male	76	92	83%
General A-D & G	Female	132	133	99%
Safety	Male	355	490	72%
Safety	Female	77	73	105%
	Total	**640**	**788**	**81%**

Exhibits 8-1 to 8-4, at the end of this section, show the results of the study graphically. The rates are currently based on age, gender, and plan membership. Our findings were as follows:

- **Age:** Members at older ages tend to have a greater probability of becoming disabled than younger members.
- **Gender:** For General members, males have a higher rate of disability than females. For Safety members, females tend to have higher rates (relative to males) at younger ages.
- **Membership:** Safety members have significantly higher rates of disability than General members; therefore, separate rates are recommended for each class. All General contributory members were studied together. Plan E does not provide for disability benefits and is therefore excluded from the study.

Recommendation: Service-Connected Disability

Male General and Safety members experienced fewer service-connected disabilities than were expected by the current assumptions. We are recommending adjustments primarily at older ages to better fit the actual pattern of disability retirements.

Actual experience for female General and Safety members was close to the assumptions for each class. We are recommending minor adjustments to better fit the actual pattern of disability retirements for both General and Safety female members.

The revised results are shown in the following table:

Plan	Gender	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General A-D & G	Male	76	92	83%	89	85%
General A-D & G	Female	132	133	99%	129	102%
Safety	Male	355	490	72%	370	96%
Safety	Female	77	73	105%	73	105%
	Total	**640**	**788**	**81%**	**661**	**97%**

Results: Nonservice-Connected Disability

Overall, we found there were fewer nonservice-connected disabilities than the current rates would have predicted, which is the opposite of our findings from the prior study. The following is a comparison of the actual-to-expected nonservice-connected disabilities for active members by plan and gender for this study period.

Plan	Gender	Actual	Expected	Actual / Expected
General A-D & G	Male	20	27	74%
General A-D & G	Female	34	54	63%
Safety	Male	0	0	N/A
Safety	Female	1	0	N/A
	Total	**55**	**81**	**68%**

Exhibits 8-5 to 8-6 show the results of the study graphically. We studied rates by gender, age, and plan. Our findings were as follows:

- Age: Members at older ages tend to have a greater probability of becoming disabled than younger members.
- Gender: Females tend to have slightly higher disability rates at younger ages than males.
- Membership: There were very few nonservice-connected disabilities for Safety members.

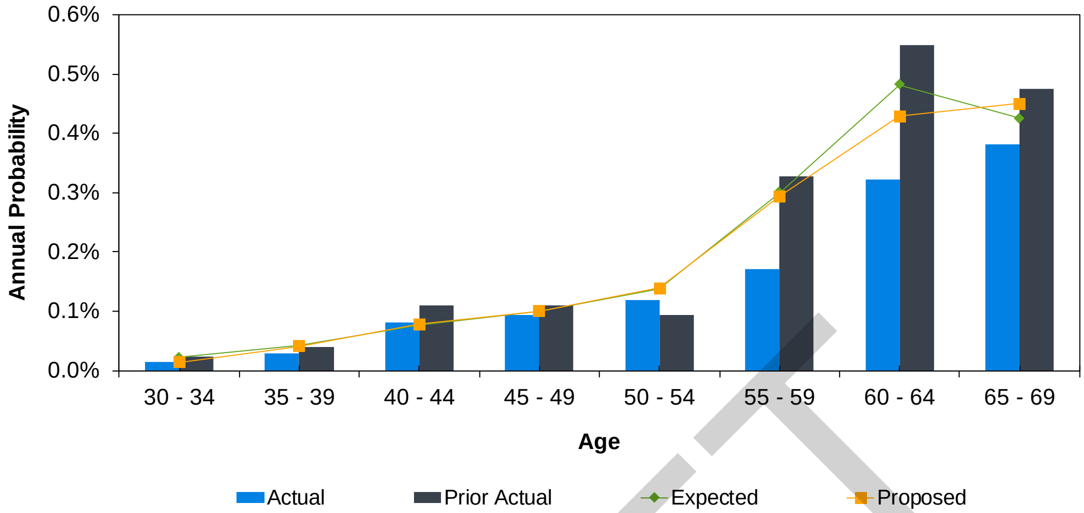
Recommendation: Nonservice-Connected Disability

Actual experience for nonservice-connected disabilities was lower than the assumptions for General members predicted, which is the opposite of experience in the prior study. Overall we do not view this difference as material given the small number of retirements. However, we are recommending adjustments to these assumptions to better fit the actual pattern of disability retirements over the last two study periods.. For Safety members there was only one nonservice-connected disability, so we recommend continuing the current practice of assuming all Safety disability retirements are service-connected.

The results reflecting the proposed assumptions are shown in the following table.

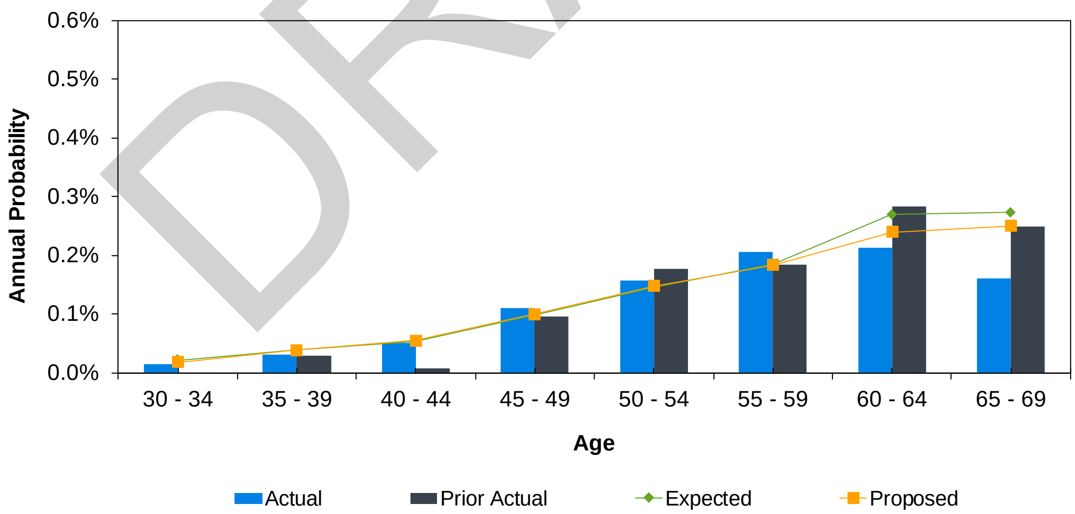
Plan	Gender	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General A-D & G	Male	20	27	74%	29	69%
General A-D & G	Female	34	54	63%	48	71%
Safety	Male	0	0	N/A	0	N/A
Safety	Female	1	0	N/A	0	N/A
	Total	**55**	**81**	**68%**	**77**	**71%**

Exhibit 8-1
Service-Connected Disability Retirement – General A-D & G Male Members



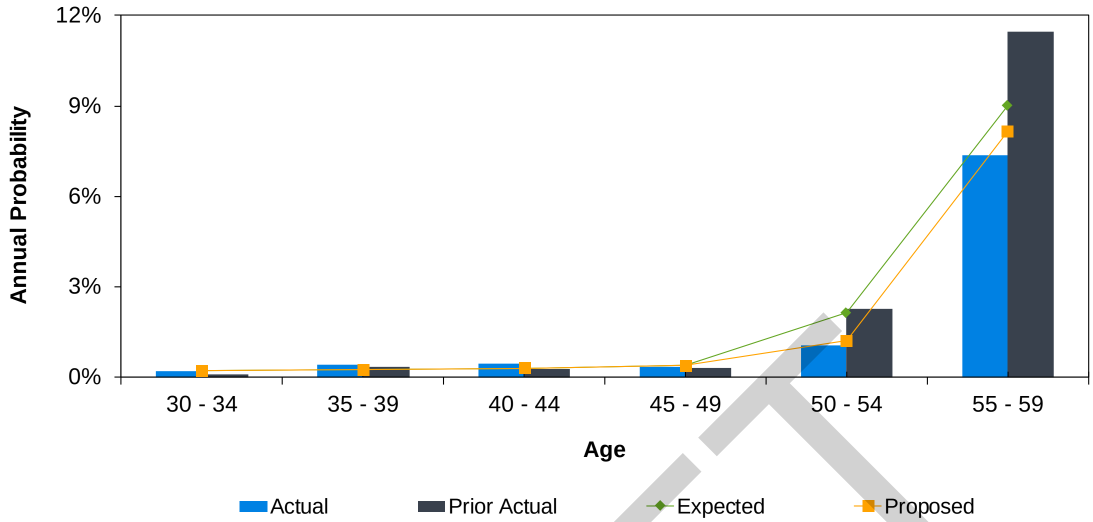
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	92	76	89
Actual / Expected	83%		85%

Exhibit 8-2
Service-Connected Disability Retirement – General A-D & G Female Members



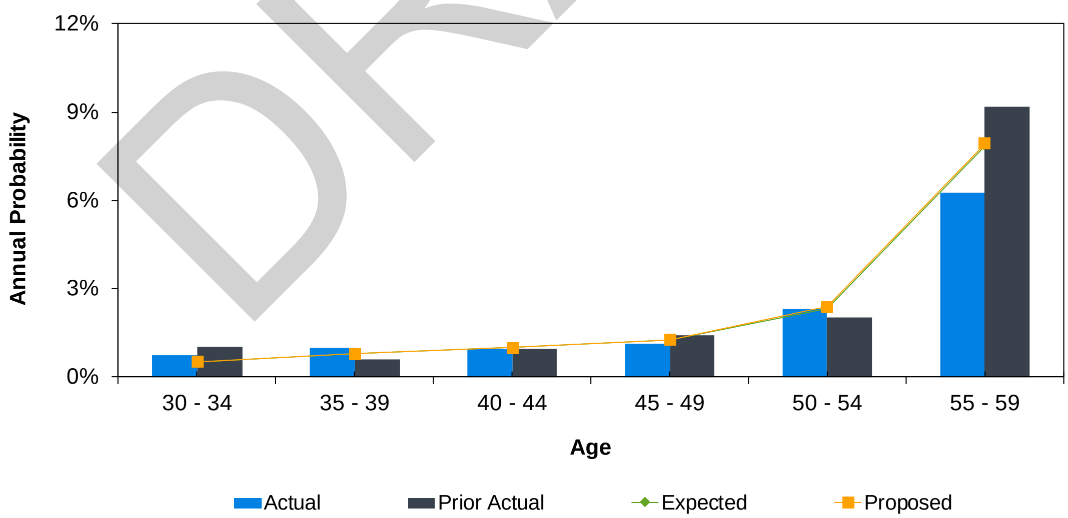
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	133	132	129
Actual / Expected	99%		102%

Exhibit 8-3
Service-Connected Disability Retirement – Safety Male Members



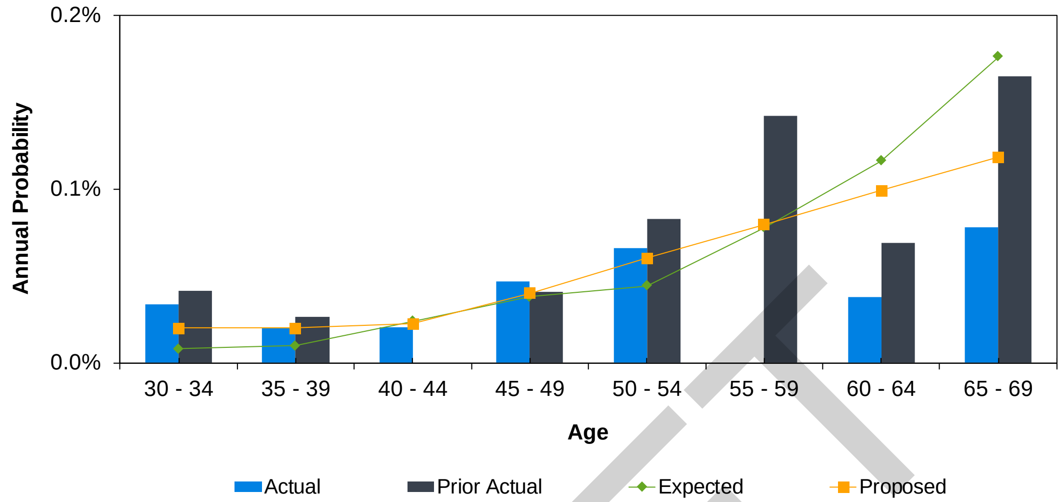
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	490	355	370
Actual / Expected	72%		96%

Exhibit 8-4
Service-Connected Disability Retirement – Safety Female Members



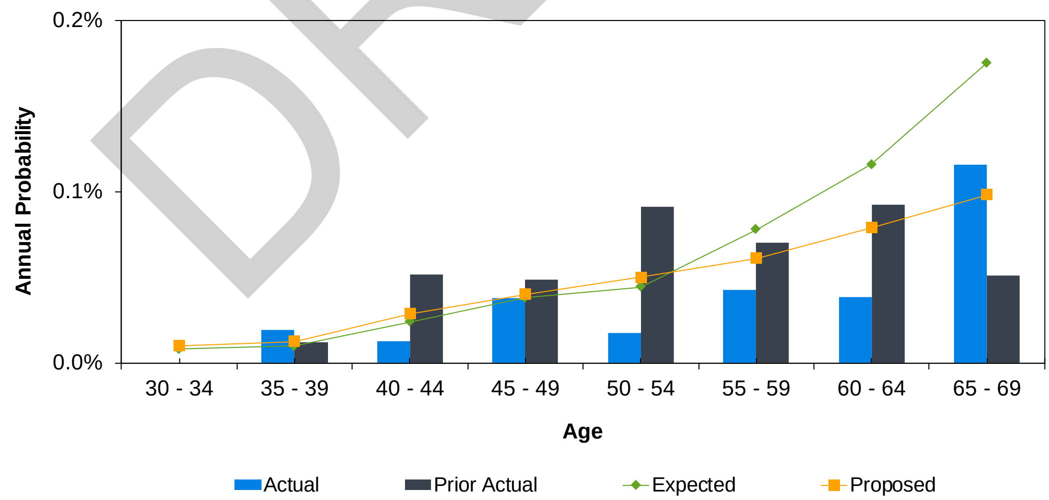
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	73	77	73
Actual / Expected	105%		105%

Exhibit 8-5
Nonservice-Connected Disability Retirement – General A-D & G Male Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	27	20	29
Actual / Expected	74%		69%

Exhibit 8-6
Nonservice-Connected Disability Retirement – General A-D & G Female Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	54	34	48
Actual / Expected	63%		71%

9. Terminations (Includes both Refunds and Vested Terminations)

This section of the report summarizes the results of our study of terminations of employment for reasons other than death, service retirement, or disability. A member who terminates, but does not retire, is assumed to either take a refund (a withdrawal) or to terminate employment but leave the member contributions with the System (a vested termination). We will refer to the combination of the two rates as the aggregate termination rate. This approach sets a probability that the member will terminate, and then assumes a certain portion of the members terminating will elect a refund. The probability of refund is discussed in more detail in Section 10.

Results: Aggregate Terminations (Refunds and Vested Terminations)

Exhibits 9-1 to 9-3 at the end of this section show the results of the study graphically. Total terminations were greater than the assumptions predicted, with some variance by plan. We studied General D and General G together, and all Safety plans together this year. General A – C and Safety A no longer have many members impacted by the termination assumption so are not considered in this analysis. General D and Safety B provide experience for members with longer service while General G and Safety C provide experience for members with shorter service.

The following table summarizes these results along with our proposed changes:

Plan	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General D & G	3,139	2,664	118%	2,826	111%
General E	507	454	112%	454	112%
Safety	244	206	118%	214	114%
Total	**3,890**	**3,324**	**117%**	**3,494**	**111%**

Termination rates are currently based on two factors: years of service and membership. We studied each of these factors to see if they were significant, and if so, what the impact was. Our findings were as follows:

- **Service:** Members in the early stages of their careers generally have a higher probability of terminating. In other studies, we have found years of service to have the most significant impact on termination, and have also found this to be true with LACERA.
- **Membership:** Currently, members are assumed to have a different probability of termination depending on which plan they are in. Each plan was analyzed and we determined an appropriate set of rates based on their experience. We found that there were differences with respect to rates of termination by plan, particularly when comparing Safety members to the other General plans.

Recommendation

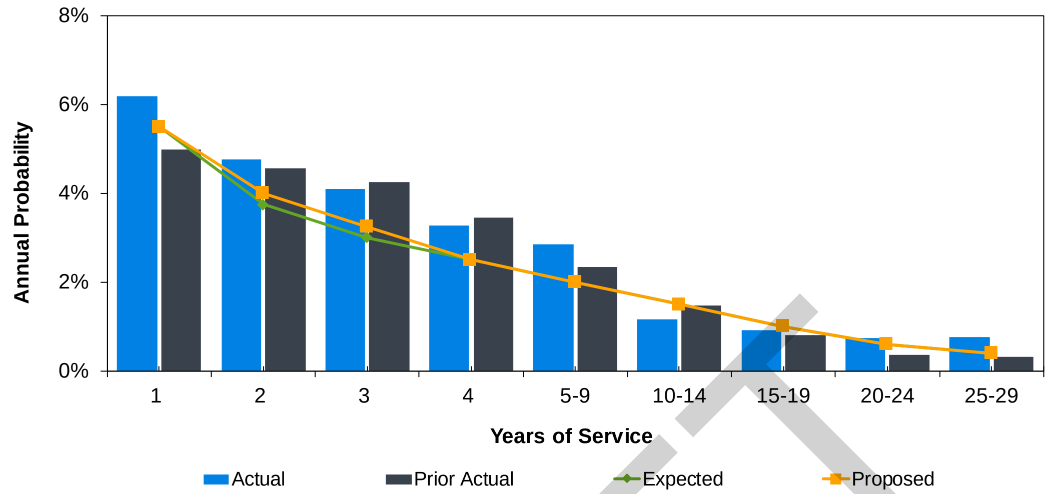
We are recommending rates of termination for all plans as follows:

- **General Plans D & G:** We are recommending slightly higher termination rates for members with less than three years of service and no changes for members with longer service.
- **General Plan E:** We are recommending no change to this assumption.

- **General Plans A-C:** These plans are closed and no new employees are covered by these plans since May of 1979. The total membership is aging and has almost 30 years of service in most cases. Under the current approach to applying termination rates, once a member is eligible for retirement, no termination is assumed. Thus, these rates represent the very low probabilities there are still members not yet eligible for retirement that could terminate. The current rate of termination is assumed at a flat 0.5%, regardless of age or years of service. We are recommending no change to this assumption.
- **Safety Members:** We are recommending slightly higher termination rates for members with one year of service, and adding an annual termination rate of 0.2% for members with between 20 and 29 years of service. Note that the extended termination rates do not apply to Safety A & B members who are eligible for service retirement with 20 years of service or more.

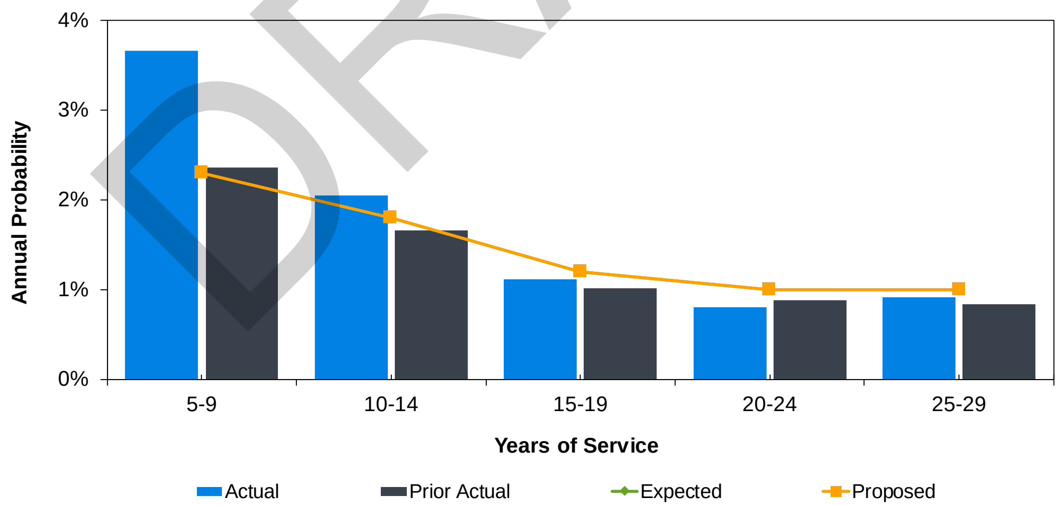
Additionally, we looked at the impact of member compensation level on termination rates. Compensation level appeared to have very little impact on termination rates, although we did observe slightly higher rates in the first years of service for members with higher compensation levels. The graphs at the end of this section reflect the compensation-weighted probabilities of termination from active status.

Exhibit 9-1
Termination Rates – General Plan D & G Members



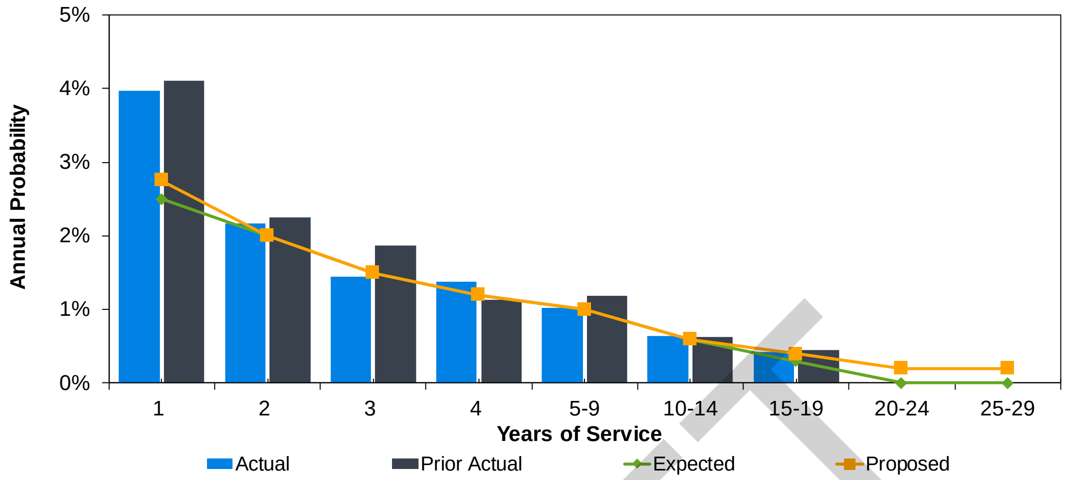
	2016 - 2019 Data (Excludes First Year)		
	Expected	Actual	Proposed
Total Count	2,664	3,139	2,826
Actual / Expected	118%		111%

Exhibit 9-2
Termination Rates – General Plan E Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	454	507	No
Actual / Expected	112%		Change

Exhibit 9-3
Termination Rates – Safety Members



	2016 - 2019 Data (Excludes First Year)		
	Expected	Actual	Proposed
Total Count	206	244	214
Actual / Expected	118%		114%

10. Probability of Refund

As discussed in Section 9, the aggregate termination rates include both members who terminate and take a refund of their contributions and those who elect to keep their contributions with LACERA and receive a deferred vested benefit. The percentage of members who are expected take a refund of their contributions is the probability of refund assumption.

Results

The current assumptions project that a portion of vested members will take a refund of their contributions based on their years of service and classification.

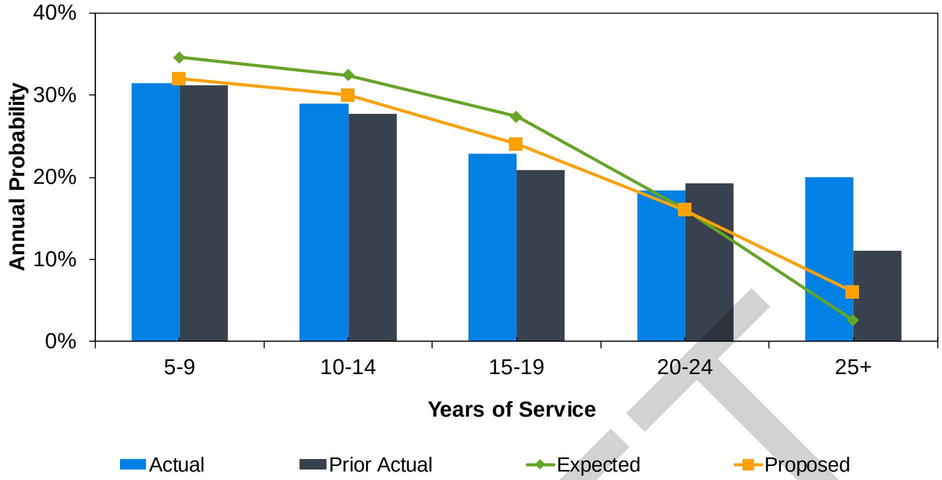
For vested members, there were somewhat fewer refunds than the assumptions projected for General and Safety members. Exhibits 10-1 to 10-2 on the following page show the results of the study graphically.

Plan	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General	432	474	91%	436	99%
Safety	32	38	85%	32	100%
Total	**464**	**512**	**91%**	**468**	**99%**

Recommendation

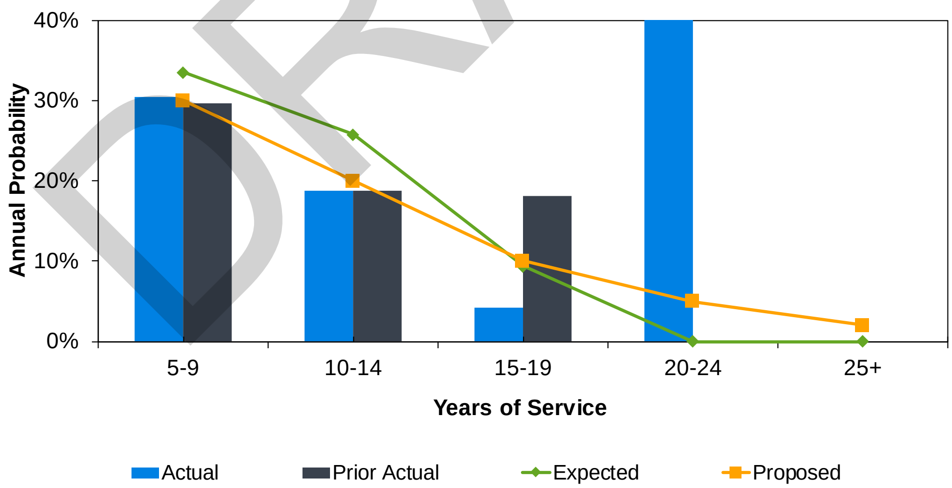
We are recommending changes in the probability of refund for both General or Safety members, generally to lower the probability of refunds for members with between 5 years of service and 20 years of service. We also recommend extending the assumption so that no refunds are assumed after a member has 30 years of service. Currently refunds are assumed to not occur after a General member has 26 years of service and a Safety member has 19 years of service. The rates start higher for members with fewer years of service and decline, as indicated, to 0% or no refund. Note that the probability of refund for Safety members with 20 or more years of service only applies to Safety Plan C members, as members of Safety Plans A & B are eligible for service retirement with 20 years of service.

Exhibit 10-1
Probability of Refund – General Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	474	432	436
Actual / Expected	91%		99%

Exhibit 10-2
Probability of Refund – Safety Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	38	32	32
Actual / Expected	85%		99%

11. Retiree Mortality for Valuation Purposes

In this section we look at the results of the study of actual and expected death rates of retired members. We studied rates of mortality among healthy and disabled retired members.

Mortality has been improving in this country and is expected to continue to improve. We recommend continued use of generational mortality tables (see later discussion) to account for projected future improvements in mortality. Generational mortality is reflected by including a mortality improvement scale that projects small annual decreases in mortality rates. Therefore, generational mortality explicitly assumes that members born more recently will live longer than the members born before them.

The Actuarial Standards of Practice require expected future mortality improvements to be considered in selecting the assumption. Using generational mortality tables achieves this. If generational mortality tables are not used, a margin in the mortality assumption should be used to account for future improvements in mortality, which is discussed later in this section.

Results

Overall, we found there were more deaths than the current rates predicted for healthy retired members: 4,101 actual to 3,959 expected for a total ratio of 104%. This ratio was 103% in the prior study indicating the improvement in mortality over the three-year study period was close to the expectation. The following is a comparison of the actual-to-expected deaths of service retired members by gender and type for the study period 2016-2019, including updated ratios based on our proposed assumptions.

Healthy (Service Retirement) Mortality

Plan	Type	Gender	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General	Healthy	Male	1,708	1,689	101%	1,561	109%
General	Healthy	Female	2,038	1,897	107%	1,881	108%
Safety	Healthy	Male	259	283	92%	246	105%
Safety	Healthy	Female	15	17	88%	16	94%
		Total	**4,020**	**3,886**	**103%**	**3,704**	**109%**

Note: Results in the table above are based on headcount. The recommended assumptions account for differences due to benefit levels (discussed below).

For disabled retirees, there were more deaths than the current rates predicted: 787 actual to 765 expected for a total ratio of 103%. This ratio was 103% in the prior study indicating the improvement in mortality over the three-year study period was close to the expectation. The following is a comparison of the actual-to-expected deaths of disabled retired members by gender and type for the study period 2016-2019, including updated ratios based on our proposed assumptions.

Disabled Mortality

Plan	Type	Gender	Actual	Expected	Actual / Expected	Proposed	Actual / Proposed
General	Disabled	Male	187	184	102%	166	113%
General	Disabled	Female	212	218	97%	206	103%
Safety	Disabled	Male	368	340	108%	329	112%
Safety	Disabled	Female	20	23	87%	22	91%
		Total	**787**	**765**	**103%**	**723**	**109%**

Note: Results in the table above are based on headcount. The recommended assumptions account for differences due to benefit levels (discussed below).

Exhibits 11-1 through 11-8 show the results of the study graphically for the period studied, 2016-2019. The rates are currently based on several factors. We studied each of these factors to see if they were significant, and, if so, what the impact was. Our findings were as follows:

- **Age:** Members at older ages tend to have a greater probability of dying than younger members. This is almost universally true in mortality studies.
- **Gender:** Male members tend to have a greater probability of dying than females. This trend is generally true for all mortality studies, and we found this to be true with LACERA.
- **Retirement Type:** Healthy retirees live longer than disabled retirees. This trend is generally true for all mortality studies, and we found this to be true with LACERA. Note that the difference between healthy and disabled retirees is significant for General members, but for Safety members the difference in rates of mortality is much less.
- **Membership:** The current assumptions predict that male Safety members live longer than male General members. This study confirms the same relationship between the memberships, although the difference for healthy retirees is fairly small.
- **Benefit Amount**: We also studied how the amount of an individual's benefits affected his/her mortality. We found that members with larger-than-average benefits tended to have lower mortality than those with smaller-than-average benefits. This is important because this means that if the assumptions exactly predict the number of deaths, the plan will incur actuarial losses. We found this to be particularly true for healthy male retirees. We have accounted for the impact of the benefit levels on mortality in our recommended rates. The graphs at the end of this section reflect the benefit-weighted probabilities of death while retired.

Generational Mortality Tables

Most actuarial valuations for public sector retirement systems use generational mortality tables, which explicitly reflect expected improvements in mortality. Generational mortality tables include a base table and a projection table. The projection table reflects the expected annual reduction in mortality rates at each age. Therefore, each year in the future, the mortality at a specific age is expected to decline slightly (and people born in succeeding years are expected to live slightly longer).

For example, if the mortality rate at age 75 is 2.00% for a member currently aged 75 and the projected improvement is 1.00%, the mortality rate at age 75 for a member currently aged 74 will be 1.98% [2.00% x (100.00% - 1.00%)]. Therefore, the life expectancy for a 75-year old in the next year will be greater than a 75-year old in the current year. This can result in significant differences in life expectancies when projecting improvements 30-plus years into the future.

One of the main benefits of generational mortality tables is that the valuation assumptions should effectively update each year to reflect improved mortality, and the mortality tables should need to be changed less frequently. During the previous investigation of experience study, LACERA adopted a generational mortality assumption.

Projection Scale for Mortality Improvement

There is a strong consensus in the actuarial community that future improvements in mortality should be reflected in the valuation assumptions. There is less consensus, however, about how much mortality improvement should be reflected. The projection scale (which projects future improvements in mortality) published by the Society of Actuaries (SOA) in 2014 incorporates a complex matrix of rates of improvement that vary by both age and birth year. Ultimately, the projection scale (MP-2014) goes to a flat 1% annual improvement in years 2027 and later for ages 85 or less.

Our general recommendation is to use a mortality projection scale of between 100% and 120% of the ultimate portion of the MP-2014 projection scale. In other words, our recommendation is to assume 1.0% and 1.2% annual improvements in mortality (for ages less than 85). We believe this reasonably reflects the long-term expectation of mortality improvement. We have compared our recommended projection scale with actual mortality improvement from the most recent 60 years of experience of the US Social Security system and found them to be reasonably consistent.

LACERA currently uses a mortality projection equal to 100% of the MP-2014 ultimate projection scale. That is, the current projection scale is a flat 1.0% improvement through age 85. For subsequent ages, the projected improvement is fractionally less, grading down to 0.0% at age 115. For example, the projected improvement is 0.64% per year at age 100. We believe this continues to be a reasonable assumption and recommend retaining this assumption.

New Public Plan-Specific Mortality Tables

As discussed in Section 6, the Society of Actuaries recently published new mortality tables based on data from public sector retirement systems. In particular, tables specific to general and safety members were included. We compared how well the current LACERA mortality tables and the new class-specific mortality table matched the actual experience. Based on our analysis, we found that the tables matched well with the retired mortality experience. We are recommending a change to the new tables.

Recommendation

We recommend an update to the mortality assumptions to reflect the new public plan specific mortality tables and retaining the mortality projection scale. Note that the total healthy retiree actual/proposed ratio under the recommended assumptions is 109% based on a head-count weighted basis. Accounting for the impact of benefit values, the actual/proposed ratio is 99%. We believe the combination of the recommended mortality tables with the projection scale allows for a reasonable expectation of future life expectancy increases.

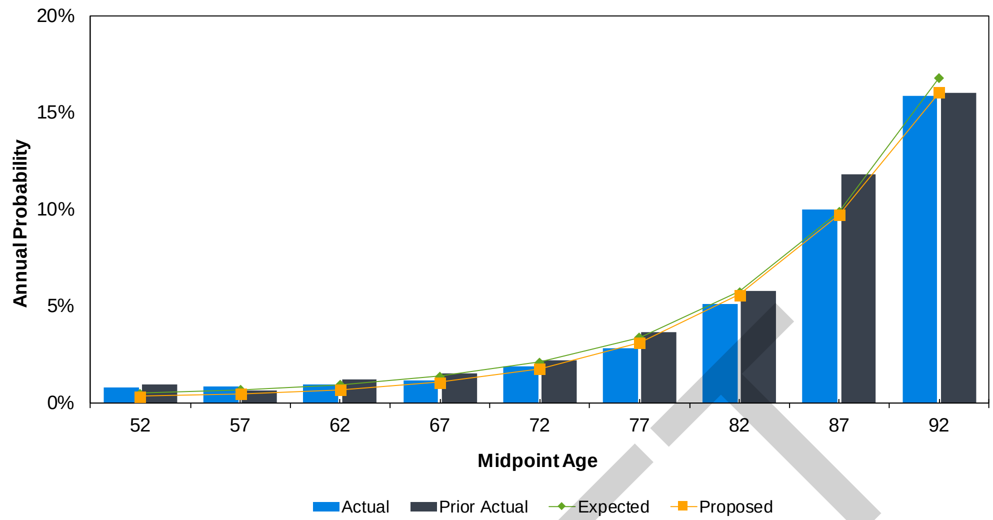
LACERA uses standard mortality tables adjusted to best fit the patterns of mortality among its retirees. The table below describes the new tables being recommended for healthy and disabled retirees. These are based on the recent study of public plan retirees. Note that for beneficiaries of healthy and disabled retirees, we recommend that the mortality for healthy general retirees be used.

The recommended mortality rates are based on the PubG-2010 and PubS-2010 Healthy Retiree and Disabled Retiree mortality tables and all assume generational mortality improvement based on 100% of the MP-2014 Ultimate projection scale, as follows:

			Mortality Tables[2]	
Class	Type[1]	Sex	Current Table	Proposed Table
General	Healthy	Male	RP-2014 (105%) Healty Annuitant Male	PubG-2010 (100%) Healthy Retiree Male
General	Healthy	Female	RP-2014 (100%) Healty Annuitant Female	PubG-2010 (110%) Healthy Retiree Female
Safety	Healthy	Male	RP-2014 (95%) Healty Annuitant Male	PubS-2010 (85%) Healthy Retiree Male
Safety	Healthy	Female	RP-2014 (100%) Healty Annuitant Female	PubS-2010 (100%) Healthy Retiree Female
General	Disabled	Male	Avg of: RP-2014 (105%) Healty Annuitant Male RP-2014 (100%) Disabled Retiree Male	Avg of: PubG-2010 (100%) Healthy Retiree Male PubG-2010 (100%) Disabled Retiree Male
General	Disabled	Female	Avg of: RP-2014 (100%) Healty Annuitant Female RP-2014 (100%) Disabled Retiree Female	Avg of: PubG-2010 (100%) Healthy Retiree Female PubG-2010 (100%) Disabled Retiree Female
Safety	Disabled	Male	RP-2014 (100%) Healty Annuitant Male	PubS-2010 (100%) Disabled Retiree Male
Safety	Disabled	Female	RP-2014 (100%) Healty Annuitant Female	PubS-2010 (100%) Disabled Retiree Female

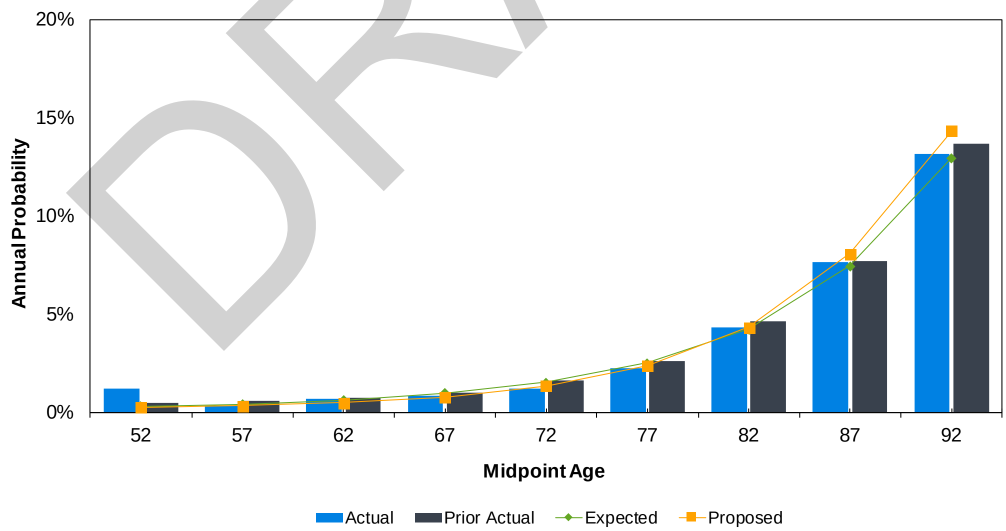
1. Beneficiaries are assumed to have the same mortality as a healthy General member of the same sex.
2. Generational Projections using 100% of the MP-2014 Ultimate projection scale.

Exhibit 11-1
Healthy Mortality – Male General Members



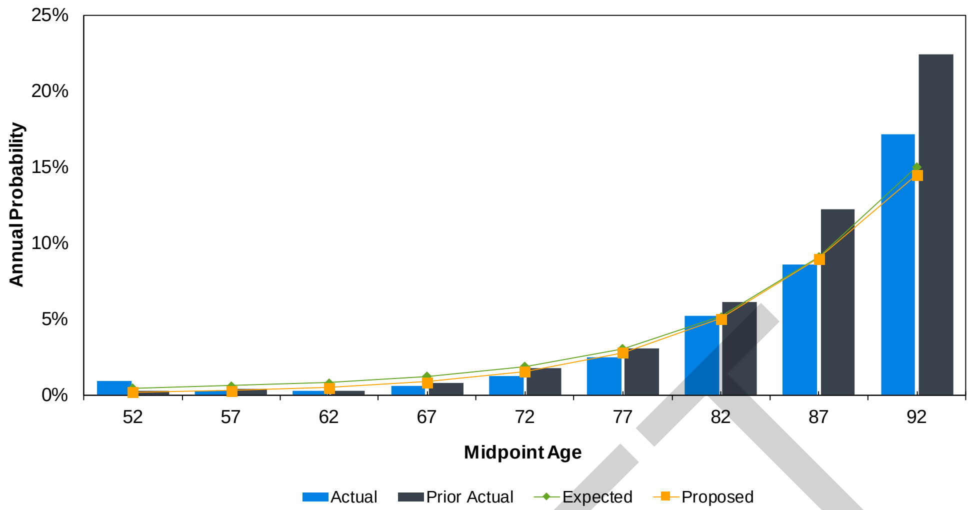
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	1,689	1,708	1,561
Actual / Expected	101%		109%

Exhibit 11-2
Healthy Mortality – Female General Members



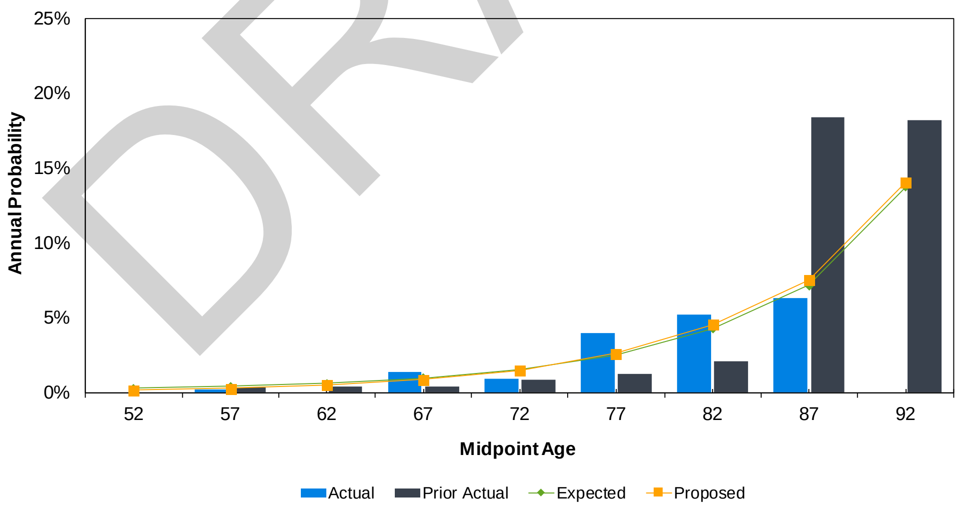
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	1,897	2,038	1,881
Actual / Expected	107%		108%

Exhibit 11-3
Healthy Mortality – Male Safety Members



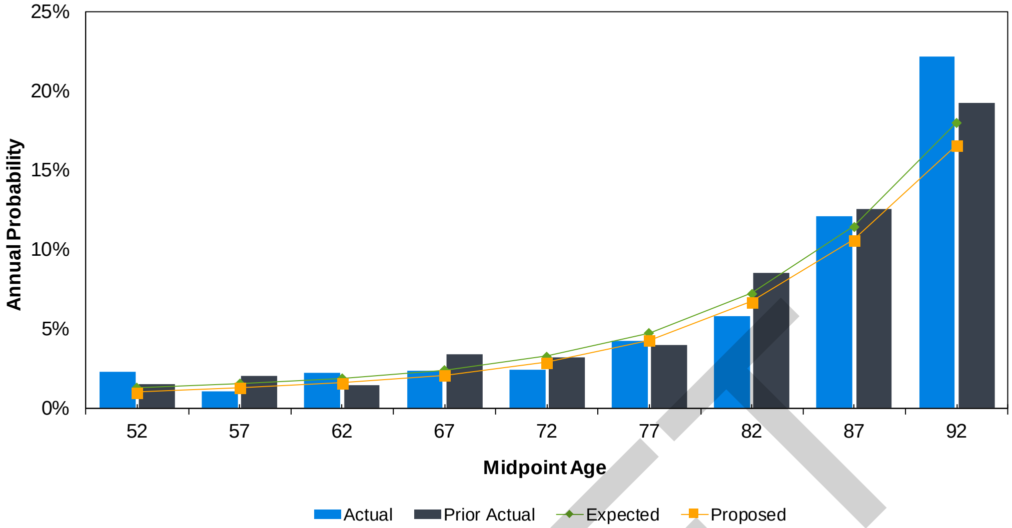
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	283	259	246
Actual / Expected	92%		105%

Exhibit 11-4
Healthy Mortality – Female Safety Members



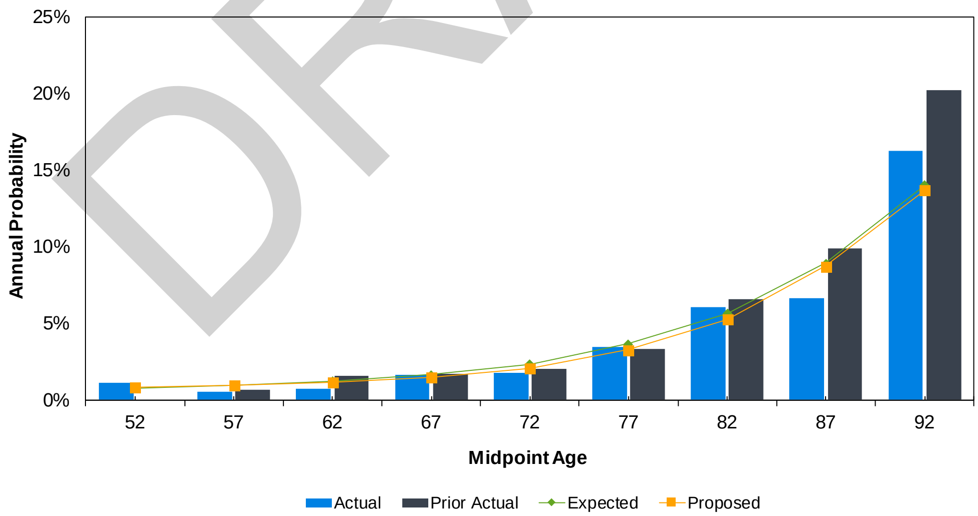
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	17	15	16
Actual / Expected	88%		94%

Exhibit 11-5
Disabled Mortality – Male General Members



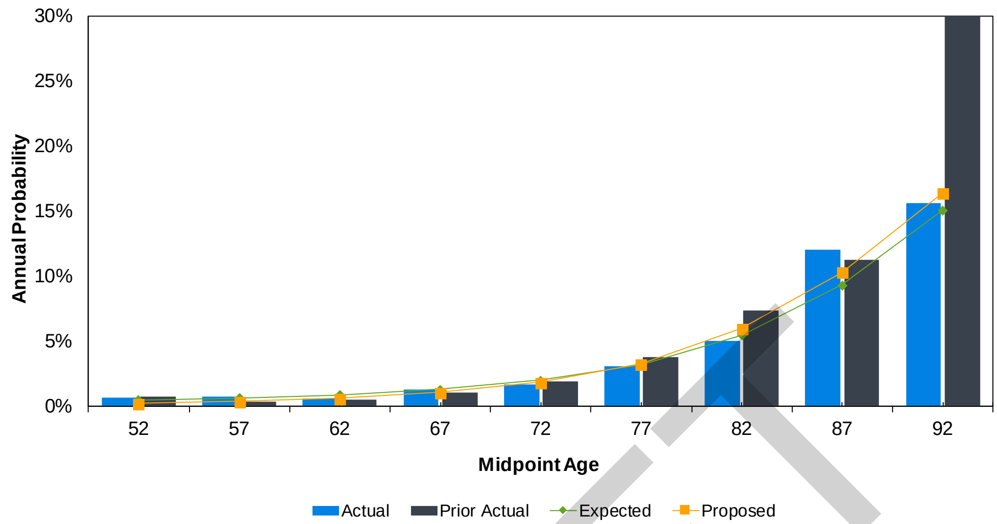
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	184	187	166
Actual / Expected	102%		113%

Exhibit 11-6
Disabled Mortality – Female General Members



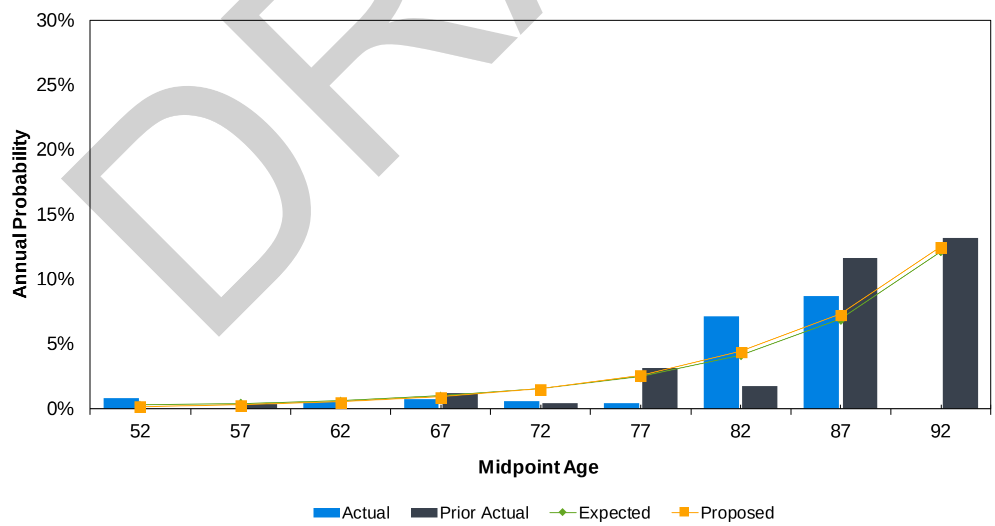
	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	218	212	206
Actual / Expected	97%		103%

Exhibit 11-7
Disabled Mortality – Male Safety Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	340	368	329
Actual / Expected	108%		112%

Exhibit 11-8
Disabled Mortality – Female Safety Members



	2016 - 2019 Data		
	Expected	Actual	Proposed
Total Count	23	20	22
Actual / Expected	87%		91%

12. Miscellaneous Assumptions

Probability of Eligible Survivor

All members are assumed to elect the unmodified retirement allowance. Surviving beneficiaries (spouses or qualified domestic partners of members) generally receive a 65% continuance of the member's benefit (100% continuance for service-connected disabilities and 55% for Plan E members). Thus, the probability a member has an eligible survivor impacts the value of the benefit.

Based on our analysis of retirements during the study period, we found that 80% of males and 49% of females received an unmodified (or unmodified plus) benefit with an eligible survivor. As the actual experience was close to the assumptions, we are recommending no changes.

	Probability of retiring with an Eligible Survivor		
Retiree Gender	Current Assumption	Actual Experience	Recommended Assumption
Male	77%	80%	No change
Female	50%	49%	No change

Beneficiary Age

To determine the value of a member's retirement or death benefit, we must estimate the value of the portion payable to the surviving eligible beneficiary. Since the value of the survivor's benefit is dependent on his/her age, we must estimate it. We studied the beneficiary age difference compared to the member based on retirements during the study period. Based on this analysis, we are recommending no changes in the assumed age difference between retirees and beneficiaries.

	Beneficiary's Age Relative to Member		
Retiree Gender	Current Assumption	Actual Experience	Recommended Assumption
Male	4 years younger	3.3 years younger	No change
Female	2 years older	2.0 years older	No change

Since the majority of eligible survivors are expected to be of the opposite gender, even with the inclusion of qualified domestic partners, we will continue to assume that the survivor’s gender is the opposite of the member.

Retirement for Deferred Vested Members

The age when members who terminate (or have terminated) with a vested benefit are assumed to retire varies by plan. We have studied the actual retirement ages of deferred vested members during the study period, and we recommend a change in the assumption for General members in Plan D.

Assumption for Deferred Commencement			
	Age at Commencement		
Plan	Current Assump.	Actual Results	Proposed Assump.
GA	62	66.7	No Change
GB	62	N/A(1)	No Change
GC	62	N/A(1)	No Change
GD	57	59.0	59
GE	62	61.9	No Change
GG	57	N/A(1)	No Change
SA	55	N/A(1)	No Change
SB	50	50.8	No Change
SC	50	N/A(1)	No Change

1. Insufficient data for analysis.

Note that General Plans A, B and C and Safety Plan A have very few deferred vested members. For these plans, we consider this assumption to not be material. For General Plan G and Safety Plan C, there is very little experience for this assumption at this time.

Reciprocity

Members who terminate in the future (or have already terminated) with a deferred vested benefit may go to work for a reciprocal employer. This can result in an increase in the member's final compensation used in the calculation of their LACERA benefit. Currently, 16% reciprocity is assumed for General members, and 35% is assumed for Safety members. We are recommending no change in the reciprocity assumption.

Retirements from Deferred Status (2016-2019)					
Plan	Total	Reciprocal Status	% with Reciprocity	Current Assump.	Proposed Assump.
General	1,137	198	17%	16%	No Change
Safety	88	34	39%	35%	No Change
Total	1,225	232	19%		

Appendix A: Proposed Actuarial Procedures and Assumptions

This section of the experience study report reflects how the Appendix A of the June 30, 2019 actuarial valuation would appear if the Board of Investments adopts all of the recommended assumptions.

Appendix A Actuarial Procedures and Assumptions

The actuarial procedures and assumptions used in this valuation are described in this section. The assumptions were reviewed and changed effective with the June 30, 2019 valuation, as a result of the 2019 triennial Investigation of Experience Study.

The actuarial assumptions used in the valuations are intended to estimate the future experience of the members of LACERA and of LACERA itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of LACERA's benefits.

Table A-1 summarizes the assumptions. The mortality rates are taken from the sources listed.

Tables A-2 and A-3 show how members are expected to leave retired status due to death.

Table A-4 presents the probability of refund of contributions upon termination of employment while vested.

Table A-5 presents the expected annual percentage increase in salaries.

Tables A-6 to A-13 were developed from the experience as measured by the 2019 Investigation of Experience Study. The rates are the probabilities a member will leave the System for various reasons.

Note: The assumptions shown in this appendix are Milliman's proposed assumptions and have not yet been adopted by the Board. Recommended changes from the prior assumptions have been shaded in green. All numbers in the tables and certain items within the text may be modified after the Board makes its decision regarding the actuarial assumptions.

Actuarial Cost Method

The actuarial valuation is prepared using the entry age actuarial cost method (CERL 31453.5). Under the principles of this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit (until maximum retirement age).

For members who transferred between plans, entry age is based on original entry into the System.

The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets, and (b) the actuarial present value of future normal costs is called the Unfunded Actuarial Accrued Liability (UAAL). The original UAAL as of June 30, 2009 is amortized as a level percentage of the projected salaries of present and future members of LACERA over a closed 30-year period. Future gains and losses are amortized over new closed 30-year periods. This is referred to as "layered" amortization.

For General Plan G and Safety Plan C, the normal cost rate is rounded up to the nearest 0.02%.

Records and Data

The data used in this valuation consists of financial information and the age, service, and income records for active and inactive members and their survivors. All of the data were supplied by LACERA and are accepted for valuation purposes without audit.

Replacement of Former Members

The ages and relative salaries at entry of future members are assumed to follow a new entrant distribution based on the pattern of current members. Under this assumption, the normal cost rates for active members will remain fairly stable in future years unless there are changes in the governing law, the actuarial assumptions, or the pattern of the new entrants.

Growth in Membership

For benefit determination purposes, no growth in the membership of LACERA is assumed. For funding purposes, if amortization is required, the total payroll of covered members is assumed to grow due to the combined effects of future wage increases of current active members and the replacement of the current active members by new employees. No growth or decline in the total number of active members is assumed.

Internal Revenue Code Section 415 Limit

The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

Internal Revenue Code Section 401(a)(17)

The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

Employer Contributions

The employer contribution rate is set by the Board of Investments based on actuarial valuations.

Member Contributions

The member contribution rates vary by entry age (except for PEPRA plans) and are described in the law. Code references are shown in Appendix B of the valuation report. The methods and assumptions used are detailed later in this section.

The individual member rates by entry age, plan, and class are illustrated in Appendix D of the valuation report.

Valuation of Assets

The assets are valued using a five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the valuation date. The expected market value is the prior year's market value increased with the net increase in the cash flow of funds, all increased with interest during the past fiscal year at the expected investment return rate assumption. The five-year smoothing valuation basis for all assets was adopted effective June 30, 2009.

Investment Earnings and Expenses

The future investment earnings of the assets of LACERA are assumed to accrue at an annual rate of 6.75% compounded annually, net of both investment and administrative expenses. This rate was adopted June 30, 2019.

Post-retirement Benefit Increases

Post-retirement increases are assumed for the valuation in accordance with the benefits provided as described in Appendix B. These adjustments are assumed payable each year in the future as they are not greater than the expected increase in the Consumer Price Index of 2.50% or 2.75% per year. This rate was adopted June 30, 2019.

Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 6.75% compounded semi-annually for an annualized rate of 6.86%. This rate was adopted June 30, 2019.

Future Salaries

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table A-5. In addition to increases in salary due to promotions and longevity, this scale includes an assumed 3.00% or 3.25% per annum rate of increase in the general wage level of the membership. These rates were adopted June 30, 2019.

Increases are assumed to occur mid-year (i.e., January 1st) and only apply to base salary, excluding megaflex compensation. The mid-year timing reflects that salary increases occur throughout the year, or on average mid-year.

For plans with a one-year final average compensation period, actual average annual compensation is used. For Plan E, Plan G and Safety Plan C, the monthly rate as of June of the valuation year was annualized. Due to irregular compensation payments now included as pensionable earnings, actual annual pay is preferred over annualizing a single monthly payment amount.

Social Security Wage Base

Plan E members have their benefits offset by an assumed Social Security Benefit. For valuation funding purposes, we need to project the Social Security Benefit. We assume the current Social Security provisions will continue and the annual Wage Base will increase at the rate of 3.00% or 3.25% per year. Note that statutory provisions describe exactly how to compute the offset for purposes of determining a member's offset amount at time of termination or retirement. This rate was adopted June 30, 2019.

Note also, that it is assumed all Plan E members born after 1950 have less than 10 years of Social Security-covered service and, therefore, do not have their benefit offset.

General Plan G and Safety Plan C members have their compensation limited to approximately 120% of the Social Security Wage Base. The limit for 2019 is $149,016 (after applying the 120% factor) and is projected to increase at the CPI rate of 2.50% or 2.75%. This rate of future increase was adopted effective June 30, 2019.

Retirement

Members in General Plans A-D may retire at age 50 with 10 years of service, or any age with 30 years of service, or age 70 regardless of the number of years of service. General Plan G members are eligible to retire at age 52 with 5 years of service, or age 70 regardless of the number of years of service. Non-contributory Plan E members may retire at age 55 with 10 years of service. Members of Safety Plans A and B may retire at age 50 with 10 years of service, or any age with 20 years of service. Safety Plan C members are eligible to retire at age 50 with 5 years of County service. The retirement rates vary by age and are shown by plan in Tables A-6 through A-13.

All general members who attain or who have attained age 75 in active service and all safety members who have attained age 65 in active service are assumed to retire immediately (except for Safety Plan C members who have not yet attained 5 years of service).

Deferred vested members are assumed to retire at the later of their current age and the assumed retirement age specified as follows:

Assumption for Deferred Commencement

Plan	Age at Commencement
GA	62
GB	62
GC	62
GD	59
GE	62
GG	57
SA	55
SB	50
SC	50

The assumptions regarding termination of employment, early retirement, and unreduced service retirement are treated as a single set of decrements in regards to a particular member. For example, a general member hired at age 30 has a probability of withdrawing from LACERA due to death, disability or other termination of employment until age 50. After age 50, the member could still withdraw due to death, disability, or retirement. Thus, in no year during the member's projected employment would the member be eligible for both a probability of other termination of employment and a probability of retirement.

The retirement probabilities were adopted June 30, 2019.

Disability

The rates of disability used in the valuation are also illustrated in Tables A-6 through A-13. These rates were adopted June 30, 2019.

Post-Retirement Mortality – Other Than Disabled Members

The same post-retirement mortality rates are used in the valuation for active members, members retired for service, and beneficiaries. These rates are illustrated in Table A-2. Current beneficiary mortality is assumed to be the same assumption as healthy members of the same sex. Future beneficiaries are assumed to be of the opposite sex and have the same mortality as General members.

Note that these assumptions directly reflect expected future mortality improvement. These rates were adopted June 30, 2019.

Males General members: PubG-2010 Healthy Retiree Mortality Table for Males, with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Males multiplied by 85%, with MP-2014 Ultimate Projection Scale.

Females General members: PubG-2010 Healthy Retiree Mortality Table for Females multiplied by 110%, with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Females, with MP-2014 Ultimate Projection Scale.

Post-Retirement Mortality – Disabled Members

For disabled members, the mortality rates used in the valuation rates are illustrated in Table A-3. Note that these assumptions directly reflect expected future mortality improvement. These rates were adopted June 30, 2019.

Males General members: Average of PubG-2010 Healthy Retiree Mortality Table for Males and PubG-2010 Disabled Retiree Mortality Table for Males, both projected with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Males, with MP-2014 Ultimate Projection Scale.

Females General members: Average of PubG-2010 Healthy Retiree Mortality Table for Females and PubG-2010 Disabled Retiree Mortality Table for Females, both projected with MP-2014 Ultimate Projection Scale.

Safety members: PubS-2010 Healthy Retiree Mortality Table for Females, with MP-2014 Ultimate Projection Scale.

Mortality while in Active Status

For active members, the mortality rates used in the valuation rates are illustrated in Tables A-6 through A-13. These rates were adopted June 30, 2019.

Class	Gender	Proposed Table
General	Male	PubG-2010 (120%) Employee Male(1)
General	Female	PubG-2010 (130%) Employee Female(1)
Safety	Male	PubS-2010 (100%) Employee Male(1)
Safety	Female	PubS-2010 (100%) Employee Female(1)

1. Projection using MP-2014 Ultimate projection scale.

Note: Safety members have an additional service-connected mortality rate of 0.01% per year.

Other Employment Terminations

Tables A-6 to A-13 show, for all ages, the rates assumed in this valuation for future termination from active service other than for death, disability, or retirement. These rates do not apply to members eligible for service retirement. These rates were adopted June 30, 2019.

Terminating employees may withdraw their contributions immediately upon termination of employment and forfeit the right to further benefits, or they may leave their contributions with LACERA. Former contributing members whose contributions are on deposit may later elect to receive a refund, may return to work, or may remain inactive until becoming eligible to receive a retirement benefit under either LACERA or a reciprocal retirement system. All terminating members who are not eligible for vested benefits are assumed to withdraw their contributions immediately. It is assumed that all terminating members will not be rehired in the future.

Table A-4 gives the assumed probabilities that vested members will withdraw their contributions and elect a refund immediately upon termination and the probability that remaining members will elect a deferred vested benefit. All non-vested members are assumed to elect a refund and withdraw their contributions. These rates were adopted June 30, 2019.

Probability of Eligible Survivors

For members not currently in pay status, 77% of all males and 50% of all females are assumed to have eligible survivors (spouses or qualified domestic partners). Survivors are assumed to be four years younger than male members and two years older than female members. Survivors are assumed to be of the opposite gender as the member. There is no explicit assumption for children’s benefits. We believe the survivor benefits based on this assumption are sufficient to cover children’s benefits as they occur.

Valuation of Vested Former Members

The deferred retirement benefit is calculated based on the member’s final compensation and service at termination. The compensation amount is projected until the assumed retirement age for members who are assumed to be employed by a reciprocal agency. For members who are missing compensation data, Final Compensation is estimated as the average amount for all members who terminated during the same year and had a valid compensation amount. The greater of the present value of the calculated benefit and the employee’s current contribution balance is valued for future deferred vested members.

Reciprocal Employment

16% of General and 35% of Safety current and future deferred vested members are assumed to work for a reciprocal employer.

Current vested reciprocal members are assumed to receive annual salary increases of 3.75% or 4.00%. Future reciprocal vested members are assumed to receive the same salary increases they would have received if they had stayed in active employment with LACERA and retired at the assumed retirement age.

Valuation of Annuity Purchases

Over 30 years ago, LACERA purchased single life annuities from two insurance companies for some retired members (currently less than 1% of the retired population). The total liability for these members is calculated and then offset by the expected value of the benefit to be paid by the insurance companies.

For affected members, the insurance companies are responsible for:

1. Straight life annuity payments
2. Statutory COLAs

LACERA is responsible for:

1. Benefit payments payable to any beneficiary
2. STAR COLAs

Member Contribution Rate Assumptions

The following assumptions summarize the procedures used to compute member contribution rates based on entry age.

In general, the member rate is determined by the present value of the future benefit (PVFB) payable at retirement age, divided by the present value of all future salaries payable between age at entry and retirement age. For these purposes, per the CERL:

A. The Annuity factor used for general members is based on a 35% / 65% blend of the male and female valuation mortality tables and projection scale, with a static projection to 2041. For Safety members, it is based on a 85% / 15% blend of the male and female annuity factors.

B. The annuity factor used in determining the PVFB at entry age is equal to the life only annuity factor at 6.75%.

C. The Final Compensation is based on the salary paid in the year prior to attaining the retirement age.

   Example: For a Plan C Member who enters at age 59 or earlier, the Final Compensation at retirement (age 60) will be the monthly average of the annual salaries during age 59.

D. Member Rates are assumed to increase with entry age (except for PEPRA plans). There are a few exceptions at the higher entry ages where the calculated rate is less than the previous entry age (for example, age 53 for General A). In these cases the member contribution rate is adjusted so that it is no less than the value for the previous entry age.

Table A-1
Summary of Valuation Assumptions as of June 30, 2019

I. Economic assumptions

A.	General wage increases	3.00% or 3.25%
B.	Investment earnings	6.75%
C.	Growth in membership	0.00%
D.	Post-retirement benefit increases (varies by plan)	Plan COLA not greater than CPI assumption.
E.	CPI inflation assumption	2.50% or 2.75%

II. Demographic assumptions

A.	Salary increases due to service	Table A-5
B.	Retirement	Tables A-6 to A-13
C.	Disability	Tables A-6 to A-13
D.	Mortality during active employment	Tables A-6 to A-13
E.	Mortality for active members after termination and service retired members[1]	Table A-2

Class	Gender	
General	Male	PubG-2010 (100%) Healthy Retiree Male
General	Female	PubG-2010 (110%) Healthy Retiree Female
Safety	Male	PubS-2010 (85%) Healthy Retiree Male
Safety	Female	PubS-2010 (100%) Healthy Retiree Female

F. Mortality among disabled members[1] — Table A-3

Class	Gender	
General	Male	Avg of: PubG-2010 (100%) Healthy Retiree Male PubG-2010 (100%) Disabled Retiree Male
General	Female	Avg of: PubG-2010 (100%) Healthy Retiree Female PubG-2010 (100%) Disabled Retiree Female
Safety	Male	PubS-2010 (100%) Healthy Retiree Male
Safety	Female	PubS-2010 (100%) Healthy Retiree Female

G. Mortality for beneficiaries[1] — Table A-2

Basis – Beneficiaries are assumed to have the same mortality as a general member of the opposite gender who has taken a service retirement.

H.	Other terminations of employment	Tables A-6 to A-13
I.	Refund of contributions on vested termination	Table A-4

1. All mortality rates are projected using the MP-2014 Ultimate projection scale.

Table A-2
Mortality for Members Retired for Service[1]

Age	Safety Male	Safety Female	General Male	General Female
20	0.0520%	0.0210%	0.0740%	0.0380%
25	0.0470%	0.0260%	0.0560%	0.0260%
30	0.0520%	0.0350%	0.0720%	0.0440%
35	0.0590%	0.0470%	0.0940%	0.0680%
40	0.0750%	0.0640%	0.1320%	0.1060%
45	0.1037%	0.0870%	0.1960%	0.1650%
50	0.1632%	0.1490%	0.2980%	0.2442%
55	0.2601%	0.2580%	0.4310%	0.3146%
60	0.4318%	0.4460%	0.6150%	0.4224%
65	0.7489%	0.7700%	0.9130%	0.6743%
70	1.3328%	1.3290%	1.5260%	1.1693%
75	2.4021%	2.2950%	2.6710%	2.0713%
80	4.3376%	3.9620%	4.7740%	3.6960%
85	7.7648%	6.8420%	8.5910%	6.8255%
90	13.4810%	11.8150%	14.6720%	12.6357%

Annual Projected Mortality Improvement

Age	All Groups
65 & Less	1.000%
70	1.000%
75	1.000%
80	1.000%
85	1.000%
90	0.930%
95	0.850%
100	0.640%
105	0.430%
110	0.210%
115	0.000%

1. *Mortality rates are those applicable for the fiscal year beginning in 2010. Annual projected improvements are assumed in the following years under the schedule shown. For example, the annual mortality rate for an 85-year old Safety male in fiscal year beginning in 2019 is 7.0933% calculated as follows:*

Age 85 rate in 2019 = Age 85 rate in 2010 with 9 years improvement
= 7.7648% x (100.0% - 1.0%) ^ 9
= 7.0933%

Table A-3
Mortality for Members Retired for Disability[1]

Age	Safety Male	Safety Female	General Male	General Female
20	0.0610%	0.0210%	0.2430%	0.1340%
25	0.0550%	0.0260%	0.1670%	0.0940%
30	0.0610%	0.0350%	0.2130%	0.1485%
35	0.0700%	0.0470%	0.2760%	0.2315%
40	0.0880%	0.0640%	0.3885%	0.3625%
45	0.1220%	0.0870%	0.6015%	0.5675%
50	0.1920%	0.1490%	0.9515%	0.8525%
55	0.3060%	0.2580%	1.2725%	1.0140%
60	0.5080%	0.4460%	1.5590%	1.1700%
65	0.8810%	0.7700%	1.9785%	1.4345%
70	1.5680%	1.3290%	2.7135%	1.9625%
75	2.8260%	2.2950%	3.9315%	2.9430%
80	5.1030%	3.9620%	6.0610%	4.6835%
85	9.1350%	6.8420%	9.7030%	7.7680%
90	15.8600%	11.8150%	15.4625%	12.5760%

1. Mortality rates are those applicable for the fiscal year beginning in 2010. Annual projected improvements are assumed in the following years under the schedule shown on the preceding page.

Table A-4
Immediate Refund of Contributions upon Termination of Employment
(Excludes Plan E)

Years of Service	General	Safety
0	100%	100%
1	100%	100%
2	100%	100%
3	100%	100%
4	100%	100%
5	32%	30%
6	32%	30%
7	32%	30%
8	32%	28%
9	31%	26%
10	31%	24%
11	30%	22%
12	30%	20%
13	29%	18%
14	28%	16%
15	26%	14%
16	25%	12%
17	24%	10%
18	22%	9%
19	21%	8%
20	19%	7%
21	18%	6%
22	16%	5%
23	14%	4%
24	12%	3%
25	10%	2%
26	8%	2%
27	6%	2%
28	4%	2%
29	2%	2%
30 & Up	0%	0%

Table A-5
Annual Increase in Salary[1]

Years of Service	General	Safety
<1	6.00%	9.00%
1	5.25%	8.50%
2	4.75%	8.00%
3	4.10%	6.00%
4	3.50%	4.50%
5	3.00%	3.25%
6	2.50%	2.50%
7	2.00%	2.00%
8	1.60%	1.50%
9	1.30%	1.35%
10	1.15%	1.20%
11	1.00%	1.05%
12	0.85%	0.95%
13	0.75%	0.85%
14	0.70%	0.75%
15	0.65%	0.70%
16	0.60%	0.65%
17	0.55%	0.60%
18	0.50%	0.55%
19	0.45%	2.25%
20	0.40%	0.50%
21	0.35%	0.50%
22	0.30%	0.50%
23	0.25%	0.50%
24	0.25%	3.00%
25	0.25%	0.50%
26	0.25%	0.50%
27	0.25%	0.50%
28	0.25%	0.50%
29	0.25%	3.00%
30 or More	0.25%	0.50%

1. The total expected increase in salary includes both merit (shown above) and the general wage increase assumption of 3.00% or 3.25% per annum. The total result is compounded rather than additive. For example, the total increase to service less than one year is 9.18% or 9.45% for General members.

Appendix A: Rates of Separation from Active Service
Tables A-6 to A-13

A schedule of the probabilities of termination of employment due to the following causes can be found on the following pages:

Service Retirement:	Member retires after meeting age and service requirements for reasons other than disability.
Withdrawal:	Member terminates and elects a refund of member contributions, or a deferred vested retirement benefit.
Service Disability:	Member receives disability retirement; disability is service related.
Ordinary Disability:	Member receives disability retirement; disability is not service related.
Service Death:	Member dies before retirement; death is service related.
Ordinary Death:	Member dies before retirement; death is not service related.

Each rate represents the probability that a member will separate from service at each age due to the particular cause. For example, a rate of 0.0300 for a member's service retirement at age 50 means we assume that 30 out of 1,000 members who are age 50 will retire at that age.

Each table represents the detailed rates needed for each LACERA plan by gender:

Table	A-6: General Plan A, B & C – Males	A-10: General Plan E – Males
	A-7: General Plan A, B & C – Females	A-11: General Plan E – Females
	A-8: General Plan D & G – Males	A-12: Safety Plan A, B & C – Males
	A-9: General Plan D & G – Females	A-13: Safety Plan A, B & C – Females

Table A-6
Rate of Separation from Active Service for General Members
Plans A, B & C – Male

Age	Service Retirement	Other Terminations	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00500	0.00010	0.00010	N/A	0.00043
19	0.00000	0.00500	0.00010	0.00010	N/A	0.00046
20	0.00000	0.00500	0.00010	0.00010	N/A	0.00044
21	0.00000	0.00500	0.00010	0.00010	N/A	0.00043
22	0.00000	0.00500	0.00010	0.00010	N/A	0.00040
23	0.00000	0.00500	0.00010	0.00010	N/A	0.00037
24	0.00000	0.00500	0.00010	0.00010	N/A	0.00035
25	0.00000	0.00500	0.00010	0.00010	N/A	0.00034
26	0.00000	0.00500	0.00010	0.00010	N/A	0.00036
27	0.00000	0.00500	0.00010	0.00010	N/A	0.00037
28	0.00000	0.00500	0.00010	0.00010	N/A	0.00040
29	0.00000	0.00500	0.00010	0.00010	N/A	0.00041
30	0.00000	0.00500	0.00010	0.00020	N/A	0.00043
31	0.00000	0.00500	0.00010	0.00020	N/A	0.00046
32	0.00000	0.00500	0.00010	0.00020	N/A	0.00048
33	0.00000	0.00500	0.00016	0.00020	N/A	0.00050
34	0.00000	0.00500	0.00022	0.00020	N/A	0.00053
35	0.00000	0.00500	0.00028	0.00020	N/A	0.00056
36	0.00000	0.00500	0.00034	0.00020	N/A	0.00060
37	0.00000	0.00500	0.00040	0.00020	N/A	0.00064
38	0.00000	0.00500	0.00048	0.00020	N/A	0.00068
39	0.00000	0.00500	0.00056	0.00020	N/A	0.00073
40	0.03000	0.00500	0.00064	0.00020	N/A	0.00079
41	0.03000	0.00500	0.00072	0.00020	N/A	0.00085
42	0.03000	0.00500	0.00080	0.00020	N/A	0.00092
43	0.03000	0.00500	0.00084	0.00024	N/A	0.00100
44	0.03000	0.00500	0.00088	0.00028	N/A	0.00108
45	0.03000	0.00500	0.00092	0.00032	N/A	0.00118
46	0.03000	0.00500	0.00096	0.00036	N/A	0.00128
47	0.03000	0.00500	0.00100	0.00040	N/A	0.00139
48	0.03000	0.00500	0.00104	0.00044	N/A	0.00152
49	0.03000	0.00500	0.00108	0.00048	N/A	0.00166
50	0.03000	0.00500	0.00112	0.00052	N/A	0.00179
51	0.03000	0.00500	0.00116	0.00056	N/A	0.00194
52	0.03000	0.00500	0.00120	0.00060	N/A	0.00210
53	0.03000	0.00500	0.00156	0.00064	N/A	0.00227
54	0.06000	0.00500	0.00192	0.00068	N/A	0.00244
55	0.10000	0.00500	0.00228	0.00072	N/A	0.00263
56	0.12000	0.00500	0.00264	0.00076	N/A	0.00283
57	0.17000	0.00500	0.00300	0.00080	N/A	0.00306
58	0.26000	0.00500	0.00330	0.00084	N/A	0.00330
59	0.26000	0.00500	0.00360	0.00088	N/A	0.00355
60	0.32000	0.00500	0.00390	0.00092	N/A	0.00383
61	0.32000	0.00500	0.00420	0.00096	N/A	0.00413
62	0.32000	0.00500	0.00450	0.00100	N/A	0.00445
63	0.32000	0.00500	0.00450	0.00104	N/A	0.00481
64	0.32000	0.00500	0.00450	0.00108	N/A	0.00520
65	0.32000	0.00500	0.00450	0.00112	N/A	0.00562
66	0.25000	0.00500	0.00450	0.00116	N/A	0.00607
67	0.24000	0.00500	0.00450	0.00120	N/A	0.00658
68	0.24000	0.00500	0.00450	0.00124	N/A	0.00713
69	0.24000	0.00500	0.00450	0.00128	N/A	0.00775
70	0.24000	0.00500	0.00450	0.00132	N/A	0.00844
71	0.24000	0.00500	0.00450	0.00136	N/A	0.00920
72	0.24000	0.00500	0.00450	0.00140	N/A	0.01004
73	0.24000	0.00500	0.00450	0.00144	N/A	0.01098
74	0.24000	0.00500	0.00450	0.00148	N/A	0.01201
75	1.00000	0.00000	0.00000	0.00000	N/A	0.01315

Table A-7
Rate of Separation from Active Service for General Members
Plans A, B & C – Female

Age	Service Retirement	Other Terminations	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
19	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
20	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
21	0.00000	0.00500	0.00015	0.00010	N/A	0.00016
22	0.00000	0.00500	0.00015	0.00010	N/A	0.00014
23	0.00000	0.00500	0.00015	0.00010	N/A	0.00013
24	0.00000	0.00500	0.00015	0.00010	N/A	0.00012
25	0.00000	0.00500	0.00015	0.00010	N/A	0.00012
26	0.00000	0.00500	0.00015	0.00010	N/A	0.00013
27	0.00000	0.00500	0.00015	0.00010	N/A	0.00014
28	0.00000	0.00500	0.00015	0.00010	N/A	0.00016
29	0.00000	0.00500	0.00015	0.00010	N/A	0.00017
30	0.00000	0.00500	0.00015	0.00010	N/A	0.00020
31	0.00000	0.00500	0.00015	0.00010	N/A	0.00021
32	0.00000	0.00500	0.00015	0.00010	N/A	0.00023
33	0.00000	0.00500	0.00020	0.00010	N/A	0.00025
34	0.00000	0.00500	0.00025	0.00010	N/A	0.00027
35	0.00000	0.00500	0.00030	0.00010	N/A	0.00030
36	0.00000	0.00500	0.00035	0.00010	N/A	0.00033
37	0.00000	0.00500	0.00040	0.00010	N/A	0.00036
38	0.00000	0.00500	0.00042	0.00014	N/A	0.00039
39	0.00000	0.00500	0.00044	0.00018	N/A	0.00043
40	0.03000	0.00500	0.00046	0.00022	N/A	0.00047
41	0.03000	0.00500	0.00048	0.00026	N/A	0.00052
42	0.03000	0.00500	0.00050	0.00030	N/A	0.00056
43	0.03000	0.00500	0.00060	0.00032	N/A	0.00061
44	0.03000	0.00500	0.00070	0.00034	N/A	0.00066
45	0.03000	0.00500	0.00080	0.00036	N/A	0.00073
46	0.03000	0.00500	0.00090	0.00038	N/A	0.00079
47	0.03000	0.00500	0.00100	0.00040	N/A	0.00086
48	0.03000	0.00500	0.00110	0.00042	N/A	0.00092
49	0.03000	0.00500	0.00120	0.00044	N/A	0.00100
50	0.03000	0.00500	0.00130	0.00046	N/A	0.00108
51	0.03000	0.00500	0.00140	0.00048	N/A	0.00117
52	0.03000	0.00500	0.00150	0.00050	N/A	0.00126
53	0.03000	0.00500	0.00156	0.00052	N/A	0.00137
54	0.06000	0.00500	0.00162	0.00054	N/A	0.00147
55	0.10000	0.00500	0.00168	0.00056	N/A	0.00160
56	0.12000	0.00500	0.00174	0.00058	N/A	0.00173
57	0.17000	0.00500	0.00180	0.00060	N/A	0.00187
58	0.26000	0.00500	0.00194	0.00064	N/A	0.00203
59	0.26000	0.00500	0.00208	0.00068	N/A	0.00221
60	0.32000	0.00500	0.00222	0.00072	N/A	0.00242
61	0.32000	0.00500	0.00236	0.00076	N/A	0.00264
62	0.32000	0.00500	0.00250	0.00080	N/A	0.00289
63	0.32000	0.00500	0.00250	0.00084	N/A	0.00317
64	0.32000	0.00500	0.00250	0.00088	N/A	0.00350
65	0.32000	0.00500	0.00250	0.00092	N/A	0.00385
66	0.25000	0.00500	0.00250	0.00096	N/A	0.00425
67	0.24000	0.00500	0.00250	0.00100	N/A	0.00471
68	0.24000	0.00500	0.00250	0.00104	N/A	0.00520
69	0.24000	0.00500	0.00250	0.00108	N/A	0.00575
70	0.24000	0.00500	0.00250	0.00112	N/A	0.00636
71	0.24000	0.00500	0.00250	0.00116	N/A	0.00703
72	0.24000	0.00500	0.00250	0.00120	N/A	0.00777
73	0.24000	0.00500	0.00250	0.00124	N/A	0.00859
74	0.24000	0.00500	0.00250	0.00128	N/A	0.00950
75	1.00000	0.00000	0.00000	0.00000	N/A	0.01050

Table A-8
Rate of Separation from Active Service for General Members
Plan D & G – Male

Age	Service Retirement Plan D	Service Retirement Plan G	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00010	0.00010	N/A	0.00043
19	0.00000	0.00000	0.00010	0.00010	N/A	0.00046
20	0.00000	0.00000	0.00010	0.00010	N/A	0.00044
21	0.00000	0.00000	0.00010	0.00010	N/A	0.00043
22	0.00000	0.00000	0.00010	0.00010	N/A	0.00040
23	0.00000	0.00000	0.00010	0.00010	N/A	0.00037
24	0.00000	0.00000	0.00010	0.00010	N/A	0.00035
25	0.00000	0.00000	0.00010	0.00010	N/A	0.00034
26	0.00000	0.00000	0.00010	0.00010	N/A	0.00036
27	0.00000	0.00000	0.00010	0.00010	N/A	0.00037
28	0.00000	0.00000	0.00010	0.00010	N/A	0.00040
29	0.00000	0.00000	0.00010	0.00010	N/A	0.00041
30	0.00000	0.00000	0.00010	0.00020	N/A	0.00043
31	0.00000	0.00000	0.00010	0.00020	N/A	0.00046
32	0.00000	0.00000	0.00010	0.00020	N/A	0.00048
33	0.00000	0.00000	0.00016	0.00020	N/A	0.00050
34	0.00000	0.00000	0.00022	0.00020	N/A	0.00053
35	0.00000	0.00000	0.00028	0.00020	N/A	0.00056
36	0.00000	0.00000	0.00034	0.00020	N/A	0.00060
37	0.00000	0.00000	0.00040	0.00020	N/A	0.00064
38	0.00000	0.00000	0.00048	0.00020	N/A	0.00068
39	0.00000	0.00000	0.00056	0.00020	N/A	0.00073
40	0.01500	0.00000	0.00064	0.00020	N/A	0.00079
41	0.01500	0.00000	0.00072	0.00020	N/A	0.00085
42	0.01500	0.00000	0.00080	0.00020	N/A	0.00092
43	0.01500	0.00000	0.00084	0.00024	N/A	0.00100
44	0.01500	0.00000	0.00088	0.00028	N/A	0.00108
45	0.01500	0.00000	0.00092	0.00032	N/A	0.00118
46	0.01500	0.00000	0.00096	0.00036	N/A	0.00128
47	0.01500	0.00000	0.00100	0.00040	N/A	0.00139
48	0.01500	0.00000	0.00104	0.00044	N/A	0.00152
49	0.01500	0.00000	0.00108	0.00048	N/A	0.00166
50	0.01500	0.01200	0.00112	0.00052	N/A	0.00179
51	0.01200	0.00960	0.00116	0.00056	N/A	0.00194
52	0.01200	0.00960	0.00120	0.00060	N/A	0.00210
53	0.01500	0.01200	0.00156	0.00064	N/A	0.00227
54	0.02000	0.01600	0.00192	0.00068	N/A	0.00244
55	0.02500	0.02000	0.00228	0.00072	N/A	0.00263
56	0.02500	0.02000	0.00264	0.00076	N/A	0.00283
57	0.03000	0.02400	0.00300	0.00080	N/A	0.00306
58	0.03500	0.02800	0.00330	0.00084	N/A	0.00330
59	0.05000	0.04000	0.00360	0.00088	N/A	0.00355
60	0.07000	0.05600	0.00390	0.00092	N/A	0.00383
61	0.08000	0.06400	0.00420	0.00096	N/A	0.00413
62	0.11000	0.11000	0.00450	0.00100	N/A	0.00445
63	0.11000	0.11000	0.00450	0.00104	N/A	0.00481
64	0.16000	0.16000	0.00450	0.00108	N/A	0.00520
65	0.23000	0.18000	0.00450	0.00112	N/A	0.00562
66	0.20000	0.18000	0.00450	0.00116	N/A	0.00607
67	0.19000	0.30000	0.00450	0.00120	N/A	0.00658
68	0.18000	0.18000	0.00450	0.00124	N/A	0.00713
69	0.20000	0.20000	0.00450	0.00128	N/A	0.00775
70	0.23000	0.23000	0.00450	0.00132	N/A	0.00844
71	0.20000	0.20000	0.00450	0.00136	N/A	0.00920
72	0.20000	0.20000	0.00450	0.00140	N/A	0.01004
73	0.20000	0.20000	0.00450	0.00144	N/A	0.01098
74	0.20000	0.20000	0.00450	0.00148	N/A	0.01201
75	1.00000	1.00000	0.00000	0.00000	N/A	0.01315

Years of Service	Other Terminations
0	0.07000
1	0.05500
2	0.04000
3	0.03250
4	0.02500
5	0.02330
6	0.02170
7	0.02000
8	0.01900
9	0.01800
10	0.01700
11	0.01600
12	0.01500
13	0.01400
14	0.01300
15	0.01200
16	0.01100
17	0.01000
18	0.00920
19	0.00840
20	0.00760
21	0.00680
22	0.00600
23	0.00560
24	0.00520
25	0.00480
26	0.00440
27	0.00400
28	0.00400
29	0.00400
30 & Above	0.00000

Table A-9
Rate of Separation from Active Service for General Members
Plan D & G – Female

Age	Service Retirement Plan D	Service Retirement Plan G	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
19	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
20	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
21	0.00000	0.00000	0.00015	0.00010	N/A	0.00016
22	0.00000	0.00000	0.00015	0.00010	N/A	0.00014
23	0.00000	0.00000	0.00015	0.00010	N/A	0.00013
24	0.00000	0.00000	0.00015	0.00010	N/A	0.00012
25	0.00000	0.00000	0.00015	0.00010	N/A	0.00012
26	0.00000	0.00000	0.00015	0.00010	N/A	0.00013
27	0.00000	0.00000	0.00015	0.00010	N/A	0.00014
28	0.00000	0.00000	0.00015	0.00010	N/A	0.00016
29	0.00000	0.00000	0.00015	0.00010	N/A	0.00017
30	0.00000	0.00000	0.00015	0.00010	N/A	0.00020
31	0.00000	0.00000	0.00015	0.00010	N/A	0.00021
32	0.00000	0.00000	0.00015	0.00010	N/A	0.00023
33	0.00000	0.00000	0.00020	0.00010	N/A	0.00025
34	0.00000	0.00000	0.00025	0.00010	N/A	0.00027
35	0.00000	0.00000	0.00030	0.00010	N/A	0.00030
36	0.00000	0.00000	0.00035	0.00010	N/A	0.00033
37	0.00000	0.00000	0.00040	0.00010	N/A	0.00036
38	0.00000	0.00000	0.00042	0.00014	N/A	0.00039
39	0.00000	0.00000	0.00044	0.00018	N/A	0.00043
40	0.01500	0.00000	0.00046	0.00022	N/A	0.00047
41	0.01500	0.00000	0.00048	0.00026	N/A	0.00052
42	0.01500	0.00000	0.00050	0.00030	N/A	0.00056
43	0.01500	0.00000	0.00060	0.00032	N/A	0.00061
44	0.01500	0.00000	0.00070	0.00034	N/A	0.00066
45	0.01500	0.00000	0.00080	0.00036	N/A	0.00073
46	0.01500	0.00000	0.00090	0.00038	N/A	0.00079
47	0.01500	0.00000	0.00100	0.00040	N/A	0.00086
48	0.01500	0.00000	0.00110	0.00042	N/A	0.00092
49	0.01500	0.00000	0.00120	0.00044	N/A	0.00100
50	0.01500	0.01200	0.00130	0.00046	N/A	0.00108
51	0.01200	0.00960	0.00140	0.00048	N/A	0.00117
52	0.01200	0.00960	0.00150	0.00050	N/A	0.00126
53	0.01500	0.01200	0.00156	0.00052	N/A	0.00137
54	0.02000	0.01600	0.00162	0.00054	N/A	0.00147
55	0.02500	0.02000	0.00168	0.00056	N/A	0.00160
56	0.02500	0.02000	0.00174	0.00058	N/A	0.00173
57	0.03000	0.02400	0.00180	0.00060	N/A	0.00187
58	0.03500	0.02800	0.00194	0.00064	N/A	0.00203
59	0.05000	0.04000	0.00208	0.00068	N/A	0.00221
60	0.07000	0.05600	0.00222	0.00072	N/A	0.00242
61	0.08000	0.06400	0.00236	0.00076	N/A	0.00264
62	0.11000	0.11000	0.00250	0.00080	N/A	0.00289
63	0.11000	0.11000	0.00250	0.00084	N/A	0.00317
64	0.16000	0.16000	0.00250	0.00088	N/A	0.00350
65	0.23000	0.18000	0.00250	0.00092	N/A	0.00385
66	0.20000	0.18000	0.00250	0.00096	N/A	0.00425
67	0.19000	0.30000	0.00250	0.00100	N/A	0.00471
68	0.18000	0.18000	0.00250	0.00104	N/A	0.00520
69	0.20000	0.20000	0.00250	0.00108	N/A	0.00575
70	0.23000	0.23000	0.00250	0.00112	N/A	0.00636
71	0.20000	0.20000	0.00250	0.00116	N/A	0.00703
72	0.20000	0.20000	0.00250	0.00120	N/A	0.00777
73	0.20000	0.20000	0.00250	0.00124	N/A	0.00859
74	0.20000	0.20000	0.00250	0.00128	N/A	0.00950
75	1.00000	1.00000	0.00000	0.00000	N/A	0.01050

Years of Service	Other Terminations
0	0.07000
1	0.05500
2	0.04000
3	0.03250
4	0.02500
5	0.02330
6	0.02170
7	0.02000
8	0.01900
9	0.01800
10	0.01700
11	0.01600
12	0.01500
13	0.01400
14	0.01300
15	0.01200
16	0.01100
17	0.01000
18	0.00920
19	0.00840
20	0.00760
21	0.00680
22	0.00600
23	0.00560
24	0.00520
25	0.00480
26	0.00440
27	0.00400
28	0.00400
29	0.00400
30 & Above	0.00000

Table A-10
Rate of Separation from Active Service for General Members
Plan E – Male

Age	Service Retirement	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.00000	N/A	N/A	N/A	0.00043	0	0.15000
19	0.00000	N/A	N/A	N/A	0.00046	1	0.08000
20	0.00000	N/A	N/A	N/A	0.00044	2	0.06000
21	0.00000	N/A	N/A	N/A	0.00043	3	0.04500
22	0.00000	N/A	N/A	N/A	0.00040	4	0.03500
23	0.00000	N/A	N/A	N/A	0.00037	5	0.03100
24	0.00000	N/A	N/A	N/A	0.00035	6	0.02700
25	0.00000	N/A	N/A	N/A	0.00034	7	0.02300
26	0.00000	N/A	N/A	N/A	0.00036	8	0.02200
27	0.00000	N/A	N/A	N/A	0.00037	9	0.02100
28	0.00000	N/A	N/A	N/A	0.00040	10	0.02000
29	0.00000	N/A	N/A	N/A	0.00041	11	0.01900
30	0.00000	N/A	N/A	N/A	0.00043	12	0.01800
31	0.00000	N/A	N/A	N/A	0.00046	13	0.01680
32	0.00000	N/A	N/A	N/A	0.00048	14	0.01560
33	0.00000	N/A	N/A	N/A	0.00050	15	0.01440
34	0.00000	N/A	N/A	N/A	0.00053	16	0.01320
35	0.00000	N/A	N/A	N/A	0.00056	17	0.01200
36	0.00000	N/A	N/A	N/A	0.00060	18	0.01160
37	0.00000	N/A	N/A	N/A	0.00064	19	0.01120
38	0.00000	N/A	N/A	N/A	0.00068	20	0.01080
39	0.00000	N/A	N/A	N/A	0.00073	21	0.01040
40	0.00000	N/A	N/A	N/A	0.00079	22	0.01000
41	0.00000	N/A	N/A	N/A	0.00085	23	0.01000
42	0.00000	N/A	N/A	N/A	0.00092	24	0.01000
43	0.00000	N/A	N/A	N/A	0.00100	25	0.01000
44	0.00000	N/A	N/A	N/A	0.00108	26	0.01000
45	0.00000	N/A	N/A	N/A	0.00118	27	0.01000
46	0.00000	N/A	N/A	N/A	0.00128	28	0.01000
47	0.00000	N/A	N/A	N/A	0.00139	29	0.01000
48	0.00000	N/A	N/A	N/A	0.00152	30 & Above	0.01000
49	0.00000	N/A	N/A	N/A	0.00166		
50	0.00000	N/A	N/A	N/A	0.00179		
51	0.00000	N/A	N/A	N/A	0.00194		
52	0.00000	N/A	N/A	N/A	0.00210		
53	0.00000	N/A	N/A	N/A	0.00227		
54	0.00000	N/A	N/A	N/A	0.00244		
55	0.02000	N/A	N/A	N/A	0.00263		
56	0.02000	N/A	N/A	N/A	0.00283		
57	0.02500	N/A	N/A	N/A	0.00306		
58	0.02500	N/A	N/A	N/A	0.00330		
59	0.03000	N/A	N/A	N/A	0.00355		
60	0.04000	N/A	N/A	N/A	0.00383		
61	0.06000	N/A	N/A	N/A	0.00413		
62	0.09000	N/A	N/A	N/A	0.00445		
63	0.09000	N/A	N/A	N/A	0.00481		
64	0.20000	N/A	N/A	N/A	0.00520		
65	0.28000	N/A	N/A	N/A	0.00562		
66	0.19000	N/A	N/A	N/A	0.00607		
67	0.19000	N/A	N/A	N/A	0.00658		
68	0.19000	N/A	N/A	N/A	0.00713		
69	0.19000	N/A	N/A	N/A	0.00775		
70	0.19000	N/A	N/A	N/A	0.00844		
71	0.19000	N/A	N/A	N/A	0.00920		
72	0.19000	N/A	N/A	N/A	0.01004		
73	0.19000	N/A	N/A	N/A	0.01098		
74	0.19000	N/A	N/A	N/A	0.01201		
75	1.00000	N/A	N/A	N/A	0.01315		

Table A-11
Rate of Separation from Active Service for General Members
Plan E – Female

Age	Service Retirement	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	N/A	N/A	N/A	0.00017
19	0.00000	N/A	N/A	N/A	0.00017
20	0.00000	N/A	N/A	N/A	0.00017
21	0.00000	N/A	N/A	N/A	0.00016
22	0.00000	N/A	N/A	N/A	0.00014
23	0.00000	N/A	N/A	N/A	0.00013
24	0.00000	N/A	N/A	N/A	0.00012
25	0.00000	N/A	N/A	N/A	0.00012
26	0.00000	N/A	N/A	N/A	0.00013
27	0.00000	N/A	N/A	N/A	0.00014
28	0.00000	N/A	N/A	N/A	0.00016
29	0.00000	N/A	N/A	N/A	0.00017
30	0.00000	N/A	N/A	N/A	0.00020
31	0.00000	N/A	N/A	N/A	0.00021
32	0.00000	N/A	N/A	N/A	0.00023
33	0.00000	N/A	N/A	N/A	0.00025
34	0.00000	N/A	N/A	N/A	0.00027
35	0.00000	N/A	N/A	N/A	0.00030
36	0.00000	N/A	N/A	N/A	0.00033
37	0.00000	N/A	N/A	N/A	0.00036
38	0.00000	N/A	N/A	N/A	0.00039
39	0.00000	N/A	N/A	N/A	0.00043
40	0.00000	N/A	N/A	N/A	0.00047
41	0.00000	N/A	N/A	N/A	0.00052
42	0.00000	N/A	N/A	N/A	0.00056
43	0.00000	N/A	N/A	N/A	0.00061
44	0.00000	N/A	N/A	N/A	0.00066
45	0.00000	N/A	N/A	N/A	0.00073
46	0.00000	N/A	N/A	N/A	0.00079
47	0.00000	N/A	N/A	N/A	0.00086
48	0.00000	N/A	N/A	N/A	0.00092
49	0.00000	N/A	N/A	N/A	0.00100
50	0.00000	N/A	N/A	N/A	0.00108
51	0.00000	N/A	N/A	N/A	0.00117
52	0.00000	N/A	N/A	N/A	0.00126
53	0.00000	N/A	N/A	N/A	0.00137
54	0.00000	N/A	N/A	N/A	0.00147
55	0.02000	N/A	N/A	N/A	0.00160
56	0.02000	N/A	N/A	N/A	0.00173
57	0.02500	N/A	N/A	N/A	0.00187
58	0.02500	N/A	N/A	N/A	0.00203
59	0.03000	N/A	N/A	N/A	0.00221
60	0.04000	N/A	N/A	N/A	0.00242
61	0.06000	N/A	N/A	N/A	0.00264
62	0.09000	N/A	N/A	N/A	0.00289
63	0.09000	N/A	N/A	N/A	0.00317
64	0.20000	N/A	N/A	N/A	0.00350
65	0.28000	N/A	N/A	N/A	0.00385
66	0.19000	N/A	N/A	N/A	0.00425
67	0.19000	N/A	N/A	N/A	0.00471
68	0.19000	N/A	N/A	N/A	0.00520
69	0.19000	N/A	N/A	N/A	0.00575
70	0.19000	N/A	N/A	N/A	0.00636
71	0.19000	N/A	N/A	N/A	0.00703
72	0.19000	N/A	N/A	N/A	0.00777
73	0.19000	N/A	N/A	N/A	0.00859
74	0.19000	N/A	N/A	N/A	0.00950
75	1.00000	N/A	N/A	N/A	0.01050

Years of Service	Other Terminations
0	0.15000
1	0.08000
2	0.06000
3	0.04500
4	0.03500
5	0.03100
6	0.02700
7	0.02300
8	0.02200
9	0.02100
10	0.02000
11	0.01900
12	0.01800
13	0.01680
14	0.01560
15	0.01440
16	0.01320
17	0.01200
18	0.01160
19	0.01120
20	0.01080
21	0.01040
22	0.01000
23	0.01000
24	0.01000
25	0.01000
26	0.01000
27	0.01000
28	0.01000
29	0.01000
30 & Above	0.01000

Table A-12
Rate of Separation from Active Service for Safety Members
Plan A, B & C – Male

Age	Service Retirement Plans A-B	Service Retirement Plan C	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00200	0.00000	0.00010	0.00037
19	0.00000	0.00000	0.00200	0.00000	0.00010	0.00040
20	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
21	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
22	0.00000	0.00000	0.00200	0.00000	0.00010	0.00040
23	0.00000	0.00000	0.00200	0.00000	0.00010	0.00039
24	0.00000	0.00000	0.00200	0.00000	0.00010	0.00038
25	0.00000	0.00000	0.00200	0.00000	0.00010	0.00037
26	0.00000	0.00000	0.00200	0.00000	0.00010	0.00038
27	0.00000	0.00000	0.00200	0.00000	0.00010	0.00039
28	0.00000	0.00000	0.00200	0.00000	0.00010	0.00040
29	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
30	0.00000	0.00000	0.00200	0.00000	0.00010	0.00041
31	0.00000	0.00000	0.00200	0.00000	0.00010	0.00042
32	0.00000	0.00000	0.00200	0.00000	0.00010	0.00043
33	0.00000	0.00000	0.00210	0.00000	0.00010	0.00044
34	0.00000	0.00000	0.00220	0.00000	0.00010	0.00045
35	0.00000	0.00000	0.00230	0.00000	0.00010	0.00047
36	0.00000	0.00000	0.00240	0.00000	0.00010	0.00049
37	0.00000	0.00000	0.00250	0.00000	0.00010	0.00050
38	0.00000	0.00000	0.00260	0.00000	0.00010	0.00053
39	0.00000	0.00000	0.00270	0.00000	0.00010	0.00056
40	0.00750	0.00750	0.00280	0.00000	0.00010	0.00059
41	0.00750	0.00750	0.00290	0.00000	0.00010	0.00062
42	0.00750	0.00750	0.00300	0.00000	0.00010	0.00067
43	0.00750	0.00750	0.00310	0.00000	0.00010	0.00071
44	0.00750	0.00750	0.00320	0.00000	0.00010	0.00076
45	0.00750	0.00750	0.00330	0.00000	0.00010	0.00082
46	0.00750	0.00750	0.00340	0.00000	0.00010	0.00088
47	0.00750	0.00750	0.00350	0.00000	0.00010	0.00095
48	0.00750	0.00750	0.00400	0.00000	0.00010	0.00102
49	0.00750	0.00750	0.00500	0.00000	0.00010	0.00111
50	0.02000	0.02000	0.00750	0.00000	0.00010	0.00120
51	0.02000	0.02000	0.00750	0.00000	0.00010	0.00129
52	0.02000	0.02000	0.00750	0.00000	0.00010	0.00140
53	0.03000	0.03000	0.02000	0.00000	0.00010	0.00151
54	0.15000	0.10000	0.02000	0.00000	0.00010	0.00162
55	0.26000	0.15000	0.07500	0.00000	0.00010	0.00175
56	0.17000	0.15000	0.07500	0.00000	0.00010	0.00190
57	0.17000	0.28000	0.10000	0.00000	0.00010	0.00205
58	0.17000	0.17000	0.10000	0.00000	0.00010	0.00223
59	0.27000	0.27000	0.10000	0.00000	0.00010	0.00243
60	0.27000	0.27000	0.10000	0.00000	0.00010	0.00264
61	0.25000	0.25000	0.05000	0.00000	0.00010	0.00288
62	0.25000	0.25000	0.05000	0.00000	0.00010	0.00315
63	0.25000	0.25000	0.05000	0.00000	0.00010	0.00344
64	0.25000	0.25000	0.05000	0.00000	0.00010	0.00375
65	1.00000	1.00000	0.00000	0.00000	0.00000	0.00410

Years of Service	Other Terminations
0	0.03500
1	0.02750
2	0.02000
3	0.01500
4	0.01200
5	0.01130
6	0.01070
7	0.01000
8	0.00920
9	0.00840
10	0.00760
11	0.00680
12	0.00600
13	0.00560
14	0.00520
15	0.00480
16	0.00440
17	0.00400
18	0.00360
19	0.00320
20	0.00280
21	0.00240
22	0.00200
23	0.00200
24	0.00200
25	0.00200
26	0.00200
27	0.00200
28	0.00200
29	0.00200
30 & Above	0.00000

Table A-13
Rate of Separation from Active Service for Safety Members
Plan A, B & C – Female

Age	Service Retirement Plans A-B	Service Retirement Plan C	Service Disability	Ordinary Disability	Service Death	Ordinary Death
18	0.00000	0.00000	0.00300	0.00000	0.00010	0.00014
19	0.00000	0.00000	0.00300	0.00000	0.00010	0.00015
20	0.00000	0.00000	0.00300	0.00000	0.00010	0.00016
21	0.00000	0.00000	0.00300	0.00000	0.00010	0.00017
22	0.00000	0.00000	0.00300	0.00000	0.00010	0.00017
23	0.00000	0.00000	0.00300	0.00000	0.00010	0.00018
24	0.00000	0.00000	0.00300	0.00000	0.00010	0.00019
25	0.00000	0.00000	0.00300	0.00000	0.00010	0.00020
26	0.00000	0.00000	0.00300	0.00000	0.00010	0.00021
27	0.00000	0.00000	0.00300	0.00000	0.00010	0.00022
28	0.00000	0.00000	0.00340	0.00000	0.00010	0.00024
29	0.00000	0.00000	0.00380	0.00000	0.00010	0.00025
30	0.00000	0.00000	0.00420	0.00000	0.00010	0.00027
31	0.00000	0.00000	0.00460	0.00000	0.00010	0.00028
32	0.00000	0.00000	0.00500	0.00000	0.00010	0.00030
33	0.00000	0.00000	0.00560	0.00000	0.00010	0.00032
34	0.00000	0.00000	0.00620	0.00000	0.00010	0.00034
35	0.00000	0.00000	0.00680	0.00000	0.00010	0.00036
36	0.00000	0.00000	0.00740	0.00000	0.00010	0.00038
37	0.00000	0.00000	0.00800	0.00000	0.00010	0.00041
38	0.00000	0.00000	0.00840	0.00000	0.00010	0.00043
39	0.00000	0.00000	0.00880	0.00000	0.00010	0.00046
40	0.00750	0.00750	0.00920	0.00000	0.00010	0.00049
41	0.00750	0.00750	0.00960	0.00000	0.00010	0.00052
42	0.00750	0.00750	0.01000	0.00000	0.00010	0.00056
43	0.00750	0.00750	0.01040	0.00000	0.00010	0.00059
44	0.00750	0.00750	0.01080	0.00000	0.00010	0.00063
45	0.00750	0.00750	0.01120	0.00000	0.00010	0.00067
46	0.00750	0.00750	0.01160	0.00000	0.00010	0.00071
47	0.00750	0.00750	0.01200	0.00000	0.00010	0.00076
48	0.00750	0.00750	0.01300	0.00000	0.00010	0.00080
49	0.00750	0.00750	0.01500	0.00000	0.00010	0.00085
50	0.02000	0.02000	0.01800	0.00000	0.00010	0.00091
51	0.02000	0.02000	0.02000	0.00000	0.00010	0.00097
52	0.02000	0.02000	0.02400	0.00000	0.00010	0.00103
53	0.03000	0.03000	0.02800	0.00000	0.00010	0.00109
54	0.15000	0.10000	0.03200	0.00000	0.00010	0.00116
55	0.26000	0.15000	0.11000	0.00000	0.00010	0.00123
56	0.17000	0.15000	0.06000	0.00000	0.00010	0.00131
57	0.17000	0.28000	0.06000	0.00000	0.00010	0.00140
58	0.17000	0.17000	0.06000	0.00000	0.00010	0.00148
59	0.27000	0.27000	0.06000	0.00000	0.00010	0.00158
60	0.27000	0.27000	0.06000	0.00000	0.00010	0.00168
61	0.25000	0.25000	0.06000	0.00000	0.00010	0.00178
62	0.25000	0.25000	0.06000	0.00000	0.00010	0.00190
63	0.25000	0.25000	0.06000	0.00000	0.00010	0.00202
64	0.25000	0.25000	0.06000	0.00000	0.00010	0.00215
65	1.00000	1.00000	0.00000	0.00000	0.00000	0.00228

Years of Service	Other Terminations
0	0.03500
1	0.02750
2	0.02000
3	0.01500
4	0.01200
5	0.01130
6	0.01070
7	0.01000
8	0.00920
9	0.00840
10	0.00760
11	0.00680
12	0.00600
13	0.00560
14	0.00520
15	0.00480
16	0.00440
17	0.00400
18	0.00360
19	0.00320
20	0.00280
21	0.00240
22	0.00200
23	0.00200
24	0.00200
25	0.00200
26	0.00200
27	0.00200
28	0.00200
29	0.00200
30 & Above	0.00000

ATTACHMENT II

Draft Cavanaugh MacDonald's Actuarial Review report

Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

ACTUARIAL REVIEW REPORT ON THE

2019 INVESTIGATION OF EXPERIENCE FOR THE LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Prepared by Cavanaugh Macdonald Consulting, LLC

December 27, 2019

www.CavMacConsulting.com

Cavanaugh Macdonald
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The experience and dedication you deserve

December 27, 2019

Mr. Richard Bendall
Chief Audit Executive
Los Angeles County Employees Retirement System
300 North Lake Avenue, Suite 840
Pasadena, California 91101

Dear Mr. Bendall:

Cavanaugh Macdonald Consulting, LLC has performed an independent review of the 2019 Investigation of Experience for Retirement Benefit Assumptions, prepared for the Los Angeles County Employees Retirement Association (LACERA). As an independent reviewing or auditing actuary, we have provided our professional opinion on the reasonableness and appropriateness of the actuarial assumptions and actuarial cost methods recommended in the report and offered comments on possible ways to improve the process in future experience investigations.

The retained actuary for the System is Milliman, Inc. and we would like to thank them for their cooperation and assistance in providing the required information to us. **We generally find the proposed actuarial assumptions and methods to be reasonable. The Investigation of Experience was performed by qualified actuaries and was performed in accordance with the principles and practices prescribed by the Actuarial Standards Board.** This report documents the detailed results of our review.

If you need anything else, please do not hesitate to give us a call. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

Sincerely,

Brent A. Banister

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1. Executive Summary

LACERA engaged Cavanaugh Macdonald Consulting, LLC (CMC) to prepare an independent review of the 2019 Investigation of Experience for the Retirement Benefits Assumptions Report prepared by Milliman for LACERA. The scope of the actuarial review requested by LACERA includes an independent verification of the results and evaluation of any recommendations in the Report, the preparation of a report containing CMC's findings and conclusions from the actuarial review, and a presentation of any findings to the Board of Investment.

The process of setting actuarial assumptions brings together a blend of both numerical analysis and professional judgment. An experience study is not simply a mathematical exercise, but also draws on the experience and insight of the professionals conducting the study. While our review included confirming certain data tabulations supporting the results in Milliman's report, we wish to stress that we have also examined the bigger picture to determine if an assumption, or recommended change, is appropriate. We consider whether there are other ways to form an assumption, whether an assumption may be simplified, and whether or not the assumption reflects trends that we have observed in other plans. The fact that we might prefer an alternate approach does not automatically mean that Milliman's approach is not reasonable. Rather, we offer some of these thoughts as a consideration for future studies, fully aware that there are multiple ways in which to appropriately model a dynamic retirement program like LACERA.

In general, we find Milliman's work to be accurate and complete, and we have not identified any material findings.

We summarize our findings for each major review task as follows:

1. **Review of Data Used in the 2019 Experience Study**
   The actuarial review of the 2019 Investigation of Experience for Retirement Benefit Assumptions Report is based on the experience study data that Milliman provided. We requested and received from Milliman the full valuation data files for the 2016, 2017, 2018, and 2019 valuations. These files allowed us to replicate certain portions of Milliman's work with regards to the analysis of demographic assumptions. In our opinion, the data used is sufficient for the purposes of the experience study, appears consistent with previous Retirement Plan valuations and, therefore, appropriately reflects the active and inactive membership of LACERA during the three-year period ending on June 30, 2019.

2. **Review the Proposed Economic and Demographic Assumptions Contained in the 2019 Investigation of Experience for Retirement Benefits Assumptions Report**
   We find the work prepared by Milliman—reviewed within the scope of this assignment—to be based on reasonable processes, to be technically sound, and to be fairly presented. Milliman's work related to LACERA's experience, selecting assumptions, and presenting the associated results is based on generally accepted actuarial practices and principles. Relevant details for each assumption reviewed are provided in Section 3 of our Report.

3. **Present Any Recommendations to the Board of Investments Regarding the Work Completed by Milliman**
   We believe that the actuarial assumptions recommended by Milliman are reasonable and appropriate for use in the upcoming actuarial valuation for LACERA. We have no findings of material discrepancies with generally accepted actuarial principles or professional standards. In Section 4, we provide some minor considerations and recommendations for future studies.

Milliman proposes changes to most of the assumptions in its experience study. We would classify many of these as typical on-going and fine-tuning changes. We believe that all of the proposed changes are reasonable and appropriate. Our findings and recommendations are summarized as follows:

- The most significant of the proposed changes is the investment return assumption. Milliman provides two sets of other economic assumptions that each are consistent with their recommendation of 6.75% for the investment return assumption. The key difference in these two sets is the underlying inflation assumption which affects the other economic assumptions. While 6.75% is a reasonable assumption, Milliman notes that there is a broader range that could be acceptable. We comment on this further in our report.
- We suggest that Milliman consider the use of separate assumptions for Los Angeles inflation (for wage growth and COLA) and national inflation (for the investment assumption), especially if the Board is considering adopting a 2.50% national inflation assumption.
- Milliman's analysis of the total investment return assumption is a reasonable method, but we would suggest that they consider directly developing an assumption for the real rate of return to make the analysis of total return more transparent. This would also allow the inflation and real return assumptions to be decoupled.

Conclusions

Because of the complexity of actuarial work, we would not expect our opinions regarding the selection of assumptions and methods to be the same as the opinions of Milliman. We do expect, however, that there would be sufficient explanation of their choices that we can acknowledge that they are reasonable based upon the relevant factors. In our opinion, the assumptions and methods proposed by Milliman are reflective of sound professional judgement and are appropriate for the systematic funding of the pension obligations of LACERA.

We have determined that the actuarial methods, assumptions, processes, and the report are consistent with the applicable Actuarial Standards of Practice. Throughout this report, we have noted a few minor items for consideration that we believe may present opportunities for improvement, but none that we believe would have a material impact on the proposed assumptions.

1. EXECUTIVE SUMMARY

The remainder of this report provides the basis for our findings and recommendations for each assumption that appears in the 2019 Investigation of Experience for Retirement Benefits Assumptions Report and our conclusions.

We would like to thank LACERA's staff for their responsiveness in providing the items and information that we requested during the course of our review. Additionally, we would also like to thank Milliman for their cooperation and assistance in providing the requested information, and answering our questions.

2. Actuarial Assumptions

Background on Actuarial Assumptions

The actuarial assumptions form the basis of any actuarial valuation or cost study. Since it is not possible to know in advance how each member's career will evolve in terms of salary growth, future service and cause of termination, the actuary must develop assumptions in an attempt to estimate future patterns. These assumptions enable the actuary to estimate the amount of benefits earned and to reasonably anticipate when and how long these benefits will be paid. Similarly, the actuary must make an assumption about future investment earnings of the trust fund. In developing the assumptions, the actuary examines the past experience, but more heavily considers future expectations to make the best estimate of the anticipated experience under the plan.

There are two general types of actuarial assumptions:

- Economic assumptions – these include the investment return assumption (expected return on plan assets), assumed rates of salary increase, price inflation, wage inflation, and increases in total covered payroll. The selection of economic assumptions should conform to ASOP No. 27 *"Selection of Economic Assumptions for Measuring Pension Obligations"*.

- Demographic assumptions – these include the assumed rates of retirement, mortality, termination, and disability. The selection of demographic assumptions should conform to ASOP No. 35 *"Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations"*.

The discussion on the actuarial assumptions on the following pages is based on the data and recommendations found in Milliman's 2019 Investigation of Experience for Retirement Benefit Assumptions report.

2. Actuarial Assumptions

Economic Assumptions

Actuarial Standards of Practice (ASOPs) are issued by the Actuarial Standards Board to provide guidance to actuaries with respect to certain aspects of performing their work. As mentioned earlier, ASOP 27 is the actuarial standard that addresses the selection of or recommendations regarding economic assumptions for measuring pension obligations (liabilities) under defined benefit plans. There are two particular items from ASOP 27 that we believe are relevant to the discussion in our report: 1) For a given assumption, there is a range of possible choices, and 2) An assumption may be made with a degree of conservatism, when appropriate and disclosed.

Milliman has proposed two alternate sets of recommended assumptions for the Board of Investments to consider. The current and recommended sets of economic assumptions are:

	Current Assumption	Milliman Recommendations Alternative 1	Milliman Recommendations Alternative 2
Price inflation	2.75%	2.75%	2.50%
Real wage growth	0.50%	0.50%	0.50%
Total wage growth	3.25%	3.25%	3.00%
Payroll Growth	3.25%	3.25%	3.00%
Price inflation	2.75%	2.75%	2.50%
Real rate of return	4.50%	4.00%	4.25%
Investment return	7.25%	6.75%	6.75%
Cost-of-Living Adjustment			
Plan A	2.75%	2.75%	2.50%
All others	2.00%	2.00%	2.00%

Each assumption is briefly discussed in the following narrative.

Price Inflation: Price inflation impacts the rates of future salary increase, the payroll growth assumption, and the investment return assumption, so the underlying price inflation component in each must be consistent in accordance with the guidance provided in ASOP 27. In addition, because the retirees receive a cost-of-living adjustment (COLA) linked to changes in the CPI-U, the inflation assumption also impacts the COLA assumption.

Inflation has varied significantly over time, with some notably high periods in the 1970's influencing the long-term average. Over more recent periods, inflation has been consistently below the long-term average, and the financial markets' pricing of inflation (comparing Treasuries and TIPS) suggests that the market expects the trend to continue for the next 30 years. However, these results may be partially driven by the actions of the Federal Reserve Bank and, therefore, may not be indicative of the long-term estimation that actuaries need for their work.

While there can be arguments made for assuming inflation will remain low for a very long period of time, we note that inflation is not random. It can be significantly affected by monetary and fiscal policy, and those policies may change dramatically and rapidly. Consequently, there are also some strong arguments for assuming that inflation could increase from the current level at some point in the future.

Milliman provides supporting documentation for their recommendation to either lower the inflation assumption from 2.75% to 2.50% or to leave it unchanged. We note that the recent trend among public retirement systems has been to lower this assumption, with most selecting an assumption in the range of 2.25% to 2.75%. LACERA bases their COLA on the Los Angeles area CPI, which has tended to be higher than the national CPI over the recent past. Wages are also likely to be affected by the local economy. This leads us to believe that either of the two options recommended by Milliman are reasonable, with the set of assumptions using a 2.75% inflation assumption providing some degree of conservatism, while the 2.50% assumption may be closer to what is expected nationally.

General Wage Growth: The general wage growth or wage inflation assumption consists of price inflation and real wage growth (also called productivity). These increases are affected by a variety of factors including price inflation, the policies and financial state of the employer, and the nature and extent of competition for employees in the relevant labor markets. Over time, however, the impact of wage increases in the broader economy will have a strong influence as workers and competing employers respond to market forces.

Milliman considers several relevant sources in their analysis of this assumption including:

(1) the National Average Wage Index (published by the Social Security Administration),
(2) the assumption used by the Social Security Administration in their 75-year projections, and
(3) actual LACERA data.

Based on these sources, Milliman recommends retaining the current 0.50% real wage growth assumption. While we do not find this assumption unreasonable, we would note that over the last 30 years – following the high inflation period of the 70's and early 80's – the real wage growth in the general economy has been higher than the 50-year average of 0.50% that Milliman cites. We also realize that the National Average Wage Index does not perfectly track wage inflation, although it is a reasonable proxy.

Public-sector employees have also lagged the increases across the broader economy in more recent years, at least when the costs of benefits are excluded. Another source to consider is the State and Local Government Workers Employment Cost Index, produced by the Bureau of Labor Statistics. It provides evidence that real "across the board" salary increases have averaged about 0.2% annually during the last 10 to 20 years. Total compensation (with benefits) have increased at a real rate of about 0.8% over that same period. Whether these trends will continue or there will be a correction is an open question.

We believe that Milliman's recommended assumption of 0.50% for real wage increase is reasonable. However, long term historical data shows that real wage increases are generally higher in periods of lower price inflation and vice versa. Therefore, it might be appropriate to use a higher real wage increase assumption if a lower price inflation assumption, such as 2.50%, is selected.

In Milliman's analysis of merit salary increases, there is a persistent merit increase of around 0.25% for service after 30 years. Typically, there is very little, if any, merit increase after 30 years. One could argue that this increase is more appropriately classified as part of the general wage increase rather than merit, although Milliman believes it truly is part of the merit salary increase. If it were considered part of the general wage increase, the real wage increase could be set at 0.75% and the merit scale reduced by 0.25%, resulting in an unchanged total salary increase assumption. In our opinion, Milliman's choice of 0.50% real wage growth is reasonable, although we would also be comfortable with an assumption of 0.75%, potentially accompanied by an offsetting reduction of 0.25% in the merit salary increase assumption.

Milliman also uses the general wage growth assumption as the basis for their recommended payroll increase assumption. The payroll growth assumption is used in the amortization of the Unfunded Actuarial Accrued Liability (UAAL) and is appropriate for developing costs that are reasonably stable as a percentage of payroll. Using the general wage inflation to estimate future payroll growth has been a common practice amongst public plan practitioners for many years, but we would point out that some retirement systems are choosing to amortizing the UAAL with an assumed payroll growth that is lower than the wage inflation assumption or even setting the assumption equal to the expected growth in the revenue of the sponsoring organization.

One consideration in setting a lower assumption has been that as older employees retire, new employees are being hired with lower salaries. In theory, there are internal promotions to fill the vacated positions, but this expected payroll growth has not always been realized, especially given the high proportion of baby boomers still in the work force. Because the youngest baby boomers are 55-years old, this potential impact may be around for a while although LACERA's experience many vary from that of other public plans. We are not opposed to Milliman's choice of using the wage inflation assumption as the payroll increase assumption, but we could also be comfortable with an assumption that was between price inflation and wage inflation.

Investment Return Assumption: In our opinion, the investment return assumption should represent the long-term compound rate of return expected on the plan assets, considering the asset allocation, the real rate of return on each asset class, and the underlying inflation rate, all net of expenses paid from the Trust.

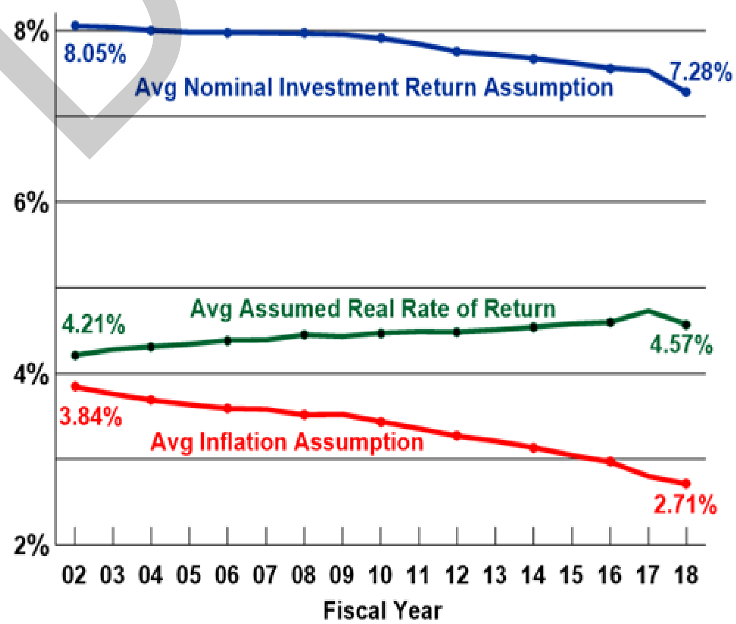
The long term relationship between price inflation and investment return has long been recognized by economists. The basic principle is that the investor demands a more or less level "real return" – the excess of actual investment return over price inflation. If inflation rates are expected to be high, investment return rates are also expected to be high, while low inflation rates will result in lower expected investment returns, at least in the long run.

2. Actuarial Assumptions

The period considered for pension funding represents a very long time horizon. In reviewing this assumption, the actuary should consider asset allocation policy, historical returns, and expectations of future returns. Frequently, asset advisors focus on no more than the next 5 to 10 years since they are most concerned with how to invest the funds currently to maximize returns. The longer term is less relevant to them, but it is, of course, paramount to actuaries who are projecting benefits to be paid for the next 50 to 100 years. This difference in perspective can significantly influence how investment advisors and actuaries derive an investment return assumption.

Our preferred approach to setting the investment return assumption is called the "building block" approach. This approach develops a "real" return, or the return net of inflation, and then adds it to the inflation assumption. One advantage of this approach is that it assures that the total or "nominal" return is consistent with the inflation assumption, since it is determined as the sum of the price inflation assumption and the real rate of return. A second advantage is that it is helpful when comparing various sources of expected returns by eliminating any differences related to price inflation expectations as a source of variation in the nominal return assumptions. While we find this approach helpful, we also acknowledge that there are other reasonable approaches that may be used and are compliant with actuarial standards of practice.

This approach of looking at the real return can also be helpful in understanding broader trends as well. For instance, the following graph from the NASRA Public Fund Survey shows that across the universe of large public retirement systems, the reduction in the investment return assumption since the turn of the century has been largely a function of declining inflation assumptions. In fact, the real return assumption has actually increased over this time period. This does not mean that the real return for a given asset class has necessarily increased, since there are likely changes in asset allocation involved as well. In our opinion, separating the real return from the nominal return can be useful in developing the investment return assumption.



In Milliman's analysis of the expected return, they considered three sets of capital market assumptions regarding future expected returns. They also considered the general trend observed with respect to the investment return assumptions used by other large public systems, but primarily relied on the expected future return arising from these capital market assumptions. We believe their approach is appropriate as the asset allocations and risk perspective of each board influences the investment return used by the system, so the median return assumption would not necessarily be an appropriate basis to use in setting LACERA's assumption. The three sources of capital market assumptions are:

(1) Meketa, LACERA's investment advisor,
(2) Milliman's internal investment experts, and
(3) the 2019 Horizon Actuarial Services survey which reviews the assumptions of over 30 investment consulting firms (including Meketa) who work with defined benefit plans, providing a median return for each common asset class.

As was noted earlier, most investment advisors focus on a shorter timeframe than actuaries because they are using the assumptions for a different purpose. For instance, the 2019 Horizon survey included 34 advisors with capital market assumptions for the next 10-year period, but only 13 advisors with assumptions for periods of 20 years or more. Milliman's discussion states they have given consideration to both the 10-year and 20-year time horizons, which we believe to be appropriate. As Milliman notes, LACERA is a mature system. One consequence is that annual benefit payments exceed annual contributions, so the difference must be made up from investment income. For LACERA, this shortfall is currently about 2% of the total trust fund, an amount that could likely be covered by income cash flows such as interest payments and stock dividends, rather than by selling assets. However, this net negative outflow means that the expected lower returns over the next ten years will diminish the corpus of the trust over this period so a comparatively lower trust fund balance will exist when the higher returns are earned. This will limit the ability of the higher returns on the LACERA trust fund in the long term to offset the impact of the lower returns in the next ten years, so we agree that it is appropriate to consider both the short and long horizons, as Milliman has done.

Milliman's analysis, using our standard building block analysis, may be summarized as follows:

	Meketa	Milliman	Horizon
Based on 10-Year Assumptions			
- Expected Total Return	6.8%	6.3%	6.6%
- Expected Inflation	2.1%	2.3%	2.2%
- **Expected Real Return**	**4.7%**	**4.0%**	**4.4%**
Based on 20-Year Assumptions			
- Expected Total Return	7.5%	6.4%	7.3%
- Expected Inflation	2.6%	2.3%	2.3%
- **Expected Real Return**	**4.9%**	**4.1%**	**5.0%**

Comparing the real rates of return illustrates the magnitude of differences in the expected return for the portfolio, absent inflation, of each source. Milliman's expected real return is considerably lower than both Meketa and the Horizon Survey in the short term and the long term. Based on conversations with Milliman, we understand that since the publication of these rates, Meketa has stated that they believe the nominal rates of return, based on current market conditions, would be around 0.50% lower. This reduction brings Meketa closer to Milliman's expected return, particularly over the next ten years. With that adjustment for Meketa, they are both noticeably lower than the Horizon average, likely because the survey data was collected based on capital market assumptions earlier in 2019 so there is a timing lag. We would point out that the range of views held by investment consultants is fairly broad, but we do not believe Milliman and Meketa are inappropriately low in their estimates. To the extent that these firms are trusted advisors of LACERA, it is reasonable for the Board to assign more credibility to their professional judgment, even if their expected returns are lower than estimates by other advisors.

Milliman does not directly develop a recommended real return, but rather recommends a nominal return of 6.75%. Because they propose two possible inflation assumptions with the same nominal return, this effectively creates two sets of economic assumptions:

1) Inflation of 2.50% and real return of 4.25%
2) Inflation of 2.75% and real return of 4.00%

We believe the same logic could lead to an alternative assumption of 2.50% inflation and 4.00% real return for a 6.50% nominal return, or yet another alternative assumption of 2.75% inflation and 4.25% real return for a 7.00% nominal return. If the Board ultimately selects the 2.50% inflation assumption, we would suggest consideration be given to using an assumption of 2.75% for purposes of developing the wage and COLA assumptions that reflects the Los Angeles area inflation.

In summary, there is a range of reasonable assumptions for the investment return assumption, and we believe the recommended assumption of 6.75% falls within that range. Other reasonable approaches could lead to different recommendations of which some might be lower than 6.75% and some might be higher. We believe it is certainly reasonable to choose a rate that is slightly lower to improve the likelihood of actual return reaching or exceeding that rate, and thereby reducing the likelihood of actuarial losses that will require additional funding.

Use of Investment Return Assumption for GASB Discount Rate: The investment return assumption used in the funding valuation is net of both investment and administrative expenses. GASB requires the use of an assumption regarding the expected return on assets that is net of investment expenses, but not administrative expenses. Administrative expenses are directly modeled in the projection of the Fiduciary Net Position for purposes of determining whether there is a depletion date of the plan assets in the future (called the crossover test). This test determines whether the assumption for the expected return on assets may be used for the GASB discount rate.

As part of the experience investigation, Milliman reviewed the actual administrative expenses for the past 10 years and estimated that these expenses have averaged about 0.13% of the asset value.

Consequently, their recommendation for GASB 67 and 68 reporting is to use an investment return assumption that is 0.13% higher than the investment return assumption used for funding purposes. This approach has been used in the past, and we believe it is reasonable and appropriate to continue its use.

COLA: Closely related to the price inflation assumption is the Cost-of-Living Adjustment (COLA) assumption. The actual COLAs granted to LACERA members are based upon the change in the CPI-U for the Los Angeles metropolitan area. By law, there are upper limits on the COLA that may be granted each year (varying by plan), but to the extent that inflation exceeds the actual COLA granted in any year, there is a "carry-over" which future COLAs may use in years when inflation is lower than the cap. If inflation is less than 0% for a year, the member benefit may be reduced, but not below the original benefit. In these situations, it is also anticipated that the carry-over would be utilized to offset the negative inflation adjustment and perhaps even provide a positive COLA as well. Based on the design of the COLA, we believe Milliman's recommendation to set the COLA assumption equal to the price inflation assumption (up to the capped level) is an appropriate model.

DEMOGRAPHIC ASSUMPTIONS

The major demographic assumptions used in the valuation process are the assumed rates of retirement, termination of employment (with or without a vested benefit), disability, and mortality (death before or after retirement). Other non-economic assumptions that are typically evaluated include salary merit increases, election of refunds in lieu of a deferred benefit, and family composition (where applicable for death and some disability benefits).

General Comments

The purpose of a study of demographic experience is to compare what actually happened to the individual members of LACERA during the study period (July 1, 2016 through June 30, 2019) with what was expected to happen based on the actuarial assumptions, using the results as an important tool to evaluate whether some adjustment to the current assumptions is necessary.

The basic steps performed by most actuaries include the following:

- First, the number of members changing membership status, called decrements, during the study is tabulated by age, duration, gender, group, and membership class as appropriate (active, retired, etc.).

- Next, the number of members expected to change status is calculated by multiplying certain membership statistics, called exposure, by the expected rates of decrement.

- Finally, the number of actual decrements is compared with the number of expected decrements. The comparison is called the actual to expected ratio (A/E Ratio), and is expressed as a percentage.

The A/E ratio is a key indicator as to the *overall fit* of actual experience to that expected based on the assumptions. While this metric is an important measurement, the fit of the assumption at each individual age or service duration is also critical because experience that is higher at certain ages/durations does not typically offset the impact of experience that is lower at other ages/durations. The fit of the actual experience to the assumption at each age or duration is important in order to more accurately value the liabilities (present value of future benefits). The A/E ratio also provides a good way to easily evaluate the impact of the recommended assumption in comparison to the current assumption to determine how much the assumption was adjusted.

For the most part, Milliman's analysis develops these A/E ratios with compensation-weighted exposures and decrements (for actives) or benefit-weighted exposures and decrements (for retirees) rather than using the counts of members. This means, for example, that the influence of the higher-paid members on retirement rates is greater than lower-paid members. Since the higher-paid (and usually longer service) group also has greater liability, this aligns the assumptions better with actual experience of the plan liabilities and should reduce the dollar amount of actuarial gains and losses from year to year. We are very supportive of this approach, as we use it in our own practice.

As part of our review of the demographic assumptions, Milliman provided us with the processed valuation data files for the 2016 through 2019 valuations. They also provided us with their detailed experience study results, including the number of exposures and observed decrements, broken down by LACERA plan, sex, and age or service as appropriate for each assumption. We used the valuation data files to replicate the exposure and decrement summary for active and retired members over the study period and matched the total number of decrements almost exactly. We also attempted to validate Milliman's results at each age or service data point. Due to rounding issues, we did not always match each cell exactly, but we were able to satisfy ourselves that Milliman's processing was performed with a sufficient degree of accuracy that the results are reliable for the assessment and development of actuarial assumptions.

In the following paragraphs, we make specific comments on the demographic assumptions.

Merit Salary Increases: In the economic assumptions section, we discussed Milliman's development of the general wage growth assumption. A second type of salary increase occurs at the individual level as a result of such things as promotion and longevity. Milliman examined these increases separately for General and Safety members, recognizing that the two groups have different patterns of salary increase through a typical member's career. They also studied the assumption as a function of years of service. We agree that these two factors are the most appropriate and commonly used approaches to model merit increases.

Total salaries are reported from year to year so, in order to isolate the merit component of the salary increases, Milliman compared the total salaries of each individual member in each consecutive year of employment, after removing the estimated general wage inflation observed in the actual LACERA data for each year. Based on our recommendation, Milliman has more fully described the details of this process in their report, including their methodology for identifying the general wage increase each year. We find this approach a reasonable way in which to isolate the salary increases due to merit and longevity.

For purposes of this analysis, Milliman used the last 15 years of actual salary increases. We note that this period is quite long and includes the recession of 2008 and subsequent recovery. From our perspective, a period that is too long may not be not sensitive to recent changes or trends. For instance, with nearly all of the active membership being employed by the County, a change in the longevity compensation structure could quickly affect the merit scale but might not be easily detected with Milliman's longer time frame. We raised this issue with Milliman, but understand they prefer the use of the long period as they believe it provides a better estimate of long-term patterns. They also indicated that they did look at the most recent three years, even though that is not discussed in the report. We would suggest that in the next investigation of experience, Milliman comment on their analysis of both the long and short time periods to communicate that recent events and trends, as well as long-term patterns, are considered.

Rates of Mortality: One of the most important demographic assumptions in the pension valuation is mortality because it projects how long benefit payments are expected to be made. The longer retirees live and receive benefits, the larger the liability of the system, thus increasing the contributions necessary to actuarially fund the system. In addition, if members live longer than anticipated by the assumption, the true cost of future benefit obligations will be understated and contributions will increase as the unfavorable experience unfolds. Because there are also death benefits payable for active members, it is also relevant to consider the patterns of death for active members, although this assumption has comparatively little impact on the valuation results due to the low probability of active member deaths.

In early 2019, the Society of Actuaries (SOA) published a new set of mortality tables (Pub-2010 Tables) that are based solely on the experience of public retirement systems rather than corporate pension plans (the source of data for past mortality tables published by the SOA). The new tables include mortality rates for active members, healthy retirees, disabled retirees, and beneficiaries of retirees, and also vary by membership type (general government, teachers, and public safety). They represent a significant improvement in the universe of mortality tables available to value public retirement systems. Although they have only recently been released, our experience indicates that these tables are, in general, a better fit to the mortality observed in public plans than prior tables that were available such as LACERA's current mortality assumption. Milliman used these new tables, with certain adjustments as appropriate, for their recommended mortality rates. We believe that Milliman's use of these tables is appropriate and reasonable.

In the past, mortality rates for those of retirement age have gradually declined each year. Because actuarial valuations are projecting many years into the future, it is reasonable to anticipate that mortality rates will continue to decline, so they will be lower in the future than they are now. In order to anticipate that improvement, Milliman uses an approach known as "generational mortality" in which the mortality rates at most ages are "improved" by a small amount each year in estimating an individual's future lifespan. The SOA publishes a projection scale each year which essentially grades recently observed mortality improvement into its long-term expected improvement over a short period of time. Milliman's assumption has been, and continues to be, a simplified version of the SOA-published mortality improvement scale that uses only the ultimate year of that projection scale. There is insufficient data from LACERA to statistically test this assumption, but we believe it is reasonable and have observed other systems using similar simplified mortality improvement assumptions.

Milliman uses separate mortality assumptions based on sex, membership type (General or Safety), and status (active, healthy retiree, and disabled retiree). For the most part, they use the corresponding table from the SOA Pub-2010 tables, scaled by a constant multiplier in some cases to achieve a better fit. For General disabled members, they blend the healthy and disabled retiree tables to achieve a table that more appropriately reflects LACERA experience. Overall, this approach to selecting mortality tables is a common actuarial practice. Further, they base their analysis on benefit-weighted amounts for retirees and compensation-weighted amounts for actives. This weighting is an appropriate way in which to reflect the observed patterns of mortality rates varying by benefits/compensation.

While we do not disagree with Milliman's recommendations, we offer some considerations for the next investigation of experience. First, the SOA Pub-2010 Tables include beneficiary mortality tables. Milliman elected to use the General membership healthy retiree table for beneficiaries. This has been standard practice in the pension actuarial community and so we have no objection, but we would suggest Milliman consider the use of the Pub-2010 Beneficiary Table next time, recognizing that data to analyze beneficiary mortality may be limited.

Second, in our experience we have found that the quality of the fit of a mortality table can sometimes be improved by applying one scaling factor at younger ages and a different factor at older ages (with a blending around the transition age). We would suggest that Milliman consider whether or not such an approach might allow a better fit of the mortality assumption to observed experience across all ages. This approach is not as widely used in the pension actuarial profession, but for larger retirement systems, such as LACERA, may have some merit.

Rates of Retirement: Retirement is a decision that is usually planned by an individual at a time that is perceived as most beneficial from a personal and financial perspective. One significant factor is the interaction of the retirement eligibility provisions with the potential retirement date. Because the different LACERA retirement plans have different eligibility requirements and benefit provisions, it is not surprising that retirement behavior varies by plan. Milliman develops retirement rates for General plans A-C, plan D, plan E, and plan G, and for Safety plans A&B and plan C. The newer plans (General G and Safety C) do not have any meaningful retirement experience yet, and so the proposed rates are based on applying professional judgment to the experience observed in the other plans.

For each plan or group of plans, Milliman observed the actual and expected retirements, weighted by compensation, as described earlier. The assumption and analysis varies by age, a typical approach. In general, we believe that the proposed changes recommended by Milliman are an appropriate response to the observed retirement patterns.

In some plans, particularly in the public safety arena, the provisions for the availability and amount of benefits lead to patterns that are more influenced by years of service than age. If Milliman has not reviewed that potential correlation recently, we would suggest they consider including this analysis in their next investigation.

Rates of Termination: The termination of employment assumption is a service-based assumption which is the most commonly used format for other public retirement systems. Milliman examined General members and Safety members separately, which is reasonable given the different jobs and termination patterns of the two groups. General plan E is valued separately from plans D and G because experience has shown a different behavior by those who elected this option.

Milliman proposes some minor adjustments to some of the termination rates to improve the quality of the fit to actual experience. Their analysis considered compensation-weighting in the development of the A/E ratios, and we concur with that, even though it did not have a material effect on the analysis.

For General plans A-C, the termination assumption has no significant effect on estimating future obligations since there are few members left who are not currently retirement eligible. However, we would suggest that Milliman consider using the termination rates from the newer plans for General plans A-C because in calculating the normal cost, the Entry Age Normal cost method requires the use of retrospective termination rates. As these plan members retire, though, this becomes a less significant consideration.

Refund of Employee Contributions: In the valuation process, this assumption is applied to active members who are assumed to terminate employment after becoming vested. It anticipates the election of a refund of accumulated employee contributions by the member and the resulting forfeiture of any vested monthly benefit at retirement eligibility. As would be expected, the probability of electing a refund declines as service increases, and so Milliman studies this assumption as a function of service, with separate rates for General and Safety membership.

We find Milliman's analysis and proposed changes reasonable. There are some retirement systems where the valuation assumes that the decision of whether or not a refund is elected is based on which option is most valuable to the member, from the system's perspective (i.e., which has the higher present value). Such an approach is designed to value the worst case scenario to the system, regardless of how experience is expected to unfold. While we are not necessarily suggesting that Milliman change to this approach, we would suggest that in a future investigation they consider whether this alternate approach might be worth considering, particularly with active members covered by different plans and benefit provisions.

Rates of Disability: Disability is a relatively low occurrence event, and so the analysis of disability rates is generally challenging. Lack of data creates results with limited credibility. Milliman has considered disability separately for males and females and for General and Safety members, which is a very common and appropriate approach. (Because General plan E has no disability provision, those members are excluded.) Disability may be either service-connected or not-service-connected, so an analysis of both rates was conducted. For Safety members, all but one of over 430 observed disabilities was service-connected, so for practical purposes, the service-connection distinction is relevant only for the General membership.

In general, we believe that Milliman's analysis and proposed adjustments to the disability rates are reasonable and appropriate. Because of the limited number of disabilities, some of the graphs exhibit patterns that are hard to interpret with the results from the A/E ratios. Milliman may want to consider ways to present these results that would help resolve this, but we also recognize that the sparse nature of actual disablements will often lead to odd graphical representations.

The 2016 Investigation of Experience was audited by Segal. One of their comments related to the manner in which Milliman collected the data for the disability study and how that approach essentially discarded one of the three years of data. Based on discussions with Milliman, they used a different approach in evaluating the disability experience in the current study, so the data used now draws from all three years. We believe this was an appropriate improvement in response to Segal's comment.

Other Assumptions: There are some miscellaneous assumptions that were addressed in the experience study report. For the most part, these assumptions do not have a major impact on the valuation results, and we believe the recommendations are all reasonable. The assumptions include:

- Probability of retiring with an eligible survivor
- Beneficiary age
- Deferred vested member retirement age
- Reciprocity employment rates for deferred vested members

ACTUARIAL COST METHOD

For all retirement plans, whether defined benefit or defined contribution, the basic retirement funding equation is:

$$C + I = B + E$$

Where:

- C = employer and member contributions
- I = investment income
- B = benefits paid
- E = expenses paid from the fund, if any.

As can be seen from the formula, for a given level of benefits and expenses the greater “I” is, the smaller “C” is. This is the underlying reason for advance funding a pension plan, and historically investment income pays for 65% to 75% of the benefit dollars received by plan members. In other words, for every dollar paid to a member only 25 to 35 cents comes from contributions. To determine what pattern of contributions is needed, plan sponsors hire actuaries to estimate the cost of their plans and to create a budget for systematic contributions to meet that cost.

Different actuarial cost methods can provide for more rapid funding, more level funding over time, or more flexibility in funding. The choice of an actuarial cost method will determine the pattern or pace of the funding and, therefore, should be linked to the long-term financing objectives of the system and benefit security considerations.

The actuarial cost method used by LACERA is the Entry Age Normal method. This cost method determines the normal cost as a level percentage of pay which, if paid from entry into the plan to the last assumed retirement age, will accumulate to an amount sufficient to pay the expected benefit payments. Entry Age Normal tends to result in stable normal cost rates, a feature that has helped make it the most commonly used cost method for public plans. An additional cost is determined by amortizing the unfunded actuarial accrued liability (discussed later in this section).

In our opinion, the actuarial cost method employed by the LACERA is appropriate and will systematically fund the prospective pension benefits on an actuarially sound basis, if all of the actuarial assumptions are realized and the actuarial required contributions are made.

ASSET VALUATION METHOD

Since the purpose of actuarial funding is to build up an asset pool (remember the importance of "I" in "C + I = B + E") actuaries need to value the current asset pool on each valuation date. The market value could be used, but it would tend to create too much volatility from valuation date to valuation date, and a single day's measurement is not necessarily indicative of the true underlying value of the investments held by the plan. Thus, most actuaries use an asset valuation method which smoothes out these fluctuations in pursuit of achieving more stable funding measures and (when relevant) developing more level contributions. A good asset valuation method places values on a plan's assets which are related to current market value, but which will also produce a smooth pattern of costs.

The goal of the actuarial asset valuation method is thus to smooth or reduce investment market fluctuations. This is particularly important during periods of volatile capital markets in which abrupt changes in asset values, when factored into the funding valuation, produce sudden unnecessary changes in contribution levels. In this case, "unnecessary" implies that the change in asset values is not necessarily a true revaluing of the assets involved, but rather a fluctuation reflecting a current economic climate or a short-term reaction to specific news.

LACERA Asset Valuation Method: The asset valuation method used by Milliman in the valuation is a variant of methods commonly used by other public sector retirement systems. The smoothing method finds the difference between the actual investment return and the expected investment return on the market value of assets. The dollar amount of this difference is then recognized equally over five years. This is the most common asset valuation method used by public systems.

Compliance with ASOP 44

Actuarial Standard of Practice Number 44, "*Selection and Use of Asset Valuation Methods for Pension Valuations*", provides guidance to the actuary when selecting an asset valuation method for purposes of a defined benefit pension plan actuarial valuation. Several of the terms in the criteria of ASOP 44 such as "reasonable" and "sufficiently narrow" are not well defined. As a result, actuaries can differ in their opinion on these matters. As we consider the current asset valuation method used by LACERA in light of ASOP 44, we believe it satisfies these requirements.

We find LACERA's asset valuation method to be reasonable and appropriate and compliant with ASOP 44.

AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY METHOD

Currently, the unfunded actuarial accrued liability is amortized using a layered base approach. Following the establishment of the initial UAAL base, each year gains or losses arising from asset and demographic experience are amortized over a new 30-year period with payments that are determined as a level percentage of payroll. Milliman proposes that future amortization bases be amortized over 20 years.

The layered amortization approach has rapidly become the most common amortization method used by public retirement systems, and we believe this method is reasonable for amortizing LACERA's UAAL**.** It is also worth noting that, as LACERA does, most public retirement systems develop UAAL payments that are intended to be level, as a percentage of payroll, in the future. This general amortization methodology is very mainstream.

However, it is worth noting that the amortization periods have generally become shorter over the last five to ten years based on guidance from organizations such as the Conference of Consulting Actuaries (CCA), Society of Actuaries (SOA), California Actuary Advisory Panel (CAAP), and the Government Finance Officers' Association (GFOA). For most systems, the amortization periods for newly established amortization bases is in the range of 20 to 25 years. Therefore, we agree with Milliman that the current 30-year amortization of new layers is longer than desirable. Their recommendation is to move to 20 years which provides a reasonable balance between stability in contributions and moving the system toward being 100% funded.

Milliman also recommends the possible consolidation and re-amortization over 22 years of the existing amortization bases with more than 22 years remaining We are comfortable with the proposed plan to eliminate the longer existing bases, but we also believe that it would be appropriate to continue to pay the bases down over their original period. The ultimate decision is dependent on which contribution pattern, and resulting funding progress, is most acceptable to the Board.

GENERAL OBSERVATIONS

Because of the diversity of public retirement systems and their actuaries, along with the scope and frequency of experience studies, the reports are also very diverse, ranging from extensive formal reports with many charts and tables to a simple slide presentation. Actuarial Standards of Practice provide only minimal guidance on the contents of these reports, so much of the report depends upon the style and preference of both the actuary and the retirement system. Milliman's report is on the more complete end of the spectrum, including some degree of numerical detail and graphical illustration along with narrative explanation.

In offering the following ideas, we are by no means suggesting that these are necessary or that the current report is inadequate. Rather, we are sharing some ideas from our years of experience that we believe might be useful to LACERA and Milliman. Ultimately, they will decide if any of these ideas are worth pursuing in future studies.

At the end of the report, Milliman includes an appendix that contains the proposed assumptions, with the assumption changes highlighted. While this approach makes it very easy to identify which rates were changed, it is not clear how they have changed. As an alternative, they could consider an additional appendix which includes the current assumptions, allowing an easy way to compare not only what rates were changed, but how they were changed.

Generally, Milliman has presented graphs with data grouped quinquennially. This has the advantage of smoothing out some of the variability that exists without the grouping, but it may also make the shape of assumption and its fit at each age/duration harder to observe, particularly for an assumption like retiree mortality which ranges from low rates to high rates. It might be worth considering whether some of the graphs would better communicate the results if they were not grouped.

Another idea for improvement would be to provide tables to show the exposure, actual decrements, expected decrements and proposed decrements, and resulting A/E ratios for each key assumption. Viewing the data graphically does not tell the reader which rates are based on more underlying data and, therefore, are more credible. In our opinion, including tables with the details of the underlying calculation of the results would improve the technical aspect of the report.

REVIEW OF PRIOR AUDIT

Segal Consulting prepared an audit report of the 2016 Milliman Investigation of Experience which included the following suggestions for future experience studies:

(1) For the investment return assumption, review the methodology regarding the treatment of investment expenses in conjunction with ASOP 27.
(2) For the real wage growth assumption, consider increases in this assumption if future recommendation are made to decrease the price inflation assumption.

(3) For the merit and promotional salary assumption, consider increasing the rates that apply for all members below 10 years of service and the ultimate rate that applies after 15 years of service for Safety member as recent experience shows that an increase may be justified.
(4) For the service retirement assumption, consider extending the analysis shown in the report to include General members retiring at ages 44 to 49 and 70 to 75. In addition, consider eliminating retirement rates below age 45 from the General Plans as they are not needed and reducing the General Plan G retirement rates below age 55 to reflect significant differences between the Plan G benefit formula as compared to Plan D.
(5) For the retirement age assumption for deferred vested members, consider using one assumed retirement age for Safety Plan A and B.
(6) For the post-retirement mortality rates, consider using the two-dimensional improvement scale in the generational projection together with using a more recent projection scale that reflects more recent mortality improvement experience.
(7) For the disability retirement rates, consider using the data from the third year of the previous investigation period along with the first two years' data from the current investigation period.
(8) For the assumption the for percentage of members assumed to work for a reciprocal employer, consider obtaining data on what percentage of terminated members went on to work for a reciprocal employer during both the investigation period and also for the entire current terminated member population. This may further validate this assumption, which is based on experience for members retiring from deferred status during the investigation period. In addition, the assumption for future salary increases for reciprocal terminated members should be discussed in the body of the report.

We reviewed Milliman's current report to ensure that all of Segal's comments in the current experience investigation were addressed. Milliman has addressed most of Segal's suggestions, as outlined below:

(1) Milliman reflected a 0.05% passive investment expense as part of the development of the investment return assumption.
(2) Milliman's recommendation for the real wage growth assumption was 0.50% for both the alternative with price inflation at 2.75% and 2.50%. There is no discussion in their report to indicate they considered Segal's suggestion to increase the real wage growth assumption if price inflation is lowered.
(3) Milliman made adjustments to the merit salary scale that are consistent with both the observed experience and Segal's recommendation.
(4) It appears Segal's recommendation for extending the retirement rates to age 75 for General members was implemented in the last study. In the current study, Milliman considers how General plan G might differ from plan D in its development of retirement rates, reflecting Segal's suggestion.
(5) In their report, Milliman explains that there are very few deferred vested Safety Plan A members so the assumption is deemed not to be material. Therefore, no change is recommended in the 2019 Study.

(6) In the current study, Milliman discusses the basis of their recommendation for continued use of the ultimate MP-2014 projection scale. Although it is not consistent with Segal's recommendation, Milliman has provided sufficient information to support their recommendation, in our opinion.
(7) Based on Milliman's explanation of the change in their approach for analyzing disability experience, we believe Segal's concerns have been addressed.
(8) It does not appear that Milliman addressed Segal's recommendations with respect to validating the assumption regarding the percentage of members assumed to work for reciprocal employers or the recommendation to discuss the assumption for future salary increases for these members in the body of the report.

SUMMARY OF CMC SUGGESTIONS FOR FUTURE INVESTIGATIONS OF EXPERIENCE

Throughout this report, we have identified several items that we believe could improve the next Investigation of Experience. We have summarized these items below for convenience:

- We suggest that Milliman consider the use of separate assumptions for Los Angeles inflation (for wage growth and COLA) and national inflation (for the investment assumption).
- For Milliman's analysis of actual wage inflation observed by LACERA, we would encourage them to consider how this analysis might be influenced by changes in workforce composition over the last 30 years.
- We recommend that Milliman and LACERA consider whether the amortization of the UAAL should be based on the wage inflation assumption, or if a lower rate might be more appropriate in case total wages grow slower than wage inflation. In fact, if County revenue growth reflects price inflation more than wage inflation, the use of a lower growth assumption for amortization could come closer to matching the amortization growth to revenue growth.
- Milliman's analysis of the total investment return assumption is a reasonable method, but we would suggest that they consider directly developing an assumption for the real rate of return to make the analysis of total return more transparent. This would also allow the inflation and real return assumptions to be decoupled.
- For the salary merit scale analysis, we suggest that Milliman comment on their analysis of periods shorter than 15 years. We do not object to also considering the longer-term analysis, but believe that solely relying on it will delay the detection of new patterns.
- We suggest that Milliman consider the use of the Society of Actuaries beneficiary tables rather than simply using the same tables as the members.
- We encourage Milliman to consider if the quality of fit of mortality tables could be improved by scaling the younger and older ages differently.
- We encourage Milliman to see if there are any discernible service-related patterns in regards to retirement rates that would provide an improved modeling of future experience.

- We suggest using the termination rates for General plans A-C that include rates from current plans D and G members at lower service levels to better accommodate the Entry Age Normal cost method. We also note that the declining number of members in plans A-C will make this increasing less important.
- We recommend that Milliman consider whether the refund of member contributions assumption should be replaced by assuming members choose the most valuable option.
- We suggest that Milliman consider presenting both current and proposed rates in the appendices so that a reader can more easily see the magnitude of recommended changes.
- Where appropriate, we believe it could be useful if some of Milliman's graphs displayed age-by-age information rather than grouping the results quinquennially.
- When there are graphical results presented in the report, we think that there are opportunities for Milliman to enhance the report by including tables with supporting data that would assist more technical readers.

ATTACHMENT III

County of Los Angeles Letter
dated December 19, 2019

County of Los Angeles
CHIEF EXECUTIVE OFFICE

Kenneth Hahn Hall of Administration
500 West Temple Street, Room 713, Los Angeles, California 90012
(213) 974-1101
http://ceo.lacounty.gov

SACHI A. HAMAI
Chief Executive Officer

December 19, 2019

Mr. Santos H. Kreimann
Chief Executive Officer
Los Angeles County Employees Retirement Association
300 N. Lake Avenue
Pasadena, CA 91101-4199

Dear Mr. Kreimann:

**LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION (LACERA)
2019 INVESTIGATION OF EXPERIENCE
FOR RETIREMENT BENEFIT ASSUMPTIONS**

It is our understanding that as a result of the 2019 Investigation of Experience for Retirement Benefit Assumptions that your consulting actuary, Milliman, will be making several important recommended changes in actuarial assumptions. The principle recommended changes are related to economic assumptions, which are expected to have a significant impact to employer and employee contributions.

As the plan sponsor, the purpose of this letter is to communicate the County's position on the recommended changes, which were made in consultation with Cheiron, the County's consulting actuary. We understand that they are within the acceptable actuarial standards and are also in line with the reasonable recommendations made by Milliman.

Economic Assumptions

We appreciate the variety of alternative implementation options provided by Milliman for the Board of Investments' (BOI) review and consideration. Based upon the options available to choose from, the County preference would be Alternative 1b or 2a. Alternative 1b provides the least impact to the employee contribution rate and we are cognizant of the impact to our employees with this option. Alternative 2a, which lowers the assumed investment rate of return to 6.75 percent, better positions the plan for the uncertainties related to the capital market outlook. When economic assumptions are not achieved, this results in an increase to the unfunded accrued actuarial liability.

Economic Assumption	Current	Recommended	
		Alt 1b	Alt 2a
Investment Return	7.25%	7.00%	6.75%
Price Inflation	2.75%	2.75%	2.50%
Wages & Payroll Growth	3.25%	3.25%	3.00%
Amortization Period	30 Years	22 Years	25 Years

Smoothing of Cost Increases

The changes in assumption discussed above would have a material impact on the plan sponsor's future contributions. As outlined in the Milliman's December 11, 2019 presentation, the table below illustrates the financial impact the proposed changes would have on the County's retirement contribution.

($ in Millions)	Current	Proposed Alternatives	
Investment Assumption	7.25%	7.00%	6.75%
Employer Contribution	$ 1,864	$ 1,972	$ 1,969
Contribution Increase		$ 108	$ 105
Percentage Increase		22.50%	22.50%
Amortization Period	30 Years	22 Years	25 years

The County's primary source of revenue to offset this cost increase is property taxes, which, as you know, is constrained by Proposition 13. This limited source of new revenues also competes with other unavoidable cost increases, such as negotiated employee
cost-of-living adjustments, health insurance cost increases, and our multi-year plan to pre-fund Other Post Employee Benefits. In addition to these unavoidable cost increases, the County continues to face service delivery demands upon our budget, which include funding for the homelessness initiatives, public safety initiatives, along with diversion and reentry services. Last year alone, budget requests on the County General Fund exceeded revenue sources by $1.9 billion.

We are in support of Milliman's recommendation that the contribution rate increase be phased in over a period no less than three years. This would allow the County to more effectively manage the impact to our budget. Without smoothing the rates, many County programs that are vital to residents with the greatest need would be at risk for budget cuts.

Thank you for this opportunity to provide input for the BOI's consideration and be assured we will be supportive of the Board's decision. I plan to testify at the January 8, 2020, BOI's meeting on this important topic. Like the BOI, we are committed to a strong pension system based upon realistic and achievable assumptions that ensures the promised benefits to employees.

We thank you for the assistance you and your staff have provided to the Chief Executive Office staff. LACERA and the County have a unique partnership, and we value our positive working relationship. Should you have any questions regarding this matter, please contact me or Maryanne Keehn of my office at (213) 974-0470.

Sincerely,

Sachi A. Hamai

SACHI A. HAMAI
Chief Executive Officer

SAH:FAD:MM:MTK
SRM:LR:mst

c: Each Supervisor
County Counsel
Auditor-Controller
Treasurer and Tax Collector
Coalition of County Unions
Service Employees International Union Local 721

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ATTACHMENT IV

Milliman’s Presentation Slides
dated January 8, 2020

2019 Investigation of Experience
Economic & Demographic Assumptions

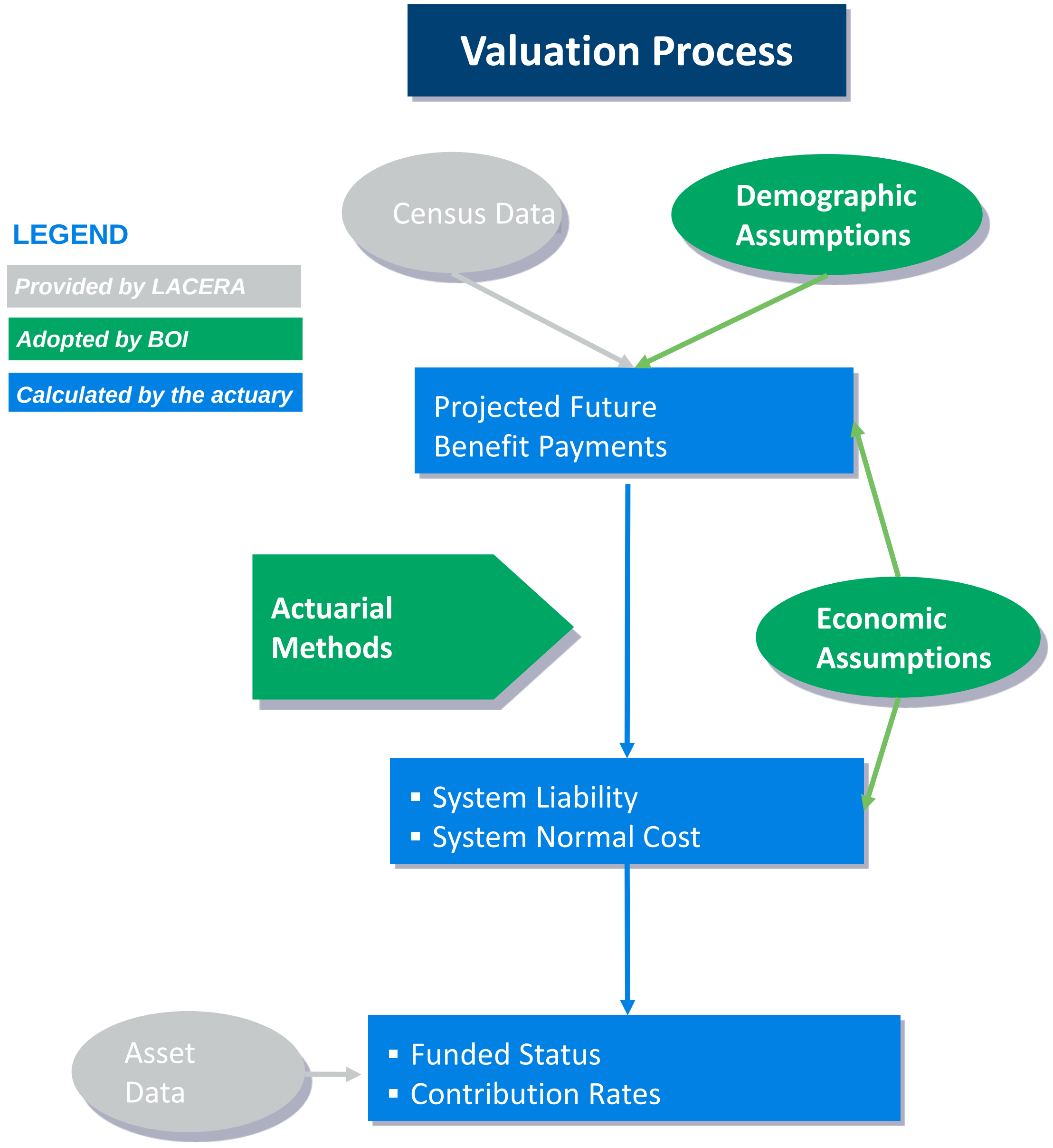
Mark Olleman
Craig Glyde

JANUARY 8, 2020

Milliman

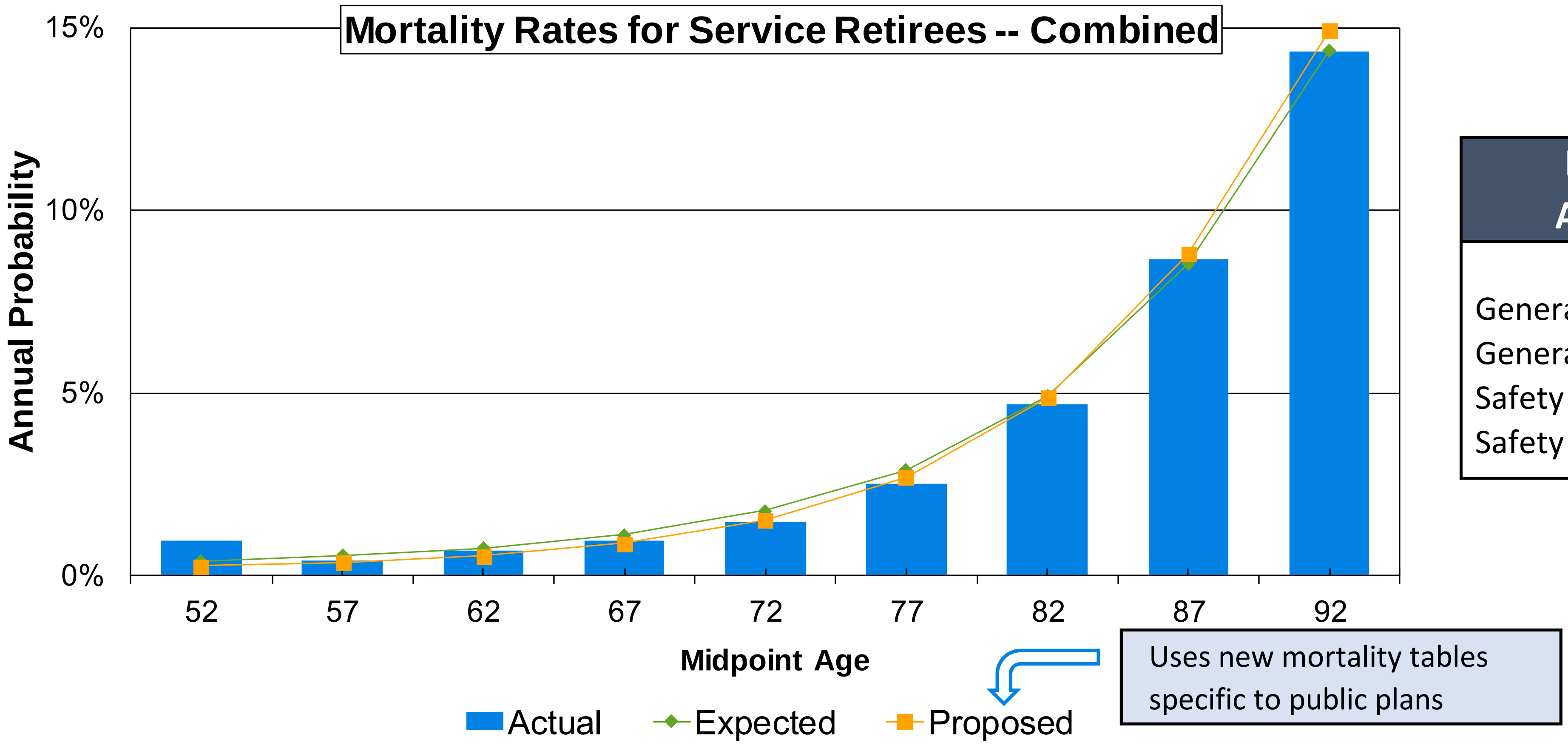
Schedule

- October 2019 meeting:
  - Background on economic assumptions
- November & December 2019 meetings:
  - Follow-up discussion on economic assumptions
- January 2020 meeting
  - Present results of demographic assumption study
  - Adopt assumptions to be used in 2019 valuation
- March 2020 meeting
  - Valuation results
  - Adopt member and employer contribution rates for fiscal year beginning July 1, 2020



Retiree Mortality

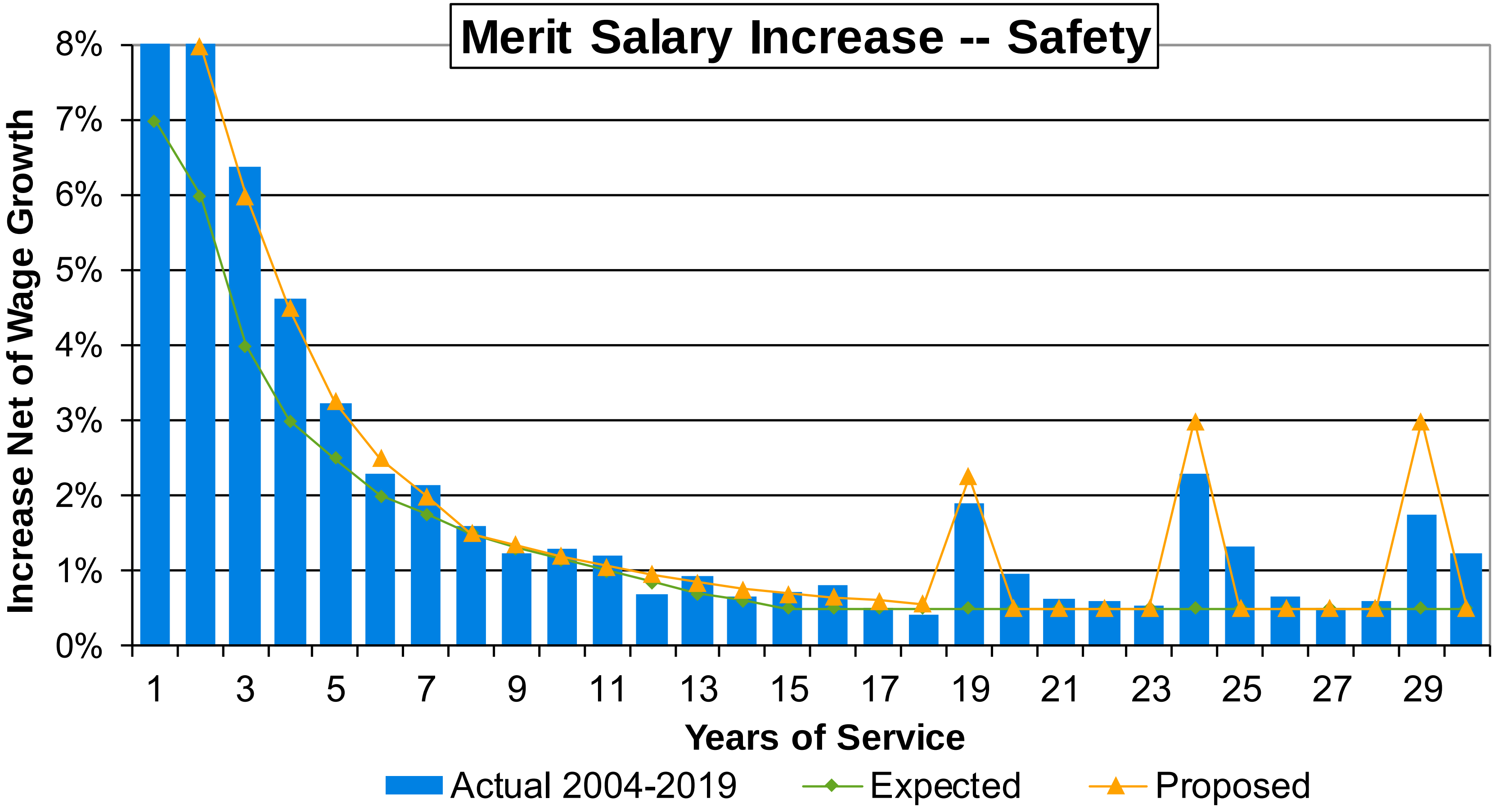
- Used to estimate how long current and future retirees will receive benefits



Expected Lifetime for Age 60 Retiree in 2020		
	Curr.	Prop.
General Male	85.7	86.5
General Female	88.5	88.4
Safety Male	86.6	87.6
Safety Female	88.5	88.2

Merit Salary Increases

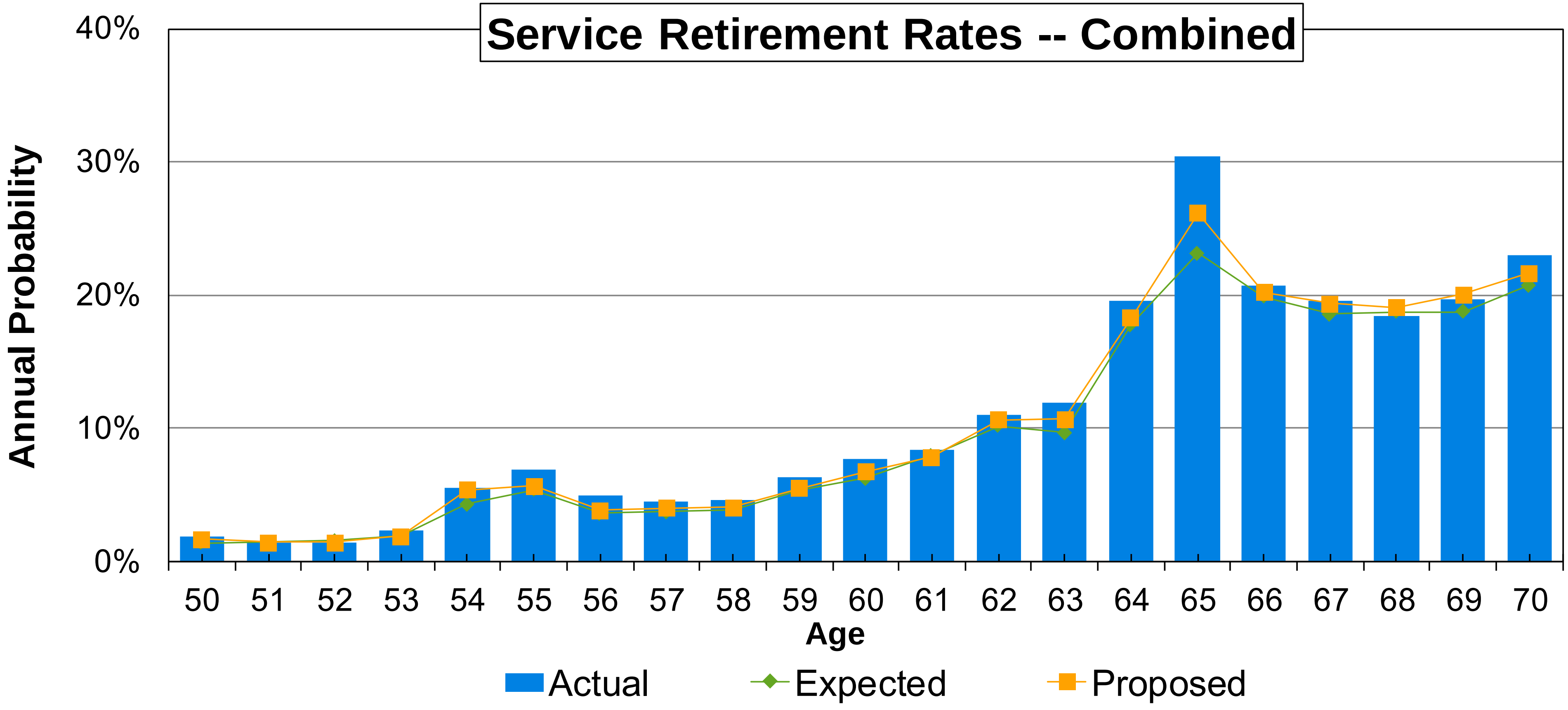
- Proposed increases to merit salary assumption, primarily for Safety members



Milliman

Retirement Rates from Active Status

- Proposed increases to service retirement rates, primarily for ages 62-70



Milliman

Other Recommendations: Demographic Assumptions and Methods

- Termination: small increases in rates at lower levels of service
- Probability of refund: small reductions
- Death while active: move to public plan specific table
- Assumed retirement age for deferred members: increase for General Plan D
- Actuarial methods
  - Amortization period for future UAAL changes = 20 years (was 30 years)
  - Asset smoothing = 5-year period (no change)
  - Actuarial cost method = entry age normal cost method (no change)

Economic Assumptions

- Price inflation (2.75% or 2.50%)
  - Projections are for lower price inflation, although recent local inflation has been higher
- Wage growth assumption (price inflation plus 0.50%)
  - Consistent with historical experience for both LA County and the U.S.
- Investment return assumption (6.75%)
  - Reflects current economic environment
  - 6.50% or 7.00% would also be reasonable

Investment Return Assumption	Wage Growth Assumption: 3.25%	Wage Growth Assumption: 3.00%
7.00%	Acceptable Alternative #1	Not Recommended
6.75%	Recommended Alternative #3	Recommended Alternative #2

1. *Milliman recommends against any set of assumptions with a 30-year amortization period, but do not believe by itself this would violate the Actuarial Standards of Practice.*

Decisions to be Made

- Adopt recommended demographic assumptions
- Change to 20-year amortization period for future UAAL changes
- Decide whether employer contribution rate increases are to be phased in over three years
- Economic assumptions & amortization of current UAAL layers:

Alternative #1: Investment = 7.00% / Wage = 3.25% / Price = 2.75%	
Alternative #1a No change to current UAAL layers	**Alternative #1b** Combine and reamortize existing UAAL layers with 22-year period (if currently longer than 22 years)
Alternative #2: Investment = 6.75% / Wage = 3.00% / Price = 2.50%	
Alternative #2a Combine and reamortize all UAAL layers as of June 30, 2019 with a 25-year period	**Alternative #2b** Combine and reamortize existing UAAL layers with 22-year period (if currently longer than 22 years)
Alternative #3: Investment = 6.75% / Wage = 3.25% / Price = 2.75%	
Alternative #3a Combine and reamortize all UAAL layers as of June 30, 2019 with a 25-year period	**Alternative #3b** Combine and reamortize existing UAAL layers with 22-year period (if currently longer than 22 years)

Alternatives with Recommended Economic Assumptions

Financial Impact – Estimated Contribution Rates

		Current		Alternative 1a			Alternative 1b			Alternative 2a		
	Year	Total		Total	Increase		Total	Increase		Total	Increase	
Assump / Current Layers	2019 & Later	7.25% / 3.25%		7.00% / 3.25%			7.00% / 3.25%			6.75% / 3.00%		
	2020 & Later	No Change		No Change			Maximum 22 Years			25 Years		
Projected Employer Contrib. %	FYB 2019	20.9%		20.9%	0.0%		20.9%	0.0%		20.9%	0.0%	
	FYB 2020	21.3%		22.5%	1.2%		22.5%	1.2%		22.5%	1.2%	
	FYB 2021	21.3%		23.7%	2.4%		23.8%	2.5%		23.7%	2.4%	
	FYB 2022	20.8%		24.5%	3.7%		24.6%	3.8%		24.5%	3.7%	
Projected Employer Contrib. in $Millions	FYB 2019	$ 1,771		$ 1,771	$ -		$ 1,771	$ -		$ 1,771	$ -	
	FYB 2020	1,864		1,969	105		1,972	108		1,969	105	
	FYB 2021	1,925		2,141	216		2,147	222		2,141	216	
	FYB 2022	1,940		2,286	346		2,295	355		2,286	346	
Est. Funded Ratio	June 30, 2019	80.7%		77.8%	-2.9%		77.8%	-2.9%		76.4%	-4.3%	
			$ Total			$ Inc.			$ Inc.			$ Inc.
Average Member Rate (Monthly)	General D	7.4%	$ 548	8.1%	0.7%	$ 52	8.1%	0.7%	$ 52	8.2%	0.8%	$ 59
	General G	8.4%	441	9.2%	0.8%	42	9.2%	0.8%	42	9.5%	1.1%	58
	Safety B	10.1%	1,051	11.5%	1.4%	146	11.5%	1.4%	146	11.9%	1.8%	187
	Safety C	13.7%	986	14.9%	1.2%	86	14.9%	1.2%	86	15.3%	1.6%	115

1) All alternatives include 3-year phase-in of employer increases due to assumptions and estimate of demographic changes.

2) Estimates only. Final results will be determined upon completion of the June 30, 2019 actuarial valuation.

Financial Impact – Estimated Contribution Rates (cont'd)

		Current		Alternative 2b			Alternative 3a			Alternative 3b		
	Year	Total		Total	Increase		Total	Increase		Total	Increase	
Assump / Current Layers	2019 & Later	7.25% / 3.25%		6.75% / 3.00%			6.75% / 3.25%			6.75% / 3.25%		
	2020 & Later	No Change		Maximum 22 Years			25 Years			Maximum 22 Years		
Projected Employer Contrib. %	FYB 2019	20.9%		20.9%	0.0%		20.9%	0.0%		20.9%	0.0%	
	FYB 2020	21.3%		22.9%	1.6%		22.8%	1.5%		23.3%	2.0%	
	FYB 2021	21.3%		24.7%	3.4%		24.4%	3.1%		25.5%	4.2%	
	FYB 2022	20.8%		26.1%	5.3%		25.5%	4.7%		27.3%	6.5%	
Projected Employer Contrib. in $Millions	FYB 2019	$ 1,771		$ 1,771	$ -		$ 1,771	$ -		$ 1,771	$ -	
	FYB 2020	1,864		2,004	140		1,998	134		2,039	175	
	FYB 2021	1,925		2,232	307		2,202	277		2,304	379	
	FYB 2022	1,940		2,435	495		2,379	439		2,547	607	
Est. Funded Ratio	June 30, 2019	80.7%		76.4%	-4.3%		75.5%	-5.2%		75.5%	-5.2%	
			$ Total			$ Inc.			$ Inc.			$ Inc.
Average Member Rate (Monthly)	General D	7.4%	$ 548	8.2%	0.8%	$ 59	8.4%	1.0%	$ 74	8.4%	1.0%	$ 74
	General G	8.4%	441	9.5%	1.1%	58	9.7%	1.3%	68	9.7%	1.3%	68
	Safety B	10.1%	1,051	11.9%	1.8%	187	12.3%	2.2%	229	12.3%	2.2%	229
	Safety C	13.7%	986	15.3%	1.6%	115	15.5%	1.8%	129	15.5%	1.8%	129

1) All alternatives include 3-year phase-in of employer increases due to assumptions and estimate of demographic changes.

2) Estimates only. Final results will be determined upon completion of the June 30, 2019 actuarial valuation.

Milliman

Questions

Caveats and Disclaimers

This presentation is based on the data, methods, assumptions and plan provisions described in our actuarial valuation report dated November 29, 2018 (except where noted). The statements of reliance and limitations on the use of this material is reflected in the actuarial report and still apply to this presentation.

These statements include reliance on data provided, on actuarial certification, and the purpose of the report.

Milliman's work product was prepared exclusively for LACERA for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning LACERA's operations, and uses LACERA's data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

Supplemental Exhibits

Financial Impact – Demographic Assumptions

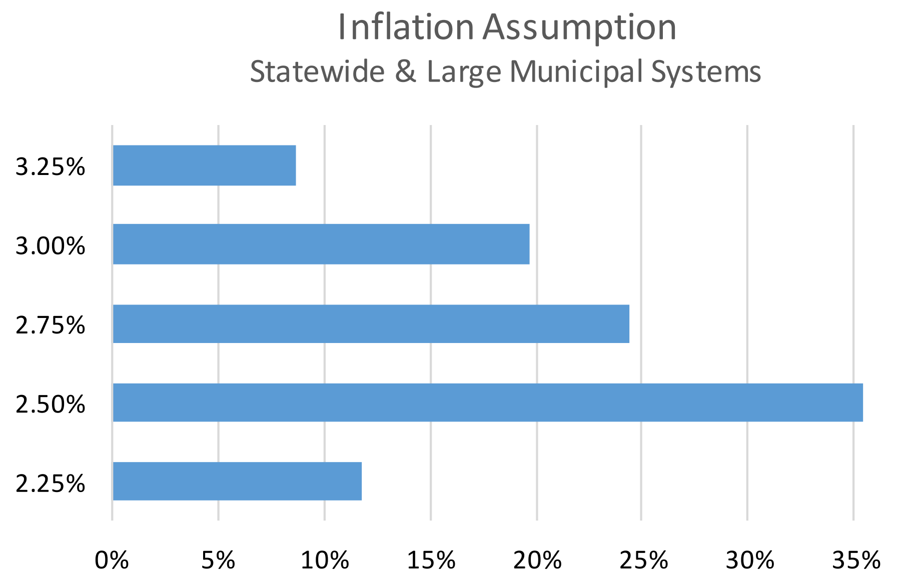
- Proposed changes in merit salary and service retirement assumptions have the largest impact

	Funded Ratio	Employer Contribution Increase	
		% of Payroll	$ millions
Recommended Demographic Assumptions			
Merit Salary	-0.2%	0.4%	$ 35
Post-Retirement Mortality	0.1%	0.0%	-
Rates of Retirement	-0.2%	0.3%	26
All Other Changes	-0.1%	0.1%	9
Subtotal Demographic Change	-0.4%	0.8%	$ 70

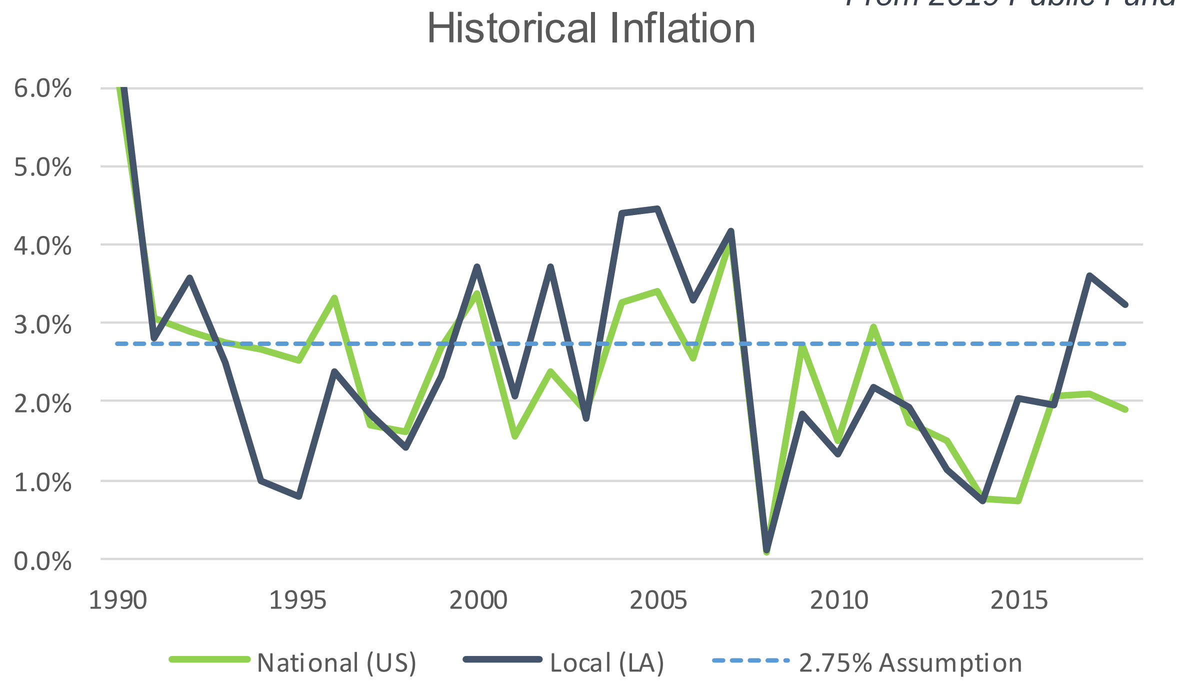
Milliman

Price Inflation

- Current inflation assumption is 2.75%
  - CalPERS and CalSTRS also at 2.75%
  - 2.75% is median assumption for large systems
- Long-range Social Security projection is 2.6%
- Other forecasts are lower
  - Implied inflation from TIPS
  - Most investment consultants
- Current assumption is reasonable
  - Milliman would also view 2.50% as reasonable

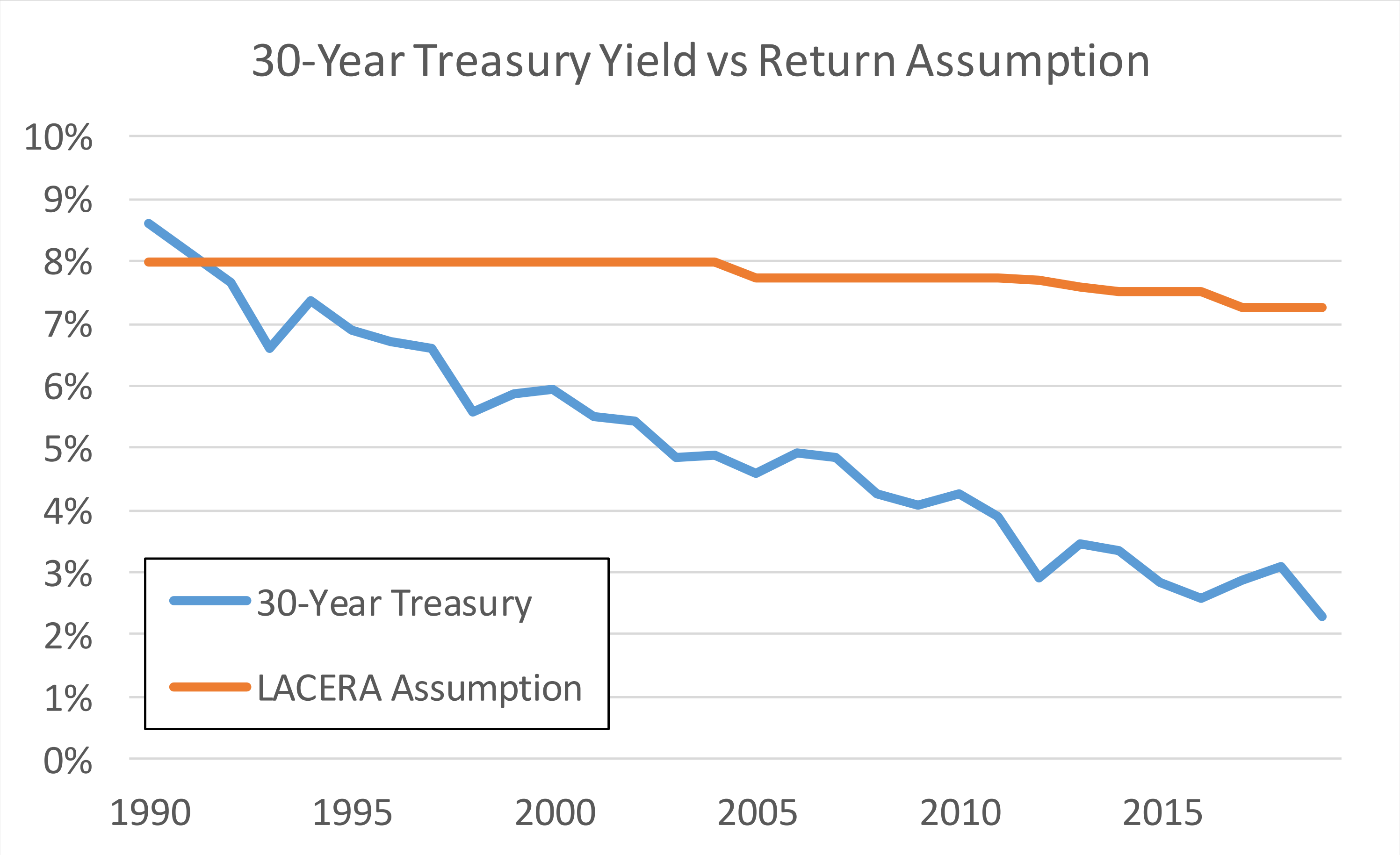


From 2019 Public Fund Survey



Change in Investment Environment

- Significant increase in investment risk needed to achieve return assumption



Expected Return

- Milliman calculated the median expected return for LACERA's target portfolio using the January, 2019 capital market outlook assumptions from three sources
  - Meketa
  - Milliman
  - 2019 Horizon survey of capital market assumptions (survey of 34 advisors)
- Estimates do not reflect any possible "alpha" due to selected managers potentially outperforming market benchmarks over the long term
- Milliman believes future expectations of returns have decreased materially since January, 2019

	Meketa	Milliman	Horizon
Based on 10-Year Assumptions			
Median Annualized Return	**6.8%**	**6.3%**	**6.6%**
Assumed Inflation	2.1%	2.3%	2.2%
Based on 20-Year Assumptions			
Median Annualized Return	**7.5%**	**6.4%**	**7.3%**
Assumed Inflation	2.6%	2.3%	2.3%

Notes:

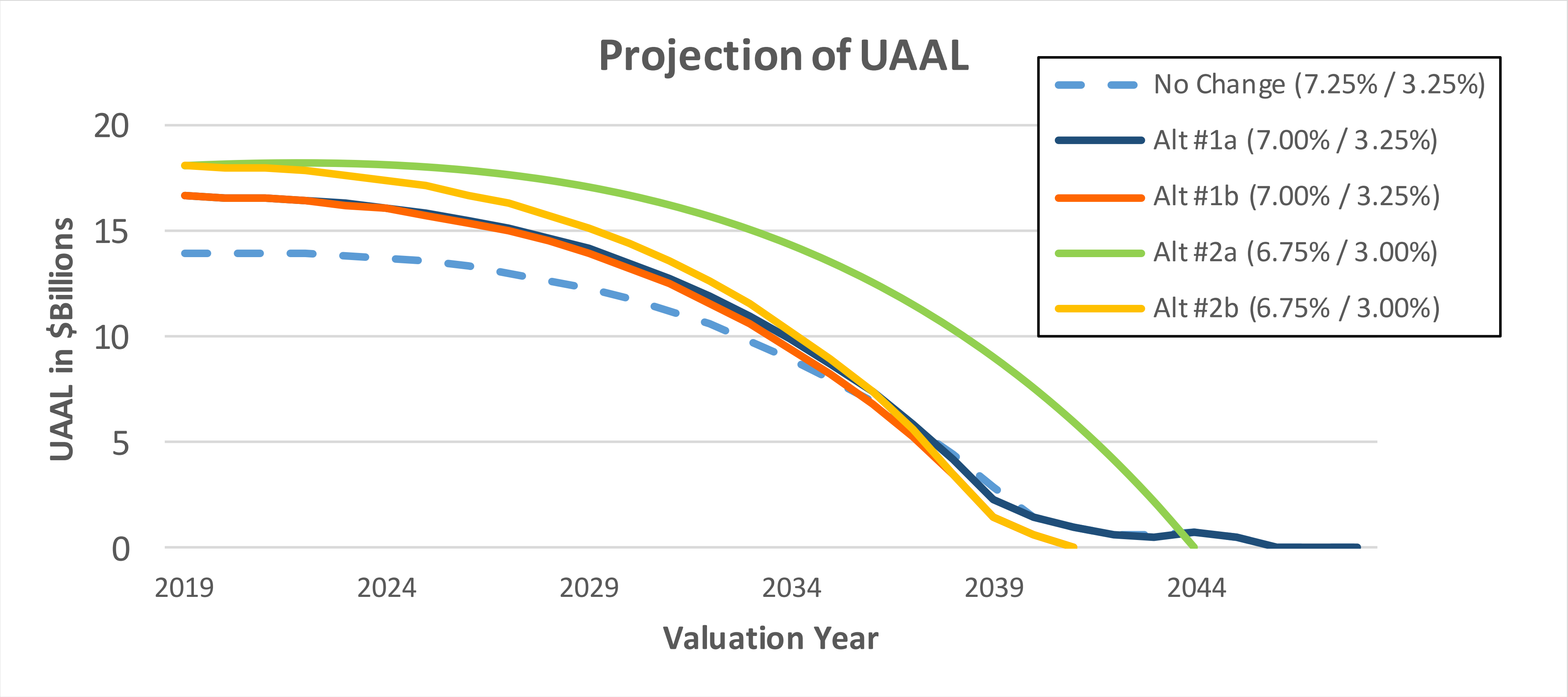
1. *Returns are net of assumed expenses of 0.18% of assets.*
2. *The Horizon Survey reports a limited number of asset classes. In cases where there was not a corresponding asset class in the survey, Meketa's assumptions for the corresponding time horizon were used.*
3. *Horizon 10-year assumptions include some consultants with less than 10 years. Horizon 20-year assumptions include some consultants with more than 20 years and are based on a subgroup of less than half of the full group.*

Financial Impact – Transition to 20-Year Amortization

- All future changes in the UAAL will be amortized over 20 years.
- Options for existing layers
  - Alternative #1a: No change to existing layers. UAAL is projected to have positive amortization and begin to start declining with 2021 valuation. Some existing layers will be greater than 20 years for next decade.
  - Alternative #1b: Combine all existing layers greater than 22 years and re-amortize over 22 years in the 2019 valuation. The increase in the employer contribution rate is estimated to be about 0.1% of pay. Under this approach, LACERA would be fully transitioned to 20-year amortization with the 2021 valuation.
  - Alternative #2a: Combine and amortize all existing layers over 25 years (including those created in the 2019 valuation).
    - This weakens the funding of the existing UAAL by reducing the contribution rate for existing layers. However, Milliman would view this as acceptable if the change was combined with a reduction in the investment return assumption to 6.75%. Overall, Milliman would view this as strengthening funding, and it would result in each component of the assumptions and methods being acceptable.
  - Alternative #2b: Same as Alternative #1b except using Alternative #2a investment return (6.75%) and wage growth (3.00%) assumptions. The increase in the employer contribution rate is estimated to be about 1.6% of pay over Alternative #2a.

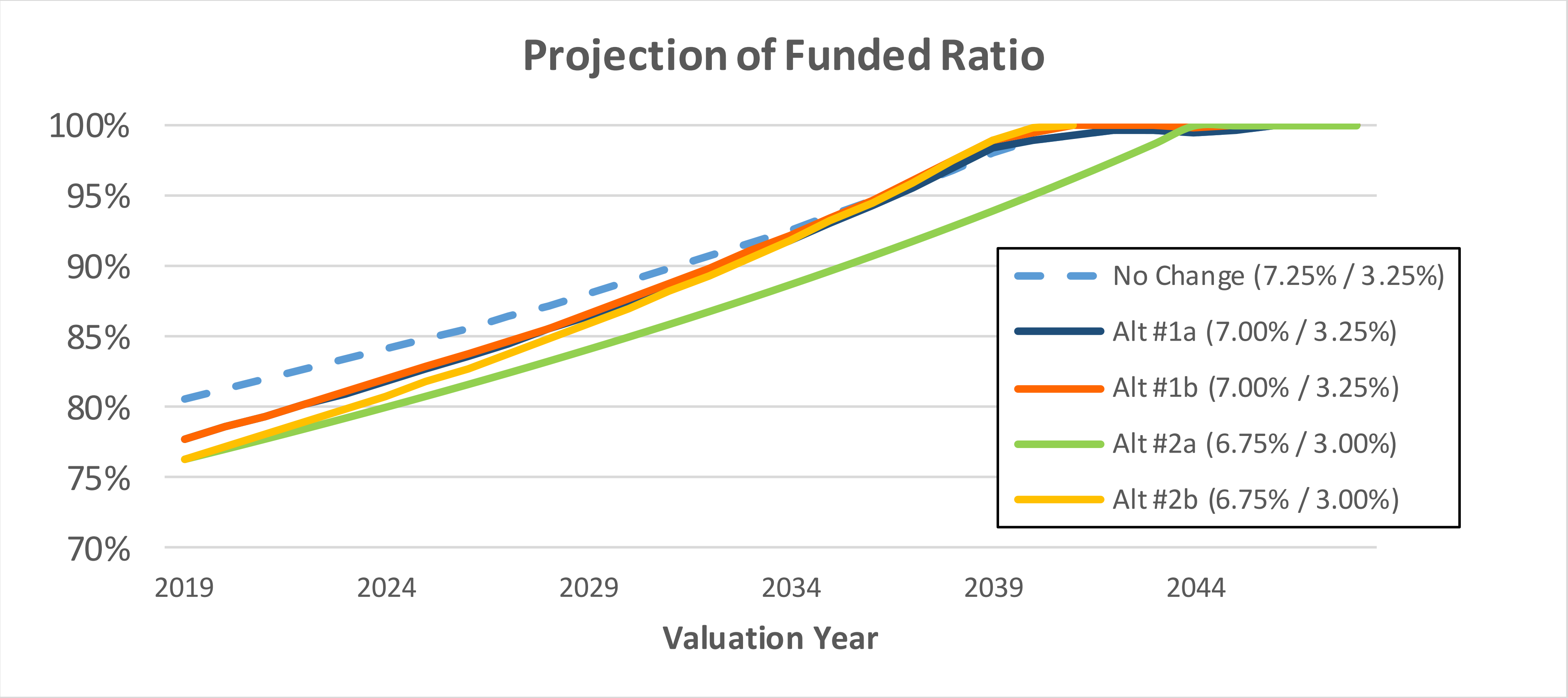
Comparison of Projected UAAL Payoff

- Alternative #1b has the earliest projected payoff of the UAAL
  - But less likely than Alternative #2a to meet projected schedule due to higher target for assumed return



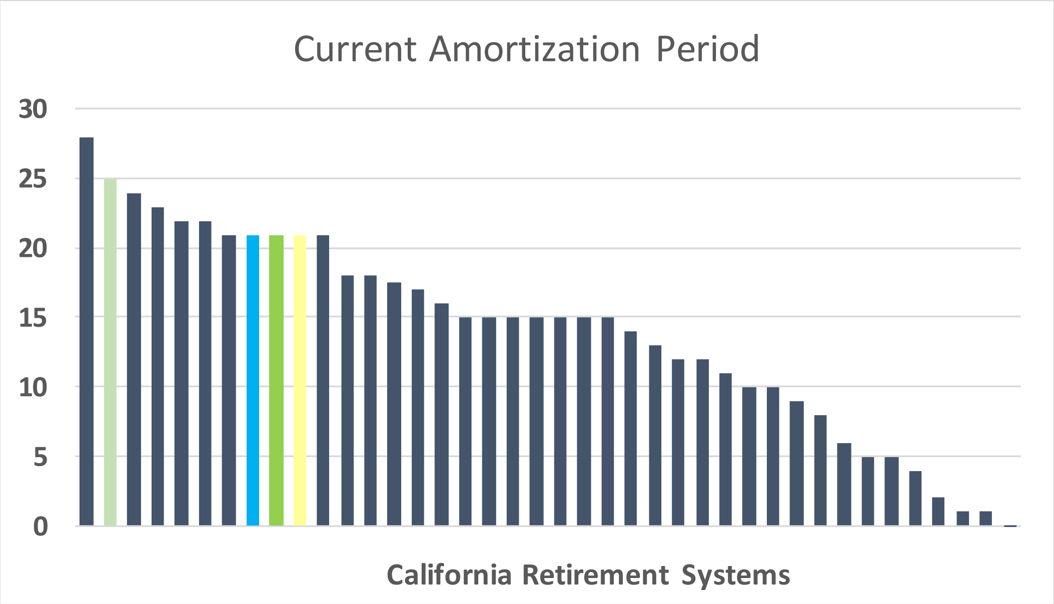
Projected Funded Ratio

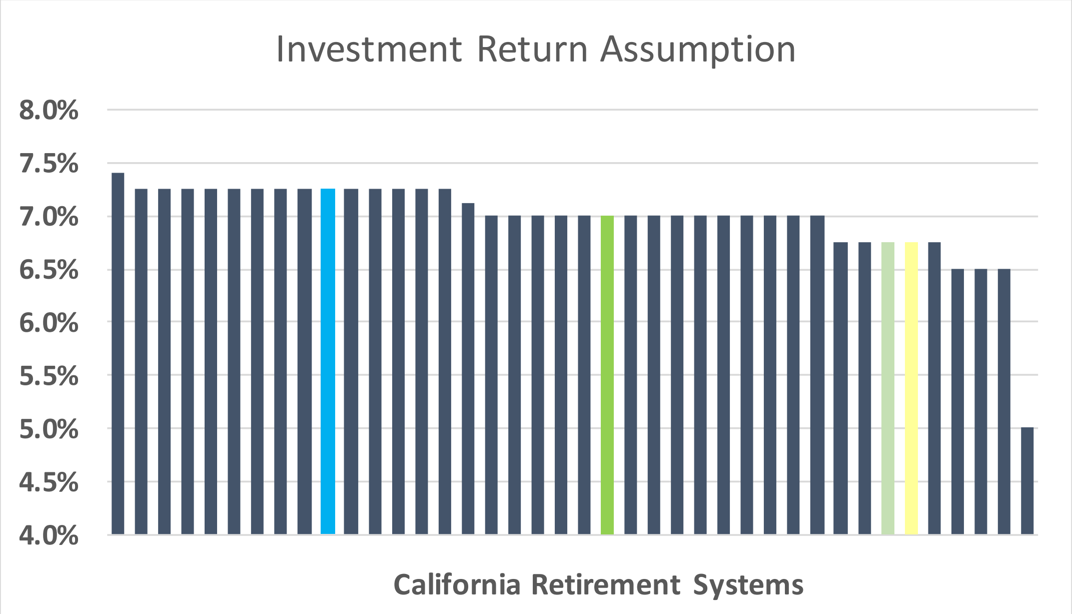
- Alternative #1b has the earliest projected payoff of the UAAL
  - But less likely than Alternative #2a to meet projected schedule due to higher target for assumed return

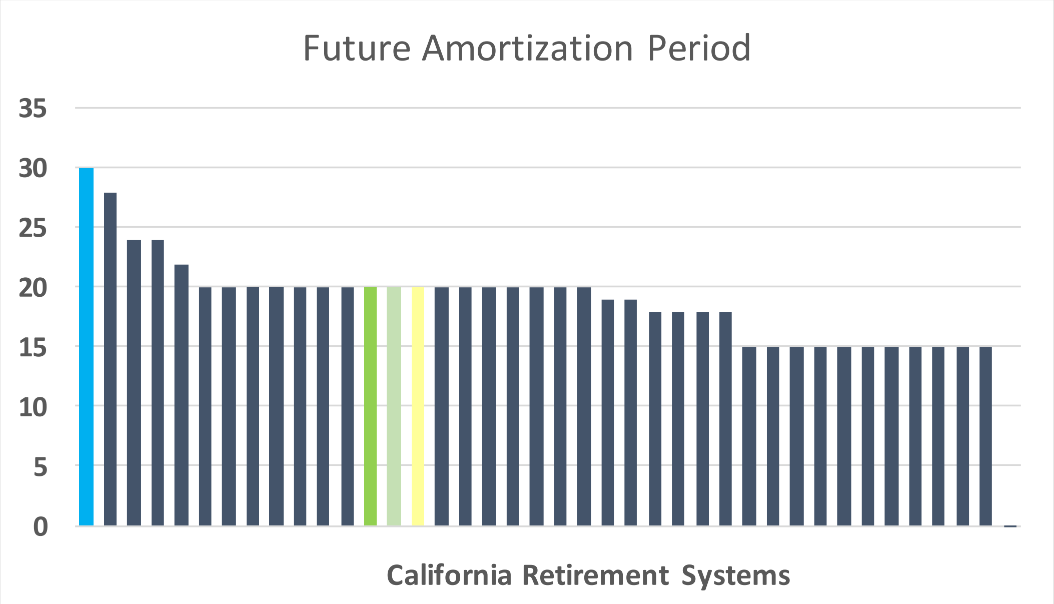


California Funding Survey

- LACERA currently is ranked 37th out of 37 California retirement systems in survey published by Roeder Financial Services
  - Blue = Current assumptions
  - Bright Green = Alt #1a & #1b (7.00% / 3.25%)
  - Pale Green = Alt #2a (6.75% / 3.00% / 25-yr Reset)
  - Pale Yellow = Alt #2b (6.75% / 3.00%)







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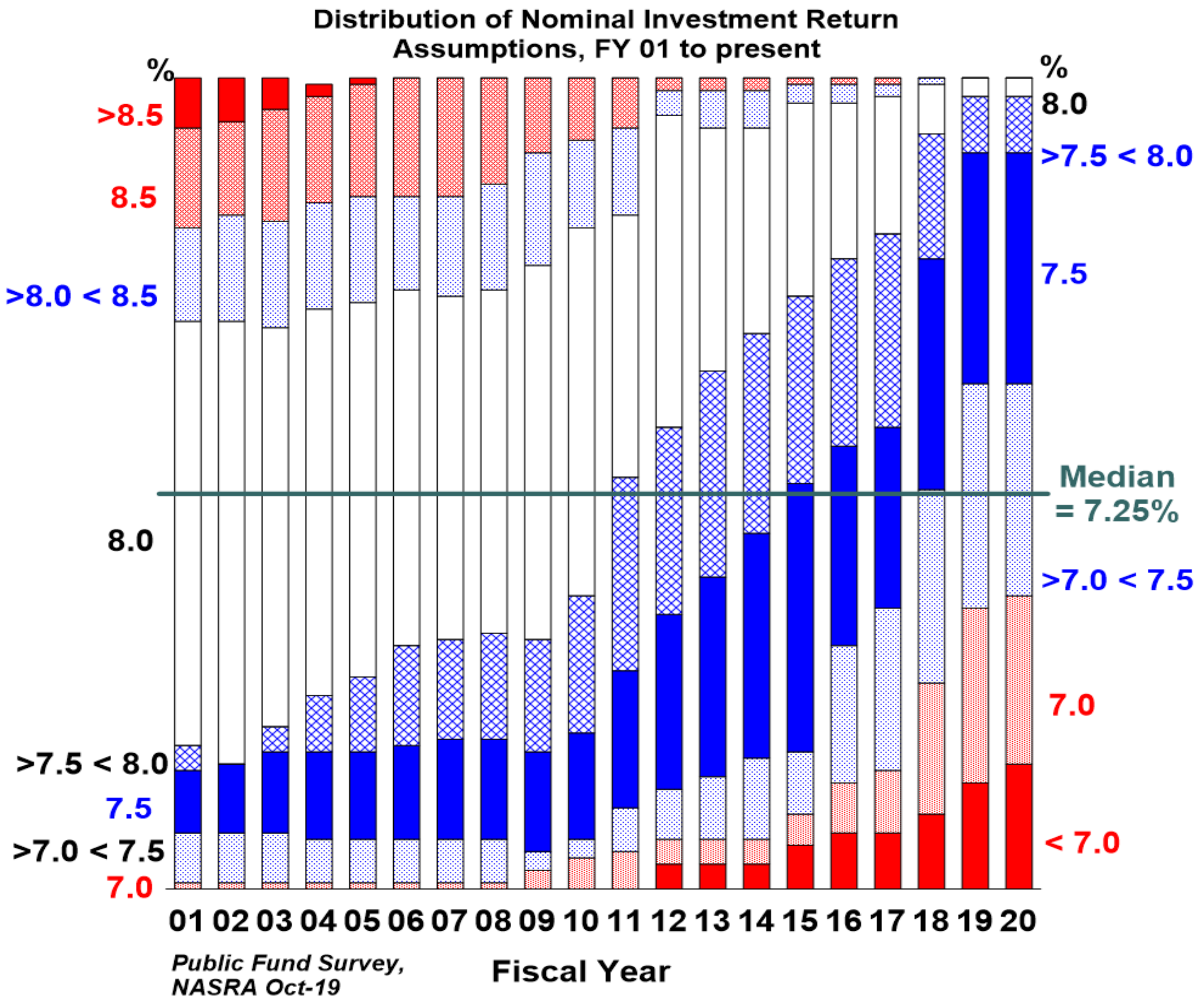
Return Assumptions for Other Systems – National



Summary

- Comparison of alternatives requested for further study

	Alternative #1a	Alternative #1b	Alternative #2a	Alternative #2b
Assumptions and Amortization of Current Layers	7.00% / 3.25% No changes to current layers	7.00% / 3.25% Current layers with periods longer than 22 years are combined and amortized over 22 years	6.75% / 3.00% All current layers, including those created in the 2019 valuation, are combined and amortized over 25 years	6.75% / 3.00% Current layers with periods longer than 22 years are combined and amortized over 22 years
Payoff of UAAL	Longest period. Negative amortization ends in 2021.	Shortest period. Negative amortization ends in 2021.	Payoff quicker than Alternative #1a, but negative amortization occurs for the first five years.	Shortest period. Negative amortization ends in 2021.
Ability to achieve return assumption	Lower probability than Alternative #2	Lower probability than Alternative #2	Highest probability of the alternatives (same as Alt #2b)	Highest probability of the alternatives (same as Alt #2a)
Employer contribution rate	Estimated 3.8% of pay increase over prior year with out phase-in. With 3-year phase-in, FYB 2020 rate is 1.6% increase over FYB 2019.	Approximately 0.1% higher than Alternative #1a. Only 1/3rd of that in first year with phase-in.	Approximately the same as Alternative #1a.	Approximately 1.6% higher than Alternative #1a. Only 1/3rd of that in first year with phase-in.
Member contribution rates	Material increases, but less than Alternative #2	Same as Alternative #1a	Greatest increase in the member rates of the alternatives (same as Alt #2b)	Greatest increase in the member rates of the alternatives (same as Alt #2a)

Notes: 1) All alternatives assumed to have 20-year amortization of future layers and reflect demographic changes
2) All options include STAR reserve but not associated liabilities (no change from current method)

L//.CERA

FOR INFORMATION ONLY

December 23, 2019

TO: Trustees,
Board of Investments

FROM: Steven P. Rice SPR
Chief Counsel

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: Phase-In of Employee Contribution Rates

At the December 11, 2019 Board of Investments (Board) meeting, the question was asked as to whether it is possible to phase in employee contribution rate adjustments made as a result of assumption changes approved by the Board. This memo will confirm, as was stated at the meeting, that it is not possible under the County Employees Retirement Law of 1937 (CERL) and the Public Employees' Pension Reform Act of 2013 (PEPRA) to phase in employee contribution rate changes.

CERL provides required normal rates of contribution for each legacy, non-PEPRA LACERA contributory plan member, as follows:

General A	Gov't Code Section 31621.3	1/240th of FAC at age 55
General B	Gov't Code Section 31621.1	1/120th of FAC at age 55
General C	Gov't Code Section 31621	1/120th of FAC at age 60
General D	Gov't Code Section 31621	1/120th of FAC at age 60
Safety A	Gov't Code Section 31639.5	1/200th of FAC at age 50
Safety B	Gov't Code Section 31639.25	1/100th of FAC at age 50

Such member's normal contributions are calculated using the Entry Age Normal Funding Method based on the age nearest each member's birthday at the time of entrance into the system (Gov't Code Section 31620) and include the actuarial assumptions for the expected rate of return, individual salary increase rate, and mortality for members on service retirement. Employee contributions must be deducted from warrants for each pay period. Gov't Code Sections 31625 (monthly), 31625.1 (semimonthly).

Cost of living adjustments for CERL members are required to be shared equally by the employer and employee. Gov't Code Section 31873. These adjustments are calculated based on all actuarial assumptions used in the valuation of liabilities.

For general and safety PEPRA members, the employee contribution is required to be one-half of the total normal cost, and the employer may not pay any portion of the required employee contribution. Gov't Code Section 7522.30(a).

LACERA's actuary calculates employee contribution rates in accordance with the legal requirements described above. There is no provision in the law that authorizes the phase-in of the required employee contribution rates established by CERL and PEPRA. CERL only permits the amortization of the "the portion of the liability not provided by the normal contribution rate." Cal. Gov't Code Section 31453.5.

c: Santos H. Kreimann
JJ Popowich
Jonathan Grabel
Ted Granger

December 30, 2019

TO: Trustees – Board of Investments

FROM: Jude Pérez, Principal Investment Officer JP
Esmeralda del Bosque, Senior Investment Officer EdB
Scott Zdrazil, Senior Investment Officer SZ
Dale Johnson, Investment Officer DJ
John Kim, Senior Investment Analyst JK

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **TOTAL FUND RISK SYSTEM SEARCH RECOMMENDATIONS**

RECOMMENDATIONS

1. Approve appointing:
   a. MSCI Analytics to provide total Fund risk services; and
   b. MSCI ESG Research LLC and Sustainalytics US Inc. for ESG data and analytics, as well as Trucost-S&P Global for climate-related data

EXECUTIVE SUMMARY

In December 2018, following the Board of Investments ("BOI" or "Trustees") approval, LACERA initiated a search to identify a total Fund risk system. The Evaluation Team has concluded its due diligence on all proposals that were submitted and recommends that the Trustees approve hiring MSCI Analytics ("MSCI") as a total Fund risk system provider. The Evaluation Team also recommends subscribing for environmental, social, and governance ("ESG") data and analytics via MSCI ESG Research LLC ("MSCI ESG"), Sustainalytics US Inc. ("Sustainalytics"), and Trucost-S&P Global ("Trucost") for climate-related data feeds. This memo provides information about the search process that staff completed. LACERA's General Consultant, Meketa, has drafted a memorandum to support these recommendations, and it is attached to this report (**ATTACHMENT D**). A PowerPoint deck will be displayed during staff's presentation to guide the Trustees through the evaluation process and search results (**ATTACHMENT E**).

BACKGROUND

The purpose of the search was to identify qualified multi-asset class investment risk systems as a means to identify, assess, monitor, and report portfolio risk, including accessing ESG data and analytics, for LACERA's total Fund and OPEB Master Trust. The platform would have to cover all major asset classes within the total Fund, aggregate risk for each portfolio and the total Fund, and enable the investment division to generate risk reports and analysis for the benefit of the Trustees and staff. Also, the platform should have the capabilities to support risk budgeting and have an order management system, if, at a later date, the Trustees wish to adopt a risk budget framework and/or manage liquid assets internally.

Another goal of the search was to address the Trustees' direction that staff provide enhanced reporting such as attribution versus benchmarks, fee attribution, fee monitoring for each asset class, and an on-going assessment of fees paid to investment managers compared to that manager's return and risk metrics. This memo contains recommendations to satisfy the majority of these reporting requests.

Staff recognizes that the ever-increasing complexity of the investment market, broader adoption of hard-to-price alternative assets, the need for increased transparency and integration of emerging ESG data and analytics into a total Fund view necessitates a robust risk solution. As mentioned in staff's December 2018 memo to the BOI, LACERA has been using State Street's risk software system ("TruView") for the total Fund since 2016. TruView has served as a good first step into risk analysis and reporting. However, this search has identified firms that provide more comprehensive risk applications to match the increasing complexity of LACERA's asset base.

The RFP was issued in January 2019. Questions from prospective respondents were answered and posted on LACERA's website in February, and final proposals were due to LACERA on March 1, 2019.

The **scope of work** included the following services:

1. **Integration of manager holdings and benchmark information across all asset classes** including: equities, fixed income, hedge funds, private equity, real assets, and real estate. The ideal solution would have the ability to integrate position details across all managers, holding all asset classes within a business day
2. **Source and aggregate data from various vendors** including custodian, investment managers, fund of funds and various service providers
3. **Value at Risk (VaR):** the ability to measure VaR at the manager, sub-asset class, asset class, and total Fund level
4. **Stress Testing**: the ability to measure potential losses given certain historical or prospective events
5. **Scenario analysis**: the ability to measure potential losses or gains given specific scenarios
6. **Portfolio reporting**: risk and exposure with the capabilities of performance reporting
7. **Reporting**: asset level detail reports, individual manager level reporting, portfolio-level reporting, total Fund level reporting, and the ability to report by user-defined groupings
8. Ability to create and run reports necessary to perform **ad hoc analysis**.

A total of seven responses were received, including six total Fund risk platforms (of which one has internal ESG research capacity and others provide options to access various third-party ESG data sub-vendors) and one specialized ESG data and analytics service provider.

Investment staff comprised of the portfolio analytics ("PA") team and members from each asset class made up the evaluation team ("Evaluation Team" or "Team"):

PA (total Fund): Esmeralda del Bosque, Dale Johnson, John Kim
Equities: Jeff Jia, Mel Tsao
Fixed Income/Credit: Adam Cheng
Hedge Funds: Quoc Nguyen
Private Equity: Calvin Chang
Real Estate: Kevin Bassi

For the ESG-related services, LACERA's corporate governance team, Scott Zdrazil and Dale Johnson, comprised the ESG evaluation team ("ESG Team").

Evaluation Summary

ATTACHMENT A provides detail on the search process, including a timeline, reviews of each step in the process, a description of the scoring methodology, phase two ranks, and final scores. Final scores and fee information for the total Fund risk semi-finalists as well as a narrative summary of the search process follows.

Table 1
Semi-Finalist Scores and Fees*

	BlackRock	FactSet	MSCI	Sustainalytics
	TOTAL FUND RISK SYSTEM			ESG DATA & ANALYTICS
FINAL SCORE	**84**	**82**	**96**	**89**
PROPOSED FEES	**$675,000-865,000**	**$780,000-910,000**	**$478,000-730,000**	**
NET FEE ADJUSTED FOR CANCELLATION OF DUPLICATIVE SERVICES***	**$275,000-465,000**	**$380,000-510,000**	**$78,000-330,000**	**

** Fee ranges shown for confidentiality and include ESG data sub-vendor costs for MSCI ESG, Sustainalytics, and Trucost. Annual fees are estimated and do not include additional licensing fees and data source costs that may be incurred.*
*** Aggregated into proposed fees for each risk platform column for consistent comparability.*
**** Anticipated cost less than the amount allocated in the FY20 budget.*

The written RFP responses were independently evaluated and ranked by each Team member and then consolidated into one score for each asset class. After the initial ranking, the Team narrowed the firms down to three respondents: BlackRock Solutions ("BlackRock"), FactSet Research Systems Inc. ("FactSet"), and MSCI. MSCI's ESG offering and Sustainalytics moved on as data and analytics providers, while FactSet's sub-vendor, Trucost, was identified as a climate-related data feed that also progressed to the next stage. The firms were invited to LACERA's offices to share more information about their proposal and provide a demonstration of their system.

Following these on-site presentations, the four firms were asked to provide a working version of their software to test all features of their platform. LACERA provided each firm a sub-set of holdings representing each of LACERA's asset classes as the test case. The semi-finalists then used those holdings to construct a total Fund structure to mimic that of LACERA's. Importantly, PA provided the Evaluation Team various tasks to complete in each risk environment as a means to judge the ease, functionality, output, and robustness of each platform. Examples of the tasks were running portfolio and composite exposure reports, risk attribution, stress tests, scenario analysis, and portfolio simulation.

The ESG Team evaluated offerings for three primary services: ESG data and ratings to assess external manager and portfolio exposures, business involvement screens to adhere to LACERA's Iran and Sudan policies and conduct ad hoc assessment as needed, and carbon/climate tools to further integrate climate risk into portfolio analytics. The team evaluated ESG services on the breadth of security coverage, depth and granularity of data, research methodologies and sources, and usability of their services, including the extent to which data may be integrated with the total Fund risk system semi-finalists. In addition, each ESG vendor has its own proprietary platform/application independent of the risk platform providers, providing deeper data granularity and analytical tools. These data and user interfaces were also evaluated for ease of use, depth and granularity of data, and functionality.

The testing period was vital to the process, allowing the Evaluation Team to assess each platform using LACERA sample data, and work on 'real world' tasks that staff would need to perform. Fundamentally, the exercise provided insights into each risk model, as the Team was able to gain substantially more detailed evaluation points and test those functions most needed out of a total Fund risk platform for LACERA.

ATTACHMENT B provides a detailed analysis highlighting the strengths and concerns for each system by evaluation category.

Another critical aspect that the Evaluation Team reviewed during the trial was the robustness of each firm's client service offering. While working on the assignments during the testing period, members of the Evaluation Team reached out to the proposed client service team as well as the risk system hotline for help on navigating the system and accomplishing specific tasks. This approach was essential to the process as the Evaluation Team was able to get firsthand experience on the responsiveness and expertise of each firm's client service approach.

During the four months of testing each environment, the Team had check-in meetings to discuss the pros and cons of each platform. Before the end of the testing period, staff conducted reference check calls. The information gathered during the calls was very useful to the Team. Not only did it confirm some of the Team's observations, but it also allowed for a candid assessment of the implementation, ongoing education, and client service support level for each firm.

The Evaluation Team scored the three total Fund risk system semi-finalists and reached a consensus on a single firm to move on as the finalist: MSCI. The ESG Team concluded that LACERA's objectives would best be met by combining the strengths of specific ESG products among the three providers, recommending: MSCI ESG, Sustainalytics and Trucost data, which can be availed via an existing investment software service at LACERA.

The selection of a robust total Fund risk provider that integrates ESG data and analytics is an important step in monitoring total Fund exposures and risks as well as develop LACERA's investment risk management framework. Based on the evaluation of RFP responses, interviews, platform trial period, and reference calls, the Evaluation Team recommends that MSCI, augmented by MSCI ESG, Sustainalytics, and Trucost would provide LACERA with a best-in-class total Fund risk solution, and at a much favorable price point than the other semi-finalists. **ATTACHMENT C** provides company profiles, including the biographies of LACERA's proposed client service team.

If the Trustees approve these recommendations, staff will begin contracting and onboarding both platforms. After contracting is complete, the total time MSCI has projected for the onboarding of LACERA's total Fund onto their platform is six to seven months, while MSCI ESG, Sustainalytics, and Trucost could be complete within a few months. In the interim, staff will continue to use its current provider, TruView, until MSCI can produce monthly risk reports that satisfy LACERA's reporting needs.

Discussion on Fees

It should be noted that the cost to adopt the proposed total Fund risk solution is higher than what LACERA currently pays. However, the additional value the solution will provide helps justify the incremental cost. Staff presented a review of analytic services within the Investment Division at the March 2018 portfolio risk committee meeting. As part of this search, the Evaluation Team conducted an overlap analysis of those services that could be eliminated due to the proposed risk systems ability to accomplish those same services. Approximately $400,000 in cost savings can be achieved through the elimination of duplicative analytic subscriptions and the cancellation of TruView. The final fee for the risk solution, net of the cost savings will be in the range of $78,000 to $330,000. Furthermore, additional costs to upgrade to the proposed solution have already been conservatively reflected in the current Board approved budget. As mentioned above, additional details on the total cost of the recommendation can be found on Table 4 of the Evaluation Process and Criteria section attached to this memo.

CONCLUSION

In December 2018, the Board approved a search for a total Fund risk system. Based on an evaluation of RFP responses, in-house interviews, and testing period of risk platforms, the Evaluation Team recommends hiring MSCI for total Fund risk, and also recommends MSCI ESG and Sustainalytics ESG data and analytics package, as well as Trucost's climate-related data feed.

Attachments

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JP:EDB:SZ:DJ:JK

ATTACHMENT A

EVALUATION PROCESS AND CRITERIA

The total Fund risk system search included four phases, designed to evaluate responding firms relative to criteria based on the specific needs of LACERA. The process began with LACERA receiving written proposals from seven firms that responded to LACERA's search request issued in January 2019. The Evaluation Team then narrowed the number of firms that advanced through the process via the phases discussed in greater detail below. Table 1 below outlines the search process and timeline.

Table 1
Search Process & Timeline

Actions		# of Firms by Phase	Timing & Status
PHASE I			
RFP Construction	− Receive Board of Investments approval on MQs and Scope of Work	n/a	Q4 2018 *complete*
	− Draft and issue RFP document		Q1 2019 *complete*
PHASE II			
RFP Review	− Review written responses − Initial rankings submitted by Evaluation Team	7*	Q2 2019 *complete*
PHASE III			
Semi-Finalist Interviews	− Introductory interviews and system demonstrations at LACERA office − Team tests a working version of each system − Team conducts simulation assignments and drills during test period − Follow up in-person interviews at LACERA office − Conduct reference checks − Select candidates to advance as finalist firms	4	Q3 2019 *complete*
Finalist Due Diligence	− On-site visit and final evaluation of MSCI − Best and final offer submitted	2**	Q4 2019 *complete*
PHASE IV			
BOI Recommendation	**− Recommend total Fund risk services and ESG data and analytics providers**	**2****	**Jan 2020 BOI *in process***

** Staff received seven written responses for consideration (6 total Fund risk systems, 1 standalone ESG data and analytics provider).*
*** Staff's recommendation includes Trucost for climate-related data.*

I. RFP Construction

The RFP was based on the Board-approved minimum qualifications and scope of work. Once approved, staff designed the RFP questionnaire, identified the Evaluation Team, and established the following evaluation criteria: (1) Organization; (2) Professional Staff; (3) Risk System Features & Capabilities; (4) ESG Tools & Services; and (5) Fees.

II. RFP Review

Issued in January 2019, the RFP consisted of 143 questions, LACERA's Diversity Questionnaire, and a request for 19 exhibits. Exhibits included sample risk reports, pricing sources by asset class, and other pertinent firm documents. These questions and exhibits enabled LACERA to gather information deemed most relevant for determining the most qualified firms. Questions were grouped into five areas of evaluation, each assigned the scoring weights shown in parentheses.

(1) Organization (20%)

This category assessed structure, size, and ownership of the organization, as well as a review of any regulatory audits, past or pending litigation, and operations model. The firm's product lines and client base were also vetted.

(2) Professional Staff (25%)

Factors evaluated in this section included the size and experience of the proposed client service team, as well as their professional certifications, years at the firm, and types of risk-related experience. The questions also addressed the stability and succession plan for staff on the risk product offered. Lastly, the quality and responsiveness of each firm's client service model were reviewed.

(3) Risk System Features & Capabilities (30%)

Overall, this section contributed most significantly to each respondent's broad evaluation score to reflect that which is inherently a knowledge and service-oriented offering.

In this section, firms were evaluated on the firm's history, philosophy, and approach to risk measurement. Respondents were asked about system maintenance, data validation, implementation, product training and client education methods, and product limitations.

Given the priority LACERA places on both transparency and customization in its analytics and reporting, a significant effort was dedicated to understanding each firm's risk models and outputs for LACERA's asset classes and total Fund. The Evaluation Team reviewed each system's scenario analysis, stress testing, attribution, risk decomposition, trend analysis, optimization, and VAR capabilities, as well as each firm's effectiveness in reporting risk. An emphasis was placed on customization of analysis and reports, as well as the depth of each respondent's research platform.

Finally, each firm's ability to articulate its "edge" in providing total Fund risk services, including their approach to implementation, on-going data validation, and client education was assessed.

(4) ESG Tools & Services (15%)

Factors evaluated in this section included research capacity, data and analysis tools, scope of securities, third party service providers, materiality and reliability for ESG-related data and ratings available on the risk platform. The ability for LACERA to identify, assess, monitor, and screen ESG factors from a security, investment manager, portfolio, and total fund-basis was reviewed.

(5) Fees (10%)

This section was ranked on an absolute basis, with the respondent proposing the lowest fee earning the highest score, and the respondent with the highest fee earning the lowest score.

RFP Ranking and Scoring

LACERA received seven responses to the RFP, all of which met the minimum qualifications. Of the seven responses, six covered total Fund risk as well as sub-vendors for ESG data; one response was dedicated to ESG data and analytics. Table 2 below presents the full list of respondents.

Table 2
List of RFP Respondents

Firm Name
1. BlackRock Solutions
2. BNY Mellon
3. FactSet Research Systems Inc. (including sub-vendor Trucost)
4. MSCI Analytics/MSCI ESG Research LLC
5. State Street Bank and Trust Company
6. Sustainalytics US Inc.
7. Wilshire Analytics

The Evaluation Team consisted of investment staff representing each of LACERA's asset classes, and portfolio analytics. Each member of the Team independently reviewed and ranked the RFP responses in consideration of the five evaluation criteria. The Team identified three total Fund risk, one standalone ESG data and analytics firm, and one climate-related data feed provider to move on to the next phase as semi-finalists. A summary of the strengths and concerns of each semi-finalist follows this section of staff's report (**Attachment B**). The firms' rankings are found in Table 3 below.

Table 3
Phase II Rankings*

Firm	Rank (average)	Observations
TOTAL FUND RISK SYSTEM		
BlackRock	**2**	**Advanced**
MSCI	**2**	**Advanced**
FactSet	**3**	**Advanced**
Bank of New York Mellon	—	Fully outsourced risk solution, product team formed within past 5 years
State Street	—	Heavy use of proxies, imprecise analytical output, analyst/client service turnover
Wilshire Associates	—	Lack of audit review process, product team too small, client support hours limited

Firm	Rank (average)	Observations
ESG DATA & ANALYTICS		
MSCI ESG	**1**	**Advanced** For Company Research & Ratings; Business Involvement Screening & Climate Data
Sustainalytics	**2**	**Advanced** For Research/Business Involvement Data & Research Only
Trucost	**2**	**Advanced** For Climate Data Only

**Candidates below the dotted line did not advance to the next phase.*

III. Interviews at LACERA's Office

Upon identification of the semi-finalists, the Evaluation Team moved directly into the interview phase of the search.

In keeping with LACERA's standard approach, the interviews were structured in two rounds: the first round was held at LACERA, and the last round took place at the candidates' offices. For this search, a unique aspect of the first round was that it included a hands-on evaluation period of each platform, including on-going training sessions by each of the semi-finalist firms.

Interviews: First Round/Semi-Finalists

In the first round of interviews, all semi-finalists were invited to LACERA's offices to share more information about their organizations and provide an in-depth demonstration of their respective risk systems. The Evaluation Team also had the opportunity to clarify any outstanding questions from the RFP responses as well as to gain a better understanding of each firm's respective capabilities and competitive advantages.

Interviews: Second Round/Testing Semi-Finalists Platforms

Following the initial interviews, the Evaluation Team asked the semi-finalists for a working version of their system as a means to test all features and components of their platform. LACERA provided each firm a sub-set of holdings representing each of LACERA's asset classes as the test case. BlackRock, FactSet, and MSCI used those holdings to construct a mock composite and total Fund structure to mimic that of LACERA's. Additionally, the portfolio analytics team designed tasks to complete on each system. This step was key in assuring that all members of the Team were testing the same modules, processes, and reports for each system, allowing true 'like-for-like' assessments of the efficacy and ease of using each platform. Examples of the tasks the Team completed included exposure reporting, performance and risk attribution, stress tests, scenario analysis, and portfolio simulation exercises. The combination of using LACERA data with 'real world' tasks provided invaluable insights into each of the semi-finalists strengths and weaknesses.

To take the exercise one step further, the Evaluation Team used the testing period to evaluate, in real-time, the quality of each firm's client service. Beyond the robustness of the risk system, the second highest weighted evaluation criteria was professional staff. The higher weighting was to reflect the importance of each firm's client service model to the overall risk system offering. Throughout the testing period, the team purposefully reached out to each firm's client service team to test their depth of expertise and responsiveness to inquiries and custom requests. An overall assessment of the ease in using client support services, dedication to educating the Evaluation Team on complex tasks, as well as the turnaround time on special requests was a key input to each firm's score.

Over the four months that the Evaluation Team tested each risk environment, there were many ad-hoc meetings and four formal check-in meetings to discuss the pros and cons of each platform. At each formal meeting, the Team reviewed the tasks assigned for that month and discussed the strengths and limitations of each risk system in completing those tasks.

Last, prior to the end of the testing period, the Evaluation Team conducted reference check calls. The information gathered during the calls was another vital resource to the Team. Not only did it confirm some of the Team's observations, but it also allowed for a candid assessment of the implementation, on-going education, and client service support of each firm from the perspective of similarly-sized public pension peers.

Following the interviews and four-month testing period, the Evaluation Team discussed each firm's expected ability to meet the scope of work, evaluation criteria, and BOI reporting requirements. Each semi-finalist's client service and subscription fee models were also considered. The Evaluation Team swiftly and unanimously narrowed the group from three total Fund risk semi-finalists to one: MSCI. As a standalone ESG data and analytics provider, Sustainalytics was also a clear choice. Semi-finalist scores and fee ranges are presented in Table 4 below.

Table 4
Semi-Finalist Scores and Fees*

	BlackRock	FactSet	MSCI	Sustainalytics
	TOTAL FUND RISK SYSTEM			ESG DATA & ANALYTICS
FINAL SCORE	84	82	96	89
PROPOSED FEES	$675,000-865,000	$780,000-910,000	$478,000-730,000	**
NET FEE ADJUSTED FOR CANCELLATION OF DUPLICATIVE SERVICES	$275,000-465,000	$380,000-510,000	$78,000-330,000	**

** Fee ranges shown for confidentiality and include ESG data sub-vendor costs for MSCI ESG, Sustainalytics, and Trucost. Annual fees are estimated and do not include additional licensing fees and data source costs that may be incurred.*
*** Aggregated into proposed fees for each risk platform column for consistent comparability.*
**** Anticipated cost less than the amount allocated in the FY20 budget.*

The Evaluation Team concluded that MSCI and Sustainalytics were the clear and distinct platforms to recommend for this search. MSCI's research capabilities and tenure, robust, factor-based risk models, attention to data validation/accuracy, and client service are notable. As highlighted in staff's strengths and concerns, MSCI represents 90 of the top 100 global pension funds, providing them an edge in supporting asset owner clients. Last, the platform is flexible and evolving: Clients can access risk analysis via a dedicated platform, excel add-ins, and through their most recent initiative, Beon, which is an impressive web-based portal under development.

MSCI Concerns and Mitigants

Despite the many merits that staff identified for MSCI in the attached strengths and concerns table, the Evaluation Team identified two concerns worth exploring.

1. **MSCI's risk application does not have an embedded order management system**. As noted to the Trustees, one of the desirable features for a finalist in this search was to have an order management system, which would be needed if LACERA decides to bring investment management in-house. However, MSCI's platform is purely for risk measurement and reporting; it does not have a native order management system.

   Mitigant: 1) LACERA's initial efforts in managing assets internally could be done on Bloomberg's order management platform; the investments office already has access to Bloomberg; 2) LACERA's custodian, State Street, recently acquired Charles River, a leading order and execution management system. Clients can subscribe to that service, and have data route directly through State Street's accounting platform. MSCI has recently partnered with Charles River and is establishing the means to fully integrate MSCI's risk capabilities with the Charles River application. Both of these options offer a "solid" solution for trade execution if, and when, LACERA moves to internal management.

2. **Web Start dependency on Java for MSCI's latest risk system enhancement.** The second concern is regarding MSCI's newest technological investment. Beon is a state-of-

the-art, client-friendly interface that sits on top of MSCI's risk engine. The Evaluation Team asked LACERA's systems department to evaluate the semi-finalists from an IT perspective. Beon has a Java Web Start dependency, which LACERA's systems group has an aversion to.

Mitigant: 1) The roll-out of Beon will happen in phases through 2021. The equity module of Beon is complete and MSCI has started its work on releasing an update for fixed income. As MSCI moves through a full multi-asset class solution, MSCI will review the Java Web Start dependency and anticipates introducing other applications, beyond Java, for Web Start; 2) If the Trustees approve staff's recommendations, LACERA's systems group will support the product, but will establish enhanced procedures and additional security training for the investment office. This will help mitigate risks for the computers that the application will run on.

While BlackRock and FactSet's written evaluation ranked well, and both firms offer capable total Fund risk systems, the four-month testing exercise solidified that MSCI's application, client service model, analytics, reporting, and investment into a web-based system is the preferred and most cost-effective solution.

In the case of Blackrock, the firm's resources, expertise in modeling fixed income, and suite of ancillary services were marks of strength. However, a notable drawback of the BlackRock platform is its data management model. Unlike MSCI, BlackRock has limited on-going data management services. After implementation, LACERA would have to dedicate an analyst to load, reconcile, and monitor alternative assets data. That analyst would be a team of one and not an expert on the application or every asset type/derivative that MSCI's 200 dedicated data engineers cover. The Evaluation Team considers data integrity a fundamental input to the risk management process; not having an on-going data team for the most difficult asset types precluded the Team from recommending BlackRock to advance in the process.

FactSet also did not move on as a finalist. LACERA's equity team currently uses the FactSet equity portfolio analytics service for global equity attribution and data. Although that platform is very strong in equity market and economic information, FactSet's proposed risk system is not as robust as the other semi-finalists. The platform is an interface for a proprietary risk system as well as many vendors that license out their risk models to FactSet. A client can toggle between the myriad of risk algorithms, giving FactSet more of a data aggregation feel, without a clear competitive advantage. The FactSet platform is behind its peers in modeling assets within the alternatives space and the Evaluation Team observed that their client service team was not as well-versed in risk analytics as their competitors.

ESG Analysis

The ESG Team conducted a similar exercise as the Evaluation Team, assessing ESG respondents on the breadth and depth of their services, platform functionality, as well as integration with the total Fund risk system semi-finalists. Three primary services were evaluated:

- **Company ESG research and data analytics –** ESG research and ratings measure a company's exposure and management of certain ESG risks and opportunities.

- **Business involvement screens –** Identify companies' exposure to specific business activities. LACERA has formal policies to monitor and discourage external managers' exposures to investments related to tobacco, Iran and Sudan.

- **Carbon/climate data and tools –** Assess climate change risks and opportunities through various approaches such as carbon emissions and intensity concentration. LACERA aims to access climate data and tools as their methodologies and data availability are further refined.

For ESG data and analytics, staff notes that ESG research and data methodologies are still emerging and evolving. Additionally, as market demand for ESG integration accelerates, there has been steady consolidation among what were once niche research providers. Given these dynamics, staff evaluated each service provider in consideration of their ability for staff to assess the ESG risks in LACERA's portfolios, evaluate exposures for certain business risks (e.g., Iran and Sudan policies), and access nascent tools for climate risk exposure monitoring.

Upon review of each of the service providers, staff is recommending a combination of three product lines among the three providers. MSCI ESG in recent years has emerged as the preeminent provider of ESG research and can provide LACERA with market-recognized ESG research in each of the three areas of focus: company research and ratings, business involvement/exposure analysis, and carbon/climate analysis tools.

In addition, Sustainalytics offers a differentiated approach to company ESG research and ratings, as it uses a more fundamental research approach and a newly adopted methodology that incorporates the materiality matrix of the Sustainability Accounting Standards Board (SASB) to which LACERA is affiliated. Staff notes that there is low correlation among ESG ratings between MSCI and Sustainalytics, enabling LACERA to identify multiple views on ESG risk.

Lastly, staff identified that FactSet's sub-vendor, Trucost, a recognized provider of climate assessment and data, would complement MSCI ESG with deeper research on climate exposures. For example, Trucost provides more levels of emissions data than MSCI. In addition, both Trucost and MSCI are availing new tools to conduct scenario analysis for climate transition and physical risks.

Interviews: On-site Meeting with the Finalist

Staff conducted the last round of interviews at MSCI's offices in the Bay Area. During the on-site due diligence, staff met with the proposed client service team and lead consultant. Staff reviewed the offering and received more detailed information on implementation and training. Staff also visited MSCI's research hub in Berkeley and discussed current initiatives with MSCI's Head of Multi-Asset Class research as well as an onboarding project plan with MSCI's data engineering team. These discussions provided staff a deeper understanding of the resources behind MSCI's platform and a strong understanding of MSCI's client implementation process.

IV. BOI Recommendation

Based on this overall assessment, the Evaluation Team recommends that the Trustees approve appointing:

1. MSCI Analytics to provide total Fund risk services; and
2. MSCI ESG Research LLC and Sustainalytics US Inc. for ESG data and analytics, as well as Trucost-S&P Global for climate-related data

ATTACHMENT B

TOTAL FUND RISK SYSTEM
Semi-Finalist Strengths and Concerns Comparison

STRENGTHS			
	BlackRock	**FactSet**	**MSCI**
Organization (firm profile, ownership, product mix, AUM, client base, regulatory audits, past or pending litigation, operations)	1. **Opportunity to leverage asset management side:** diversified investment platform that includes equity, fixed income, alternatives and cash management products 2. **Strong fixed income pedigrees:** subject matter experts with specializations in securitized products 3. **Recent acquisitions:** eFront (2019) for increased private equity and real estate coverage	1. **Long standing relationship with LACERA:** staff have been users of the software for 11 years 2. **Close proximity to the LACERA office:** dedicated LACERA team would be based out of the downtown Los Angeles office 3. **Breadth of third party content:** benchmarks, risk models, ESG factors, ETF/mutual fund holdings 4. **Recent acquisitions:** CYMBA Tech (2016) for OMS platform, BI-SAM Tech (2017) for performance services	1. **Key business segment:** More than a third of the firm's revenue is derived from the Analytics business segment as of 2018 2. **Strong lineage to risk and factor analysis:** the factor models powering the system are based on four decades of academic research and real-world experience 3. **Research center and whitepapers:** differentiated insights and content are central to the franchise 4. **Recent acquisitions:** GMI Ratings (2014) for additional ESG data, Insignis (2015) for automated data collection management
Professional Staff (depth, experience, turnover, client service, compensation, diversity, alignment)	1. **Deep bench with long track record:** on average, key executives have 15 years managing the product 2. **Diverse team:** dedicated LACERA team consisted of professionals with various backgrounds 3. **Client support model:** 24/7 support with proactive monitoring, incident response, escalation and disaster recovery capabilities	1. **Largest employee base:** as of November 2018, the firm's employee headcount reached 9,600, more than triple the amount of the other two finalists 2. **Quick turnaround times:** response times were the shortest of the group	1. **Managed Services:** data processing, reconciliation, and reporting functions are delegated to a specialized team at MSCI 2. **Public pension fund experience:** 90 of the top 100 global pension funds are clients as of 2017 3. **Asset owner expertise:** 40-person team specialized in risk management, portfolio construction and performance reporting for pension funds

	BlackRock	FactSet	MSCI
Risk System Features & Capabilities (product history, competitive advantages, system maintenance, security, implementation, data requirements, analytics & reporting, ancillary services)	1. **Platform is easy to use:** graphical user interface (GUI) designed for easy use 2. **Strong system security controls:** best practices from the International Organization for Standards (ISO) framework with additional reference to the NIST Cybersecurity Framework 3. **Reporting flexibility and customization:** users can create custom interactive dashboards and reports 4. **Full suite of ancillary services:** portfolio and order management, trading, and operations capabilities	1. **Superior equity analytics:** FactSet has strong roots in equity analytics, which is the largest investment in LACERA's total fund 2. **Clients presented with a choice:** FactSet has partnerships with Axioma and Northfield to utilize their risk models in addition to its own proprietary risk models 3. **Various data & analytical tools are customizable:** tools are fully customizable and clients have complete control over all of the inputs 4. **Platform includes robust capital markets research:** broker research, company press releases, macro news summaries, and market analysis are all integrated into the FactSet workstation	1. **Jack of all trades:** unified analytical framework proficient in both public and private markets 2. **Hedge fund platform is best-in-class:** over 1,400 funds currently on the platform and covers two-thirds of the global hedge fund AUM 3. **Full access to MSCI indices:** LACERA currently uses a handful of MSCI indices and would have access to the underlying securities 4. **Intricate system architecture and secured data centers:** MSCI's Common Platform is built using a sophisticated multi-tier architecture with data centers that are SSAE-16 certified, reviewed and updated annually 5. **MSCI's platform a clear competitive advantage:** Following the four-month system test, the Evaluation Team reached immediate consensus that MSCI's risk system capabilities were the most robust.
ESG Tools & Services (data systems, ratings, analytical tools, coverage levels, research capacity)	1. **ESG data integration:** can access 3rd party ESG data analytics	1. **Flexibility in data sources:** can incorporate data from multiple vendors in one view 2. **Breadth of data:** broader availability of ESG data such as risk rankings and carbon metrics	1. **Data access:** ESG data for public markets is available across risk system RFP respondents and can be incorporated into total fund analysis 2. **Systematic research:** research is systematic and structured, point-in-time view 3. **Wide variety of offerings:** covers the spectrum of ESG related services (risk ratings,

			carbon/climate, business involvement) 4. **Screening:** evaluate holdings across portfolio with business involvement risks by revenue exposure
Fees	1. **BlackRock assets excluded:** assets managed by BlackRock under separate IMAs are excluded from fee calculations	1. **Transparent pricing schedule:** a la carte style pricing is clear and transparent	1. **Multi-year optionality:** alternate pricing plans with delayed invoicing and implied discounts

CONCERNS			
	BlackRock	**FactSet**	**MSCI**
Organization (firm profile, ownership, product mix, AUM, client base, regulatory audits, past or pending litigation, operations)	1. **Potential groupthink:** the firm's asset management teams use the identical platform in their investment process	1. **Data aggregator:** product is more of a data aggregation and distribution platform which may limit focus on depth and quality of applications 2. **Clients:** products and services are more tailored to research analysts and asset managers	1. **Corporate structure:** large, publicly listed company with multiple subsidiaries may impact independence of business unit
Professional Staff (depth, experience, turnover, client service, compensation, diversity, alignment)	1. **Heavy reliance on LACERA staff for holdings data:** certain investments will require LACERA staff to fill out BRS required templates on a monthly basis for data to get updated 2. **Response times can be hit-or-miss:** LACERA's RFP evaluation team experienced longer than expected response times to basic questions	1. **Executive leadership team changes:** since 2017, the firm has experienced several key executive departures 2. **Team turnover during RFP process:** LACERA's lead point of contact left the firm early in the search 3. **Lack of preparation for meetings:** the FactSet team visited the LACERA office a couple times and appeared unprepared compared to their peers	1. **Key man risk:** day-to-day LACERA requests are expected to channel through a single, dedicated client consultant

	BlackRock	FactSet	MSCI
Risk System Features & Capabilities (product history, competitive advantages, system maintenance, security, implementation, data requirements, analytics & reporting, ancillary services)	1. **Experienced system issues during trial period:** LACERA's RFP evaluation team experienced occasional system issues with the main Explore application 2. **Intensive manual data collection process during set-up:** LACERA staff was tasked to collect large amounts of data related to our private market investments, using BRS required templates 3. **Data quality control checks can be spotty:** overnight data quality review and production process outsourced to Oracle Financial Services (OFS) in Mumbai and Bangalore, India	1. **Local machine installation:** for optimal performance, FactSet recommends users install the software on their local machines 2. **Brief MAC model history:** FactSet's most comprehensive multi-asset class risk model has only been available for 5 years 3. **Public markets investment focus:** relatively weaker solutions in the alternative investments space with heavy use of proxies 4. **System processing times can run long:** risk model output containing large chunks of data can be time-consuming	1. **Dated interface:** the current BarraOne application (launched in 2002) is a bit old 2. **Java dependency:** the platform will require Java to launch certain applications 3. **Beon full integration:** MSCI's new GUI faces a lengthy and uncertain roadmap ahead with a projected release date in 2021 4. **No OMS platform:** a native order management system is currently not supported
ESG Tools & Services (data systems, ratings, analytical tools, coverage levels, research capacity)	1. **Limited data availability:** single vendor for ESG data 2. **Scenario analysis:** dependent on firm to develop scenarios 3. **Screening:** unable to evaluate holdings across portfolio with business involvement risks	1. **Screening:** unable to evaluate holdings across portfolio with business involvement risks 2. **Scenario analysis:** not available	1. **Scenario analysis:** not extensively customizable or flexible 2. **Backtesting:** limited to 5 years due to changes in methodology
Fees	1. **Additional terms:** incremental fees levied once certain thresholds are exceeded as well as a three year lockup period from commencement date	1. **No extras:** additional costs for implementation services, additional user accounts, ESG data licensing, and OMS platform	1. **Base package does not include advanced attribution tools:** Competitors include standard attribution in base package; MSCI's best & final fee includes attribution model

ESG DATA AND ANALYTICS
Finalist Strengths and Concerns Comparison

STRENGTHS		
	MSCI ESG Research	**Sustainalytics**
Organization (firm profile, ownership, product mix, AUM, client base, regulatory audits, past or pending litigation, operations)	1. **Key business segment:** Firm is committed to continued growth in ESG research and offerings 2. **Full research coverage:** MSCI ACWI IMI for equity securities and Bloomberg Barclays Aggregate for fixes income securities 3. **Recent acquisitions:** GMI Ratings (2014) for additional ESG data, Carbon Delta (2019) for carbon/climate data and tools	1. **Primary focus:** solely focused on ESG research and analytics 2. **Recent acquisitions:** Solaron Sustainability services (2018) for research capacity, GES International (2019) for governance screening and support services
Professional Staff (depth, experience, turnover, client service, compensation, diversity, alignment)	1. **Highly educated team:** 185 full-time permanent researchers, of which 40% are Ph.D.s 2. **Public pension fund experience:** Clients include several of the largest U.S. public pension plans	1. **Large research team:** over 200 full-time analysts 2. **Service provider partnerships:** Glass Lewis for ESG profile in research reports, FTSE Russell for ESG risk ratings for ESG indices
ESG Tools & Services (data systems, ratings, analytical tools, coverage levels, research capacity)	1. **Data access:** ESG data for public markets is available across risk system RFP respondents and can be incorporated into total fund analysis 2. **Systematic research:** research is systematic and structured, point-in-time view 3. **Wide variety of offerings:** covers the spectrum of ESG related services (risk ratings, carbon/climate, business involvement) 4. **Screening:** evaluate holdings across portfolio with business involvement risks by revenue exposure	1. **Fundamental research:** research process is in-depth and forward looking 2. **Materiality:** modeled along SASB framework 3. **Backtesting:** new methodology launched in 2019 was backtested for 9 years of history/modeling

CONCERNS		
	MSCI ESG Research	**Sustainalytics**
Organization (firm profile, ownership, product mix, AUM, client base, regulatory audits, past or pending litigation, operations)	1. **Corporate structure:** large, publicly listed company with multiple subsidiaries may impact independence of business unit	1. **Growth phase: Does not currently provide research coverage for LACERA's full public market benchmarks:** firm is building more comprehensive security coverage 2. **Client base:** few public pension plan clients with subscription to multiple products
Professional Staff (depth, experience, turnover, client service, compensation, diversity, alignment)	1. **Key man risk:** day-to-day LACERA requests are expected to channel through a single, dedicated client consultant	1. **Tenure:** average tenure for analysts is approximately 4 years
ESG Tools & Services (data systems, ratings, analytical tools, coverage levels, research capacity)	1. **Scenario analysis:** not extensively customizable or flexible 2. **Backtesting:** limited to 5 years due to changes in methodology	1. **Screening:** not able to evaluate holdings across portfolio with business involvement risks 2. **Scenario analysis:** not available 3. **Carbon:** lacking scope 3 emissions

ATTACHMENT C

MSCI INC.

Organization

Founded in 1969, MSCI started as a provider of global equity index products. The firm is headquartered in New York with offices in 32 cities in 21 countries. MSCI became a public company in November 2007 (NYSE: MSCI) and has grown to become a leading provider of a wide range of investment related support tools and services operating across four business segments. A brief description of each is provided below.

1. Analytics
   MSCI Analytics encompasses MSCI's risk management, performance attribution, and portfolio management applications and services. The Analytics platform, MSCI Beon, offers institutional investors an integrated view of risk and return with research-enhanced content and tools to help understand and control for risks across all major asset classes and time horizons. In addition, this segment provides client support services that assist clients operate more efficiently.

2. ESG
   MSCI ESG Research products and services are provided by MSCI ESG Research LLC and provides critical insights that help institutional investors understand how ESG can impact the long-term risk and return profile of their investments. MSCI maintains a broad universe of coverage consisting of approximately 8,440 companies and 13,000 issuers (subsidiaries of companies). The firm offers a broad array of products including company ranking/ratings, business involvement screens, carbon/climate tools, ESG controversies/norms, accounting risk, mutual fund metrics, and sustainable impact data.

3. Index
   MSCI Index facilitates the construction and monitoring of portfolios in a cohesive and complete manner and calculates more than 200,000 end-of-day indexes daily for a variety of markets and industries. Clients subscribe to these indices to define investment universes, measure performance, and manage risk. In addition, jointly with Standard & Poor's Financial Services, MSCI maintains the Global Industry Classification Standard ("GICS") classification system.

4. Real Estate
   MSCI Real Estate offers data-driven analytics and research of global and individual property markets as well as benchmarks for performance measurement.

As of December 2017, MSCI served over 7,000 clients worldwide with a 94% retention rate. Globally, 90 of the top 100 pension funds are MSCI clients, including 14 of the top 25 U.S. pensions, representing $1.7 trillion of assets under management.

Professional Staff

MSCI employs over 3,000 employees that includes 24/7 access to support lines staffed by professionals well-versed on the risk platform. The firm's proposed client service model includes a team of 4 primary professionals with an average of 10 years of experience utilizing the system and will serve as the day-to-day contacts for LACERA. The biographies of LACERA's proposed client service team are provided below.

John Healey, CFA, Senior Associate, Analytics Asset Owner Relationship Manager, is a senior associate based in San Francisco, covering analytics for MSCI's west coast asset owner clients. In this role, he is responsible for the day-to-day account management of MSCI's pension, endowment, and foundation clients, ensuring they extract the most value from their partnership with the firm. Mr. Healey joined MSCI in 2017, starting in their New York office prior to relocating to California. Prior to MSCI, he was a portfolio manager at a private bank, servicing ultra-high net worth and institutional clients. Mr. Healey holds a Bachelors in Entrepreneurship from Quinnipiac University and is a CFA charterholder. In his spare time, he volunteers for the Cystic Fibrosis Foundation's Young Professional Leadership Committee.

Bryan Murphy, CFA, Executive Director, Head of West Coast Analytics, is an executive director based in San Francisco and the head of MSCI's asset owner analytics team in the US. In this role, he works directly with many of the country's leading plan sponsors in a variety of areas including risk governance, factor investing, and data management. Mr. Murphy joined MSCI in 2007 and spent four years in New York as a relationship manager for MSCI's analytics solutions focusing on asset manager clients. He has also worked in institutional relationship management on both the buy-side and sell-side. Mr. Murphy graduated from UC Berkeley with high honors in Spanish studies, has completed graduate coursework in Business Management at UC Berkeley Extension, and is a CFA charterholder. He is also President of Wave Foundation, a non-profit organization focused on education in West Africa.

Christopher Brady, CFA, Executive Director, Client Consultant, currently works in the San Francisco office as a consultant in the risk management analytics group and covers many of MSCI's most significant clients in the asset owner segment. Mr. Brady collaborates closely with MSCI's clients on the design and development of total plan risk management solutions. His role is multi-faceted and includes providing advice on how to best leverage MSCI's systems and analytics and ensuring client satisfaction with MSCI services. He first joined MSCI in 2003 as part of Barra's acquisition of Financial Engineering Associates. He has held a variety of roles over his career at MSCI including product manager and relationship manager. Mr. Brady is a graduate of Wilfred Laurier University in Waterloo, Ontario, Canada and is a CFA charterholder.

Stella Kondonijakos, Executive Director, Implementation Services, is an executive director on the implementation services team. Ms. Kondonijakos and her team provide implementation services, as needed, for the automation and integration of BarraOne into client's investment processes. This typically involves securely automating the import of holdings directly into BarraOne from the client's custodian or other database, and assisting with the construction of a tree structure to organize client portfolios in BarraOne. Ms. Kondonijakos joined MSCI in 2006 as a risk analytics project manager. Prior to that, she held product and project management positions at Advent Software and Wells Fargo Bank. She holds a BA in English Literature and Biological Anthropology from UC Berkeley.

Chris Breckon, CFA, Executive Director, Asset Owner Client Coverage, is an executive director within the MSCI asset owner coverage team for the western US. Having joined MSCI in

2014 and with over fourteen years' investment experience, he represents MSCI's index and ESG business interests, consulting with clients to improve investment results and reduce risk. Prior to MSCI, Mr. Breckon held positions at Goldman Sachs Asset Management and Smith Barney, working with independent advisors and high net worth investors. He holds a Master's Degree in Financial Mathematics from the University of Chicago, and Bachelor of Science degrees in Physics and Mathematics from Washington State University. He is a member of the CFA Society of San Francisco and is a CFA charterholder.

Diversity and Inclusion

MSCI's diversity and inclusion practices are part of its code of conduct and related policies. The firm is committed to developing a diverse, inclusive workforce as well as participating in several industry groups. In the RFP response, MSCI indicated that the firm's Board of Directors includes four women, representing 33% of directors. Below are a few representative programs and initiatives developed and promoted across the firm:

Internal

- MSCI Pride is a global company resource group for LGBTQ employees and allies
- Women's Leadership Forum (WLF) has 23 chapters in 15 countries
- Executive Diversity Council
- Annual Diversity and Inclusion Summit

External

- Catalyst, a non-profit organization with the mission to accelerate progress for women through workplace inclusion
- Latinos in Finance
- Out & Equal Workplace Summit

SUSTAINALYTICS INC.

Organization

Sustainalytics is a global environmental, social, and governance ("SG") and corporate governance research and analysis firm. Sustainalytics US Inc. is a private company and wholly owned subsidiary of Sustainalytics Holding BV based in the Netherlands. A brief description of its core ESG related research segments follows.

1. ESG Risk Ratings
   Sustainalytics ESG Risk Ratings seek to analyze and measure a company's degree of unmanaged ESG risk. The research assesses how potential ESG risk may affect long-term enterprise value. The methodology for the ratings was revised in 2018 to incorporate the materiality matrix of the Sustainability Accounting Standards Board (SASB) and input from the market and Sustainalytics clients. With greater focus on financial materiality and company level insights, it is intended to provide a signal of prospective ESG related investment risks. The research addresses a company's exposure to industry-specific material ESG risks and how well the company is managing those ESG risks. The ratings fully incorporate corporate governance analysis and various insights from multiple exposure factors, business model, financial strength, geography, and incident history.

   Sustainalytics generates ratings on approximately 10,000 companies globally, of which 4,200 incorporate comprehensive analysis. Sustainalytics is expanding its research coverage.

2. Product Involvement
   Sustainalytics product involvement exclusionary research flags companies with revenue generation from defined product lines, services, or geographic exposures.

3. Carbon Research
   Sustainalytics offers research assessing companies' climate risks, carbon intensity, and fossil fuel exposures.

Professional Staff

Sustainalytics has over 360 professional employees, most of whom (199) are focused on research and analysis and a significant portion of whom (99) are dedicated to information technology and software tools. Key biographies who would play a role in the product development and servicing of ESG-related research and ratings for LACERA include the following:

Michael Jantzi, CEO, founded Jantzi Research, a predecessor to Sustainalytics, and has been a key figure in sustainability research and analysis for several decades. Under his leadership, Sustainalytics has been internationally recognized as a leader of independent responsible investment research. He serves on the Advisory Council of the Ivy Business School's Institute for Long-Term Prosperity through Business and holds degrees from Western University and Dalhousie University.

Simon MacMahon, Head of Research Products, is a member of the company's executive team and oversees all ESG and corporate governance research and the management of Sustainalytics' ESG ratings products. Mr. MacMahon brings content knowledge, a deep understanding of research and data management processes, and extensive market experience to the role and has been with the firm since 2008. He has a master's degree in Business Administration from the Schulich School of Business, professional certification from the Greenhouse Gas Management Institute and is a certified Global Reporting Initiative (GRI) trainer. He is a board member of the Responsible Investment Association.

Hendrik Garz, Head of Global ESG Rating Products previously worked as a sell-side equity analyst/strategist at WestLB for more than 15 years and is currently a member of the European Federation of Financial Analyst Societies' commission on ESG. Prior affiliations include serving on Project Delphi's technical working group, the advisory committee for the STOXX ESG index family, the PRI working group on ESG integration, the Technical Review Committee of the Global Initiative for Sustainability Ratings (GISR) and the Investor Testing Group of the IIRC. Finally, Mr. Garz was also involved in the development of the German Sustainability Code. He holds a PhD in Finance and has co-authored a book on Portfolio Management.

Kirsten Boer, Associate Director, Client Relations leads the Client Relations team servicing clients in North America. Ms. Boer joined Sustainalytics over six years ago and supports and advises asset owners and asset managers to integrate Sustainalytics data in their investment processes. The clients relations team facilitates and coordinates access to analysts and appropriate product specialists for the ESG solutions, as well as supporting technical set up and integration. Prior to joining Sustainalytics, she worked for a certification standard in the voluntary carbon markets, where she oversaw the annual certification of greenhouse gas emission reduction projects and the commercialization of the resulting carbon credits. Ms. Boer has also contributed to market research projects conducting both primary and secondary research and analysis. She holds an honors bachelor degree in Commerce from Queen's University, Ontario.

Matthew Raimondi, Associate Director, Client Relations works closely with U.S. asset owners and asset managers in the development and execution of responsible investment strategies. Before joining Sustainalytics, Mr. Raimondi was a manager at Business for Social Responsibility (BSR), a global sustainability consultancy, advising businesses on integrating sustainability into their company strategies. He has also worked in finance in both investment management and corporate finance roles at Hall Capital Partners and Hewlett-Packard, respectively. Mr. Raimondi completed a bilingual MBA at IESE Business School (Spanish and English) and received bachelor degrees in Finance and Economics from Santa Clara University.

Diversity and Inclusion

Sustainalytics maintains a firm-wide diversity and inclusion policy, inclusive of addressing workplace harassment, as part of a firm-wide commitment to diversity and inclusion throughout its recruitment, hiring, retention and promotion practices. The firm represents that it has internal goals and metrics related to employee engagement, as well as diversity and equity specifically. The firm represents that it has not been subject to any judicial, regulatory, or claims related to equal employment opportunity or workplace discrimination in the past twelve years. The firm declined to provide demographic breakdowns of its U.S. workforce.

ATTACHMENT D

MEMORANDUM

To: LACERA Board of Investments

From: Stephen McCourt, Leandro Festino, Tim Filla, Alina Yuan
Meketa Investment Group

Date: January 8, 2020

Re: Total Fund Risk System Search

BACKGROUND

Following Board of Investments approval at the December 2018 meeting, Staff initiated a search for a Total Fund Risk System. The objective of the search was to identify a single risk management system which was capable of monitoring and reporting on risk across all major asset classes and also incorporating ESG risk considerations.

RFP PROCESS REVIEW

Staff conducted a four phased search over the past twelve months. Phase I involved drafting the RFP, gaining approval of the Board of Investments and issuing the RFP. There were seven respondents, each of which were reviewed and given rankings during Phase II. The top three firms were advanced to Phase III during which each of those firms were interviewed at LACERA's offices and asked to provide system demonstrations. Following the initial interviews, Staff asked each provider to complete various evaluation exercises such as stress test, portfolio simulations, and exposure reporting. To conclude Phase III, staff conducted multiple reference checks for each firm. During Phase IV, Staff identified MSCI as the preferred risk system to advance to the Board for approval and also identified Sustainalytics as an additional valued service for ESG related risk.

SUMMARY AND RECOMMENDATION

Meketa has reviewed Staff's recommendation and the process Staff utilized to evaluate potential risk systems. LACERA's Investment Beliefs contain a section dedicated to risk, which highlights the critical importance and complexity of risk management for LACERA. As a large asset owner with a complex portfolio and an important mission, we believe it is appropriate for LACERA to invest in best-in-class risk management systems. The semi-finalist firm's all have robust capabilities and would be suitable for LACERA. Staff's process was very thorough and involved extensive testing of multiple risk management systems. Staff's testing of each system ultimately led to a clear preference for MSCI.

ESG risks are specifically cited within LACERA's Investment Beliefs and we believe it is appropriate for LACERA to have access to high quality analytics to assess ESG risks. MSCI and Sustainalytics are both leaders in the field of ESG data and risk measurement. Since ESG data and analysis is an emerging and evolving aspect of financial analysis, we also believe it is appropriate to utilize multiple vendors for data, ratings, and risk measurement. We look forward to discussing this matter with you at the January 8th meeting

SM/TF/LF/AY/srt

ATTACHMENT E

Total Fund
Risk System Search

Presentation Supplement

Board of Investments

January 8, 2020

Jude Pérez – Principal Investment Officer
Esmeralda del Bosque – Senior Investment Officer
Dale Johnson – Investment Officer

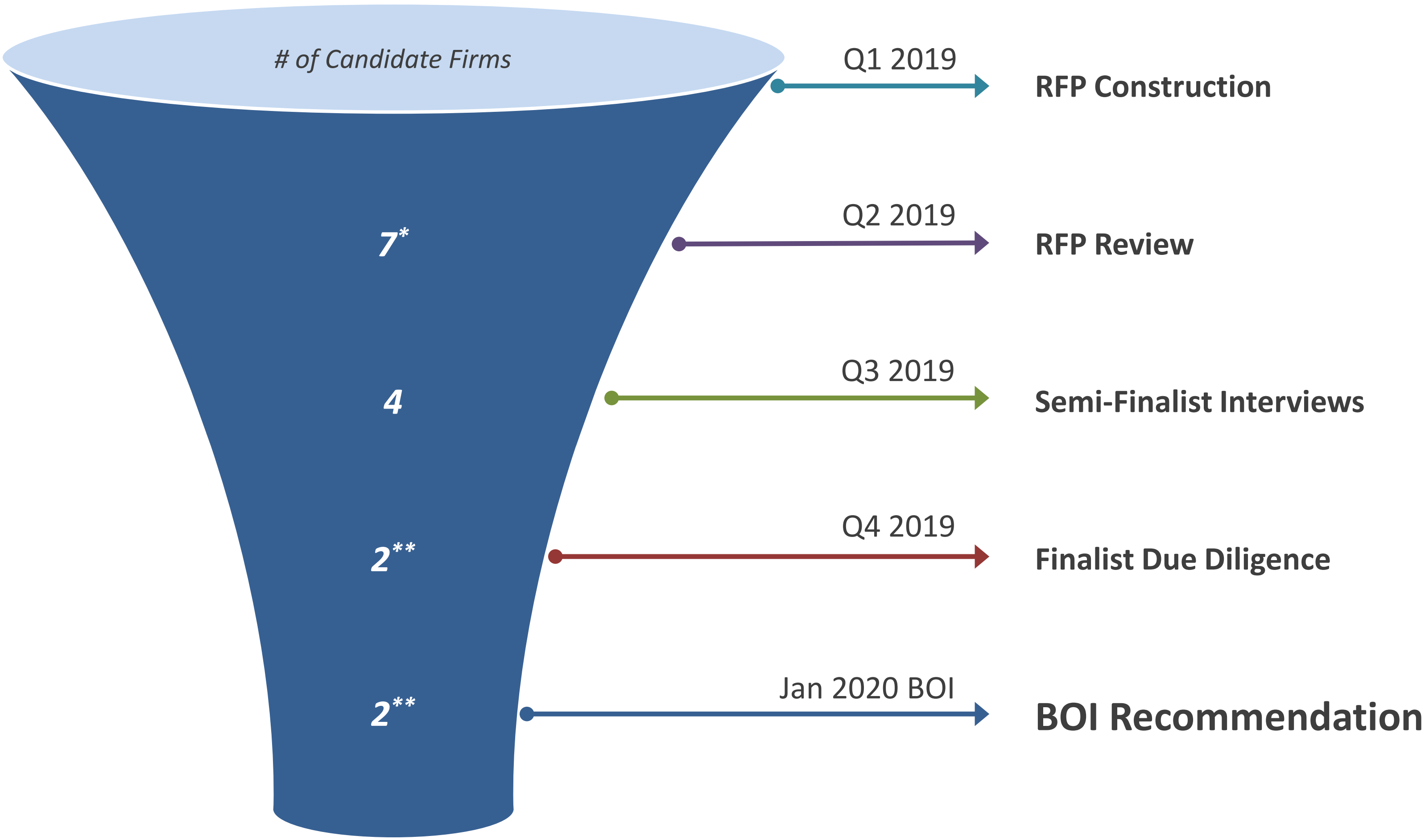
LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Purpose of Multi-Asset Class Risk System Search

Seek a comprehensive, multi-asset class, investment risk analysis software system

1. Assist in systematically identifying, assessing, monitoring and reporting on portfolio risk, including ESG factors, for the total Fund.
2. Cover all the major asset classes within the total Fund and enable a comprehensive view of aggregate total risk and active risk across the portfolios and within each asset class.
3. Inform LACERA's analysis of the performance of existing external asset managers as well as potential new external asset managers.
4. Should have the ability to serve as an execution management system, at a later date, if the Trustees wish to manage assets internally.

Evaluation Process and Timeline



** Staff received seven written responses for consideration (6 total Fund risk systems, 1 standalone ESG data and analytics provider).*

*** Staff's recommendation includes Trucost for climate-related data.*

Recommendations

1. Approve appointing:
   a. MSCI Analytics to provide total Fund risk services; and
   b. MSCI ESG Research LLC and Sustainalytics US Inc. for ESG data and analytics, as well as Trucost-S&P Global for climate-related data

	BlackRock	FactSet	MSCI	Sustainalytics
	TOTAL FUND RISK SYSTEM			ESG DATA & ANALYTICS
FINAL SCORE	84	82	96	89

About MSCI Analytics

Provides risk management, performance attribution, and portfolio management applications and services

Solution Design & Implementation	Client Data Management	Reporting	Management of Workflows
Streamline and optimize workflow	Outsource portfolio data collection, cleansing, and normalization	Design and produce custom reports for internal use, Trustees, and regulators	Automate and run enterprise reporting production process

17M+
Client positions per day

53M
Unique securities modelled

2M+
Time-series

220K+
Benchmarks from 25+ index providers

Up to 1T
Pricings per day

$1.7T of AUM
Representing 14 of the top 25 U.S. pensions as of Dec 2017

Source: MSCI

MSCI – Advantages & Considerations

Advantages

1. Fully integrated multi-asset class factor model with demonstrated ability to meet LACERA's needs
   a. *Unified risk analytical framework skilled in both public and private markets*
   b. *Four-month testing exercise of semi-finalists' systems revealed MSCI's robust capabilities*
2. Full service Managed Services offering

   Monthly data processing, reconciliation, and reporting functions are delegated to a specialized team
3. Leading provider of ESG research

   Market-recognized research in LACERA's focus areas: ratings, business involvement, and climate
4. Favorable fee proposal

   Cost-effective, multi-year pricing plans with delayed invoicing during implementation

Considerations

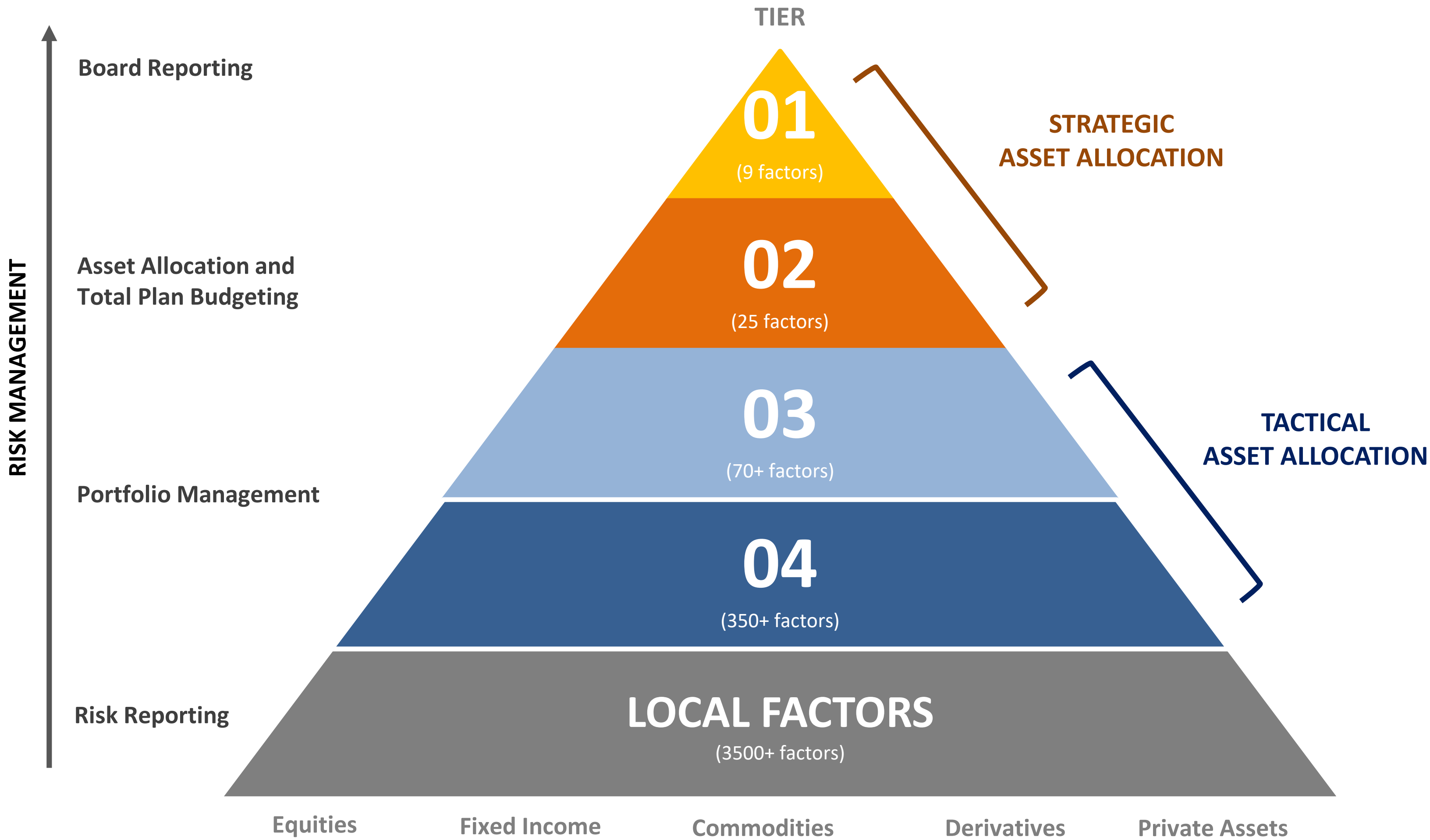
1. MSCI's risk application does not have an embedded order management system

   Mitigant: Bloomberg and State Street/Charles River are current OMS options available to LACERA
2. Web Start dependency on Java for MSCI's latest risk system enhancement

   Mitigant: MSCI reviewing Java dependency; LACERA Systems Division will support with enhanced procedures and additional security training

Advantage #1a – Multi-Asset Class Factor Model

Fully integrated approach to risk modeling



Source: MSCI

Advantage #1b – Multi-Asset Class Factor Model

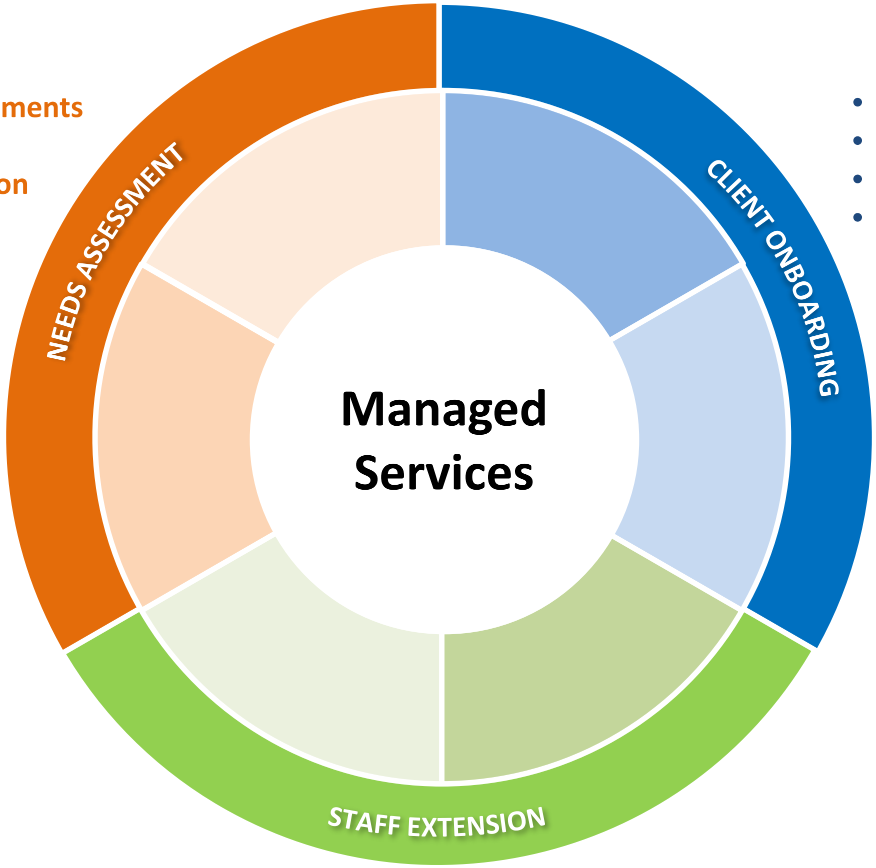
Four-month testing exercise

	Exercise Examples
Week 1 Training	▪ Review the training and research materials for each risk system ▪ Set a compliance flag, if possible
Week 2 Risk exposures	▪ Review high level characteristics of assigned portfolios vs. manager reported ▪ Break out accounts by sector, industry, and geography vs. manager reported
Week 3 Performance	▪ Load returns into the system and run performance reports ▪ Create a risk/return report as well as a risk/return chart
Week 4 Attribution	▪ Generate Brinson and Factor attribution reports ▪ Identify the top drivers of out- and underperformance
Week 5 Risk	▪ Decompose risk down to the security/industry/country levels ▪ Create a trend analysis and investigate any large variances
Week 6 Scenario / What-if analyses	▪ Create and run a scenario over a full market cycle that is pertinent to your asset class ▪ Run a what-if analysis of adding a new manager (or terminating an existing manager) and the impact to your overall program
Week 7 Optimization	▪ Use the portfolio optimization module to restructure your asset class ▪ Identify exposure gaps and prepare a reallocation plan
Week 8 Final exam	▪ Prepare a mock structure review utilizing all the information gathered in Weeks 1 – 7 ▪ Run a strategic asset allocation study

Advantage #2 – Managed Services

Access to a global team of seasoned experts

- Understand operational requirements
- Proof of concept
- Ongoing operational optimization



- Project management
- Workflow automation
- Business process and data analysis
- Testing and transition to production

- Dedicated services and resources
- Support during and after implementation

Source: MSCI

Advantage #3 – ESG Data and Analytics Services

Service	Description	Recommendations in GREEN
ESG Research and Ratings	• Company level ESG research, data, and ratings • Different methodologies at two primary vendors with low correlation* may complement and provide fuller picture of ESG risks • Enhance external manager due diligence • Enable comparisons across manager portfolios and public market composites	MSCI ESG • Systematic research methodology • Broad and deep company coverage Sustainalytics • Fundamental, forward-looking research methodology • More limited securities coverage but expanding • Complementary to MSCI ESG Trucost – *Not Available*
Business Involvement	• Identify investment exposures to defined business products/services or geographies and defined sanctions (e.g. Sudan, Iran) • Enable LACERA to implement LACERA policies on Iran and Sudan • Provide tools to conduct ad hoc exposure analysis (e.g. firearms; private prisons) • Evaluation criteria included: depth of research, granularity (revenue), customization, consistency	MSCI ESG • U.S. public fund client base with often similar investment exposure and restriction analysis needs or interests as LACERA • Flexible exposure analysis (based upon revenue) Sustainalytics – Not Recommended • Inability to modify or customize screening tools by revenue • Varied client base with different needs Trucost – *Not Available*
Climate Risk Data and Tools	• Assess exposure to climate risks and opportunities, including carbon emissions and intensity (point-in-time) such as carbon footprint, and scenario analysis (forward-looking analysis) • Criteria for evaluation included: data breadth, data depth, data quality, emissions modeling, scenario analysis tools	MSCI ESG • Scope 1 and 2 reported and modeled emissions data (scope 3 limited to one industry); Nascent scenario analysis Sustainalytics – Not Recommended • No scope 3; scenario analysis Trucost • Scope 1, 2, and 3 reported and modeled emissions; Scenario analysis

* See, for example, James Mackintosh. "Is Tesla or Exxon More Sustainable? It Depends Whom You Ask", Wall Street Journal, September 17, 2018. https://www.wsj.com/articles/is-tesla-or-exxon-more-sustainable-it-depends-whom-you-ask-1537199931.

Advantage #4 – Proposed Fees*

	BlackRock	FactSet	MSCI	Sustainalytics
	TOTAL FUND RISK SYSTEM			ESG DATA & ANALYTICS
Proposed Fees	$675,000-865,000	$780,000-910,000	$478,000-730,000	**
NET FEE ADJUSTED FOR CANCELLATION OF DUPLICATIVE SERVICES***	$275,000-465,000	$380,000-510,000	$78,000-330,000	**

** Fee ranges shown for confidentiality and include ESG data sub-vendor costs for MSCI ESG, Sustainalytics, and Trucost. Annual fees are estimated and do not include additional licensing fees and data source costs that may be incurred.*

*** Aggregated into proposed fees for each risk platform column for consistent comparability.*

**** Anticipated cost less than the amount allocated in the FY20 budget.*

L//.CERA

December 30, 2019

TO: Trustees – Board of Investments

FROM: Jonathan Grabel
Chief Investment Officer

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **VISION 2020: INVESTMENTS DIVISION WORK PLAN AND STRATEGIC INITIATIVES UPDATE**

Attached you will find a prospective work plan for 2020 and the coming years. It incorporates the Board of Investments' current strategic initiatives and recent discussions, as well as key agenda items for calendar year 2020.

Individual items and committee schedules are subject to modification.

Attachment:

Vision 2020 – Investments Division Work Plan and Strategic Initiatives Update

ATTACHMENT

Vision 2020:

Investments Division Work Plan and Strategic Initiatives Update

Board of Investments

January 8, 2020

Jonathan Grabel – Chief Investment Officer

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Discussion Outline

I. Setting the Stage: Background for Vision 2020 Plan

II. Vision 2020 and Beyond

III. Project Schedules for 2020

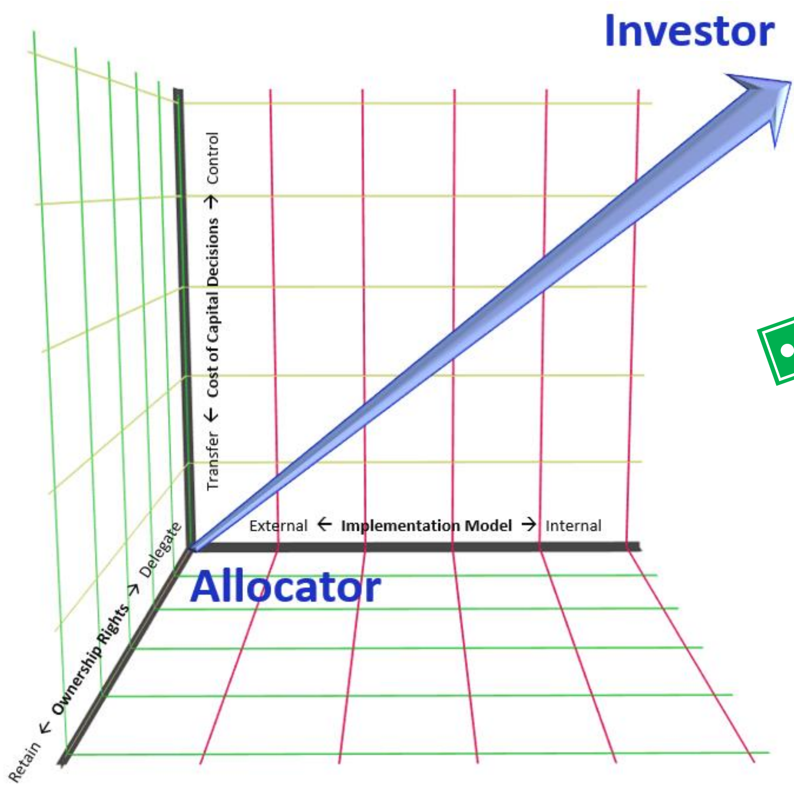
Objectives of Work Plan and Strategic Initiatives

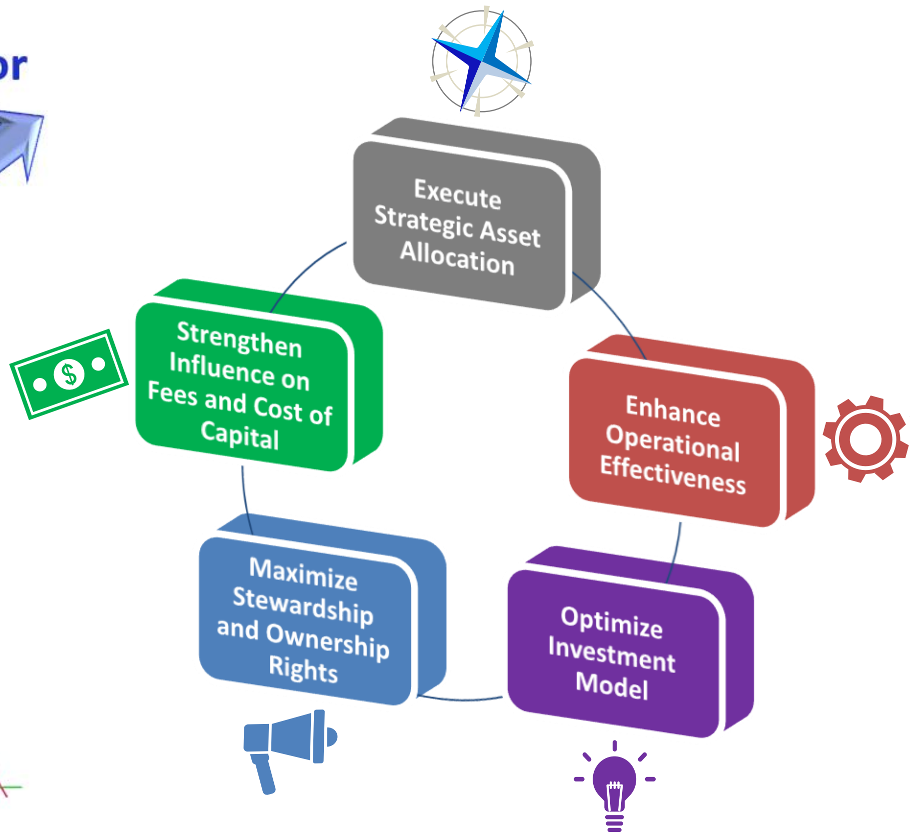
The Investments Division revisits its work plan for the coming year and beyond with the following aims:

1. Provide visibility into current and upcoming initiatives
2. Accurately reflect and synthesize all Board-approved projects and input from prior work plans, recent meetings and off-sites into a cohesive action plan
3. Promote disciplined execution and aligned resources for defined priorities

Building From 2019 Work Plan - Recap

To strengthen LACERA's ability to fulfill its mission, the 2019 work plan defined and grouped projects and anticipated Board agenda items into 5 inter-related pillars designed to evolve LACERA from an ***allocator of capital*** to an engaged, multi-dimensional ***investor***

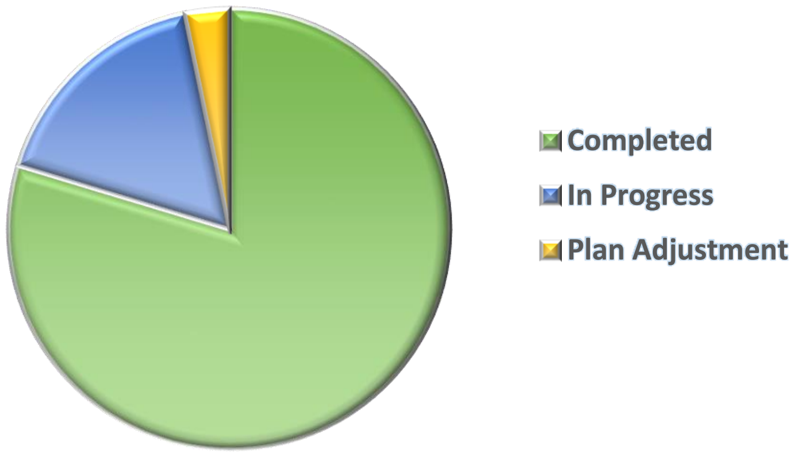




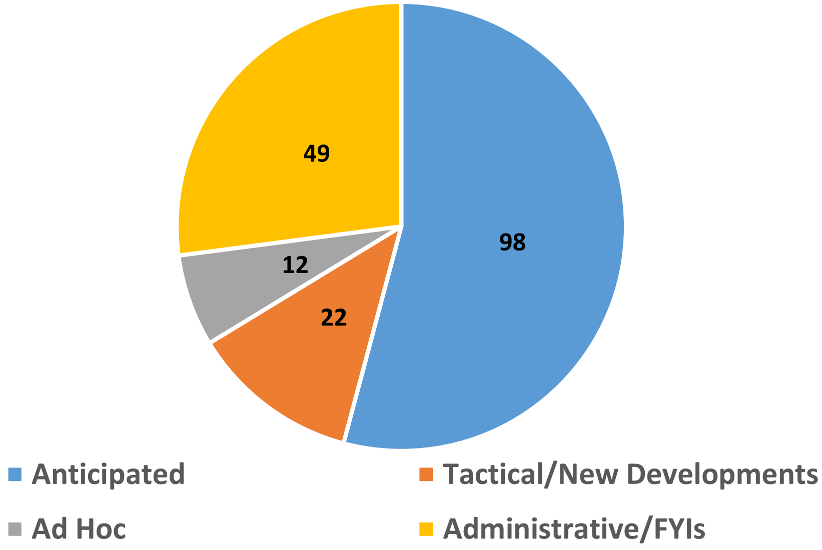
Status Check-In: 2019 Projects Largely Accomplished

LACERA largely accomplished the 2019 projects it planned for and anticipated…

2019 Work Plan Project Status



181 Agenda Items Completed



LACERA also took on additional agenda items, both proactively developing programming and folding in ad hoc requests

Select Highlights of 2019 Accomplishments

Execute Strategic Asset Allocation

- Completed structure reviews for Global Equities, Credit, Real Assets, Hedge Funds, Private Equity
- Launched Real Assets completion portfolio
- Hired asset class specific consultants

Enhance Operational Effectiveness

- Initiated search for Total Fund risk platform
- Launched RFP for administrative services for private asset classes
- Established procurement policy for investment-related services

Optimize Investment Model

- Executed Private Equity secondaries market sales and purchases
- Implemented cash overlay program
- Hired first dedicated illiquid credit manager

Maximize Stewardship and Ownership Rights

- Expanded proxy voting authority from about 20% to 90% by migrating to separate account structures
- Executed corporate engagements on corporate board diversity and climate risk
- Increased financial market policy advocacy with SEC comment letters, joint ILPA and CII letters and coordination

Strengthen Influence on Fees and Cost of Capital

- Initiated internal Private Equity co-investment strategy
- Renegotiated public markets investment management agreements
- Negotiated investor-friendly fee structures

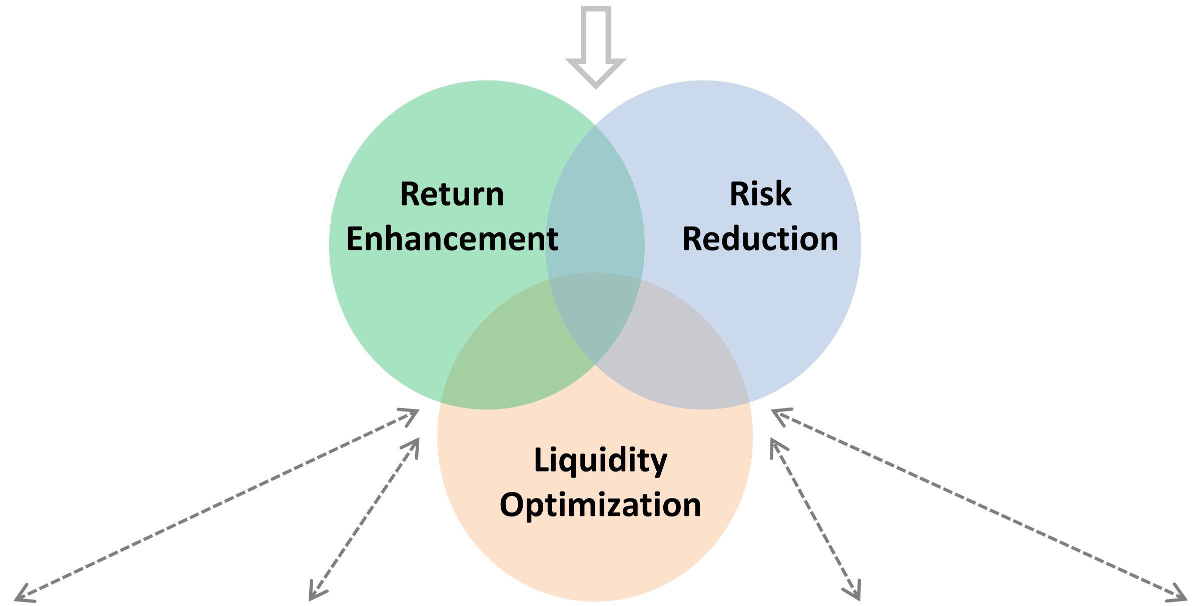
Plan for 2020 and Beyond

Vision 2020: Strategic Objective and Initiatives

Objective

Execute Strategic Asset Allocation

while balancing…



Initiatives

- **Enhance Operational Effectiveness**
- **Optimize Investment Model**
- **Maximize Stewardship and Ownership Rights**
- **Strengthen Influence on Fees and Cost of Capital**

Strategic Initiatives: Example Projects

Initiatives	Enhance Operational Effectiveness	Optimize Investment Model	Maximize Stewardship and Ownership Rights	Strengthen Influence on Fees and Cost of Capital
Short Term (2020)	• Alternative assets administrative services RFP • Benchmark review • Conduct business continuity plan exercises • Active overlay evaluation	• Bolster risk platform capabilities • Further develop sources of co-investment deal flow • Continue internal management feasibility study	• Expand proxy voting • Execute engagement priorities • Corporate governance policies review • Extend ESG scorecard across asset classes	• Explore co-investments across additional asset categories • Dedicated managed account (DMA) services provider RFP • Pursue founder's class opportunities

Strategic Initiatives: Example Projects

Initiatives	Enhance Operational Effectiveness	Optimize Investment Model	Maximize Stewardship and Ownership Rights	Strengthen Influence on Fees and Cost of Capital
Medium Term (2-4 years)	• Adopt dedicated managed account (DMA) service provider • Strengthen Investments Division culture • Enhance data and analytics capabilities across all asset categories • Redesign Board materials	• Evaluate factor-based fixed income strategies • Continue building private Real Assets program • Develop risk budgeting methodology	• Assess portfolio climate risk exposure • Refine manager ESG due diligence • Continue to promote diversity and inclusion initiatives • Author thought/white papers	• Consider alternative private market investment structures • Evaluate performance-based fees for liquid markets • Enhance fee reporting to include fee attribution on alpha
Long Term (5+ years)	• Further improve performance reporting • Expand portfolio company data analysis • Enhance compliance monitoring program	• Evaluate private equity replication strategies • Research alpha/beta investment approaches • Explore investment alliances with like-minded institutions	• Integrate climate-aware strategic asset allocation • Increase influence with policy makers • Consider implications of different investment models	• Align staffing with evolving investment model • Consider seeding spin-out managers • Optimize cost of capital efficiency across asset categories

Prospective 2020 Calendar

Tentative Board of Investments and Committee Meetings

	January	February	March	April	May	June	July	August	September	October	November	December
Board of Investments	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Corporate Governance Committee			✓					✓		✓		
Credit and Risk Mitigation Committee					✓							✓
Equity: Public/Private Committee		✓				✓					✓	
Real Assets Committee				✓					✓			

Notes:
- Each committee meets at least two times
- Additional meetings would be scheduled on an as-needed basis

1st Quarter 2020 Preliminary Monthly Calendar View

FEBRUARY 2020	
Board of Investments:	
Category	**Subject**
Total Fund	Investment Procedure Manual I – Growth
Total Fund	4Q19 Trust and OPEB Performance Report
Total Fund	Meketa 4Q19 Trust and OPEB Performance Report
Total Fund	Offsite Planning I
Real Estate	Investment Recommendation (International)
Real Estate	Meketa Review on Manager Reconciliation
Real Estate	Appraisal Management Service Provider Recommendation
Private Equity	Investment Recommendation (x2)
Committee: Equity	
Category	**Subject**
Private Equity	Education
Private Equity	Investment Memorandum Redesign

MARCH 2020	
Board of Investments:	
Category	**Subject**
Total Fund	Offsite Planning II
Total Fund	Transition Management Minimum Qualifications
Total Fund	Benchmark Review
Total Fund	Recommendation to Accept the June 30, 2019 Valuation
Global Equity	Internal Management Consultant Report
Global Equity	Investment Recommendation (Factor Based)
Real Estate	Investment Recommendation (International)
Real Estate	Performance Review
Private Equity	Investment Recommendation
Corporate Governance	SEC Comment Letter Report
Corporate Governance	Corporate Governance Ballot Report
Committee: Corporate Governance	
Category	**Subject**
Corporate Governance	Principles and Policy Review

* Please note that certain listed items are subject to Board approval

2nd Quarter 2020 Preliminary Monthly Calendar View

APRIL 2020	
Board of Investments:	
Category	**Subject**
Total Fund	Investment Procedure Manual II - IG/HF/Credit
Total Fund	IPS Update
Total Fund	OPEB IPS Update
Total Fund	Active Overlay Recommendation
Total Fund	Securities Lending Annual Review
Real Assets	Investment Recommendation (Open End Infrastructure Fund)
Private Equity	Investment Recommendation
Corporate Governance	Corporate Governance Principles and Review Approval
Global Equity	Investment Recommendation
Committee: Real Assets	
Category	**Subject**
Real Estate	Structure Review
Real Assets	Education – TBD

MAY 2020	
Board of Investments:	
Category	**Subject**
Total Fund	1Q2020 Trust and OPEB Performance Report
Total Fund	Meketa 1Q2020 Trust and OPEB Performance Report
Total Fund	Custody Bank Search Discussion
Total Fund	Securities Lending Search Recommendation
Hedge Funds	Investment Recommendation
Real Estate	Structure Review
Real Estate	Investment Recommendation
Private Equity	Investment Recommendation (x2)
Real Assets	Natural Resources Investment Recommendation
Committee: Credit and Risk Mitigation	
Category	**Subject**
Credit	Education – TBD

JUNE 2020	
Board of Investments:	
Category	**Subject**
Total Fund	Investment Procedure Manual III - RE/RA
Total Fund	Alternative Assets Administrator Recommendation
Total Fund	Total Fund Performance Provider Recommendation
Credit	High Yield Search MQs
Corporate Governance	Corporate Governance Ballot Report
Private Equity	Investment Recommendation
Private Equity	Performance Review I
Real Assets	Infrastructure Investment Recommendation
Hedge Funds	Investment Recommendation
Hedge Funds	Performance Review
Legal	Code of Ethical Conduct Periodic Update
Global Equity	Internal Management Update
Committee: Equity	
Category	**Subject**
Global Equity	Emerging Managers Search MQ’s

* Please note that certain listed items are subject to Board approval

3rd Quarter 2020 Preliminary Monthly Calendar View

JULY 2020

Category	Subject
Board of Investments:	
Total Fund	***Board Offsite***
Real Estate	4Q 2019 Performance Review
Private Equity	Investment Recommendation
Real Assets	Natural Resources Investment Recommendation
Global Equity	Emerging Managers Search MQ's
Committee:	
Category	**Subject**

AUGUST 2020

Category	Subject
Board of Investments:	
Total Fund	Revised Risk Reports - Preview
Total Fund	2Q2020 Trust and OPEB Performance Report
Total Fund	Meketa 2Q2020 Trust and OPEB Performance Report
Total Fund & OPEB	Strategic Asset Allocation Study
Global Equity	Internal Management Update
Private Equity	Investment Recommendation
Real Assets	Infrastructure Investment Recommendation
Hedge Funds	Dedicated Managed Account Service Provider Recommendation
Committee: Corporate Governance	
Category	**Subject**
Corporate Governance	Engagement Initiatives Review and Next Steps

SEPTEMBER 2020

Category	Subject
Board of Investments:	
Total Fund	Consultant Self Assessments
Total Fund	Transition Management
Total Fund & OPEB	Strategic Asset Allocation Study
Private Equity	Investment Recommendation
Real Assets	Natural Resources Investment Recommendation
Corporate Governance	Corporate Governance Ballot Report
Real Estate	Investment Recommendation
Committee: Real Assets	
Category	**Subject**
Real Estate	International Implementation Plan
Real Estate	Education – TBD
Real Assets	Structure Review

* Please note that certain listed items are subject to Board approval

4th Quarter 2020 Preliminary Monthly Calendar View

OCTOBER 2020	
Board of Investments:	
Category	**Subject**
Total Fund & OPEB	Strategic Asset Allocation Study
Total Fund	Risk Education
Private Equity	Investment Recommendation
Real Assets	Structure Review
Real Estate	International Implementation Plan
Hedge Funds	HF Emerging Manager Program Separate Account Manager Recommendation
Committee: Corporate Governance	
Category	**Subject**
Corporate Governance	Proxy Voting Results and Trends FY2020
Corporate Governance	PRI Assessment Results and ESG Integration Update
Corporate Governance	Proxy Voting Research and Voting Platform RFP

NOVEMBER 2020	
Board of Investments:	
Category	**Subject**
Total Fund & OPEB	Strategic Asset Allocation Study
Total Fund	3Q2020 Trust and OPEB Performance Report
Total Fund	Meketa 3Q2020 Trust and OPEB Performance Report
Real Estate	Investment Recommendation
Private Equity	Investment Recommendation
Real Assets	Infrastructure Investment Recommendation
Corporate Governance	Corporate Governance Ballot Report
Corporate Governance	Proxy Voting Research and Voting Platform RFP
Committee: Equity	
Category	**Subject**
Private Equity	Structure Review
Private Equity	Education – TBD

DECEMBER 2020	
Board of Investments:	
Category	**Subject**
Total Fund & OPEB	Strategic Asset Allocation Study
Total Fund	AB2833/Investment Fee Validation Review
Total Fund	Derivatives Procedures
Global Equity	Investment Recommendation (Emerging Managers)
Credit	High Yield Search Recommendation
Private Equity	Structure Review
Private Equity	Investment Recommendation
Real Estate	Performance Review
Hedge Funds	Investment Recommendation
Committee: Credit and Risk Mitigation	
Category	**Subject**
Credit	Education – TBD
Hedge Fund	Education – TBD

* Please note that certain listed items are subject to Board approval

December 20, 2019

TO: Trustees – Board of Investments

FROM: Ted Wright, CFA, FRM, PRM, CAIA TW
Principal Investment Officer

Vache Mahseredjian, CFA, CAIA, FRM, ASA VM
Principal Investment Officer

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **EMERGING MANAGER POLICY REVIEW—PART 3**

This is the third in a series of presentations intended to review and revise LACERA's Emerging Manager Policy (EMP). At the April 2019 BOI meeting, Meketa began by reviewing the regulatory framework that governs EMPs in California, and presented statistics on the size and performance of emerging managers in public and private markets. Based on feedback and direction from the Board, Meketa fine-tuned its analysis and returned at the June BOI meeting with deliberations on the policy's objectives, the definition of emerging managers, and specific considerations for different asset classes. Staff has taken guidance provided by the Trustees at the April and June meetings, as well as subsequent discussions, to develop—in conjunction with Meketa—the attached draft EMP.

The proposed policy **(Attachment 1)** is condensed into six sections. **Section I** emphasizes that all LACERA policies, the EMP included, are intended to help achieve LACERA's mission to "Produce, Protect, and Provide the Promised Benefit." The EMP is also consistent with LACERA's Investment Policy Statement (IPS), the Code of Ethical Conduct and the Conflict of Interest Code, as well as the fundamental concepts of loyalty and prudence.

The EMP exemplifies the high value LACERA places on diversity and inclusion. However, LACERA's focus on diversity and inclusion extends beyond the EMP and permeates the entire LACERA portfolio. As stated in the IPS, LACERA believes that hiring diverse managers, inclusive of varied backgrounds, leads to improved outcomes.

Section II, Purpose and Objective, expands on the improved outcomes by clearly stating that the EMP's objective is to enhance the Total Fund's risk-adjusted return. This section also describes the balance between the potential for higher returns from investing with emerging managers, and the potentially higher risks associated with less established firms.

Section III addresses the definition of emerging managers and notes that the definition will be tailored to each asset class and will adapt over time in order to reflect the manager universe prevailing at the time of each search. This section also makes clear that emerging managers are held to the same high performance standards that apply to all of LACERA's external managers.

Section IV identifies another flexible aspect of the policy—Structure—which can be implemented either via a direct program or by employing a fund-of-funds manager. **Section V** provides a mechanism for evaluating emerging managers to determine if they qualify for graduation from emerging status. The final section, **Section VI**, outlines the monitoring and reporting of emerging managers.

Staff worked closely with Meketa in drafting this policy, and Meketa's concurrence memo is **Attachment 2**. Staff and Meketa will incorporate any feedback provided at the January meeting into a revised draft to be presented in February. Note that the prior EMP is also attached **(Attachment 3)** for reference.

<u>Attachments:</u>

Attachment 1: Proposed New Emerging Manager Policy (from 12/11/19 BOI meeting)
Attachment 2: Meketa Concurrence Memo
Attachment 3: Prior Emerging Manager Policy

Noted and Reviewed:

____
Jonathan Grabel
Chief Investment Officer

ATTACHMENT 1

Emerging Manager Policy

I. Introduction

LACERA's mission is to "Produce, Protect, and Provide the Promised Benefit" for all its members. In order to achieve this mission, LACERA has developed various policies to guide its investments. These policies are governed by the California constitution and by various statutes, and embedded within the regulations are fundamental concepts of loyalty and prudence. The duty of loyalty means that Board members and staff must act in the sole interest of LACERA's members and beneficiaries; the duty of prudence requires that we discharge our responsibilities with skill, care, and diligence—and that we diversify the portfolio in order to minimize the risk of loss and maximize the expected rate of return.

The Emerging Manager Policy ("Policy") furthers the investment beliefs, philosophy, and strategies outlined in LACERA's Investment Policy Statement (IPS), adheres in all respects to the Code of Ethical Conduct and the Conflict of Interest Code, and complies with all applicable governing regulations.

LACERA values diversity and inclusion. These values permeate the entire LACERA portfolio and extend beyond the emerging manager program. As stated in the IPS, LACERA believes that effectively accessing and managing diverse talent—inclusive of varied backgrounds, age, experience, race, sexual orientation, gender, ethnicity, and culture—leads to improved outcomes. LACERA expects all its external asset managers and third party providers to respect LACERA's values of diversity and inclusion and to reflect them in their own organizations.

II. Purpose and Objective

The objective of LACERA's Emerging Manager Policy is to enhance the total Fund's risk-adjusted return. The Policy seeks a proper balance between the potential for higher returns available to select emerging managers, and the higher risks—both investment-related and operational—associated with less established firms.

The Policy provides LACERA an opportunity to invest in promising investment management organizations early in their development. Investing with managers that have fewer clients, smaller assets, or a short track record may provide LACERA access to investment strategies that larger, more established managers might overlook. Smaller investment management firms may generate attractive performance, net-of-fees, because of increased market flexibility associated with smaller asset bases. In addition, first- or second-time funds may outperform later funds in private markets. Furthermore, investing early in the lifecycle of select emerging managers may carry benefits that include lower fees (founder's terms), future capacity rights, and preferred economics such as a share of future revenues.

Counterbalancing the attractive returns from investing with emerging managers is a greater return dispersion and the possibility of greater investment and operational risk--particularly in areas such as compliance, portfolio administration, cybersecurity, business continuity, and succession planning.

Emerging managers are highly motivated to perform well for early investors because doing so can be crucial to their firm's growth. As a result, institutional investors such as LACERA may have a greater alignment of interests with emerging managers than with more established ones.

III. Emerging Manager Definition

Emerging investment managers are independent firms that have less substantial assets under management or may lack a long-term investment performance record. LACERA is interested in emerging managers that have strong alignment of interest with their investors and expects principals of the firm to hold at least 66% of the ownership interest of the company. Specific requirements for AUM and length of track record are tailored for each asset class and updated for each mandate to take into account the composition of the manager universe prevailing at the time a search is conducted.

Emerging managers are held to the same high performance standards that apply to all of LACERA's external managers. In addition, LACERA conducts an ongoing assessment of all external managers' commitment to, adherence with, and track record of accessing and retaining diverse and inclusive workforces. Emerging managers may include, but are not limited to, investment managers that are owned by individuals of diverse backgrounds that have traditionally been underrepresented in the financial services industry. More broadly, all else equal, LACERA prefers firms that are committed to and have established a demonstrated track record of diversity and inclusion throughout the firm's workforce, inclusive of investment professionals.

IV. Structure

LACERA may hire emerging managers either directly or by employing a fund-of-funds manager skilled at sourcing emerging managers. Either type of mandate must adhere to LACERA's defined procurement procedures and requires approval by the Board of Investments. Investment strategies managed by emerging managers must be suitable for LACERA's portfolio and fit within the approved strategic asset allocation and asset class structure, as well as the portfolio's risk and liquidity constraints.

For each asset class, LACERA conducts periodic structure reviews that incorporate specific criteria and recommended allocation ranges for emerging managers (see "Attachment A" for current BOI-approved ranges). The structure reviews take into consideration the opportunities and risks of the asset class and are conducted in consultation with LACERA's applicable investment consultants. The implementation of any emerging manager program must advance the principles, objectives, and initiatives established within the asset class structure review.

V. Graduation

Selected emerging managers will be reviewed in accordance with their respective asset class policies to determine if they continue to meet the requirements of the emerging manager program or if they qualify for graduation from emerging status.

VI. Monitoring and Reporting

LACERA staff will monitor the emerging managers on an ongoing basis and periodically report to the Board on potential issues, performance, and significant developments.

ATTACHMENT A

Emerging Manager Allocation Ranges[1]

	Minimum	Maximum
U.S. Equities	0%	5%
Fixed Income	0%	4%
Real Estate	0%	20%
Private Equity	0%	7%
Hedge Funds[2]	0%	10%
Total Fund	0%	6%

Document History
Revised August 8, 2016
Revised November 19, 2014
Revised: November 20, 2013
Revised: November 13, 2012
Revised: October 31, 2012
Revised: July 8, 2009
Revised: March 11, 2009
Revised September 13, 2006
Adopted June 13, 2001

[1] The allocation ranges shown are the most recent numbers approved by the BOI.
[2] The BOI approved a $200 million allocation in September of 2019, and $200 million is approximately 10% of the target Hedge Fund allocation.

MEMORANDUM

To: LACERA Board of Investments

From: Stephen McCourt, Leandro Festino, Tim Filla
Meketa Investment Group

Date: December 11, 2019

Re: Emerging Manager Policy

BACKGROUND

LACERA's Emerging Manager Policy was adopted by the Board of Investments in 2001 and most recently revised in 2014. At the April and June Board of Investment Meetings, Meketa and LACERA staff discussed potential updates to the Emerging Manager Policy with the Board. Based on those discussions, staff and Meketa developed the policy revisions being presented today.

ROLE OF EMERGING MANAGERS

Emerging Managers are defined broadly as small, independent, and relatively new investment managers. Investing with Emerging Managers provides LACERA the opportunity to invest with promising managers in the early stages of development and to consider a broader set of managers that would otherwise be limited by certain constraints such as length of track record. Identifying and investing with these early stage investment firms has the potential to provide multiple benefits for LACERA, such as access to return streams which may not be accessible or meaningful for managers with larger asset bases or the ability to secure preferential fees and future capacity rights. Independent ownership structures provide a strong alignment of interests between Emerging Managers and LACERA.

SUMMARY OF REVISIONS RECOMMENDATION

The overall goal of revising the Emerging Manager Policy is similar to other governance initiatives undertaken at LACERA, to streamline, harmonize, and elevate policy while shifting procedure and specific processes to other more specific documents such as asset class manuals or structure reviews. The main changes are outlined below:

1. The revised policy adds an introduction section which provides context for the policy and its implementation and also elevates LACERA's belief

from the Investment Policy Statement that "effectively accessing and managing diverse talent—inclusive of varied backgrounds, age, experience, race, sexual orientation, gender, ethnicity, and culture—leads to improved outcomes."

2. The Purpose and Objective section has been expanded to include a primary objective to enhance risk adjusted returns and provide more detail on additional benefits such as preferential economics and future capacity rights.
3. All specific asset class criteria have been removed in favor of the more dynamic approach of delineating those during structure reviews.
4. A section on Graduation replaces more proscriptive language previously contained in the Qualifications for Promotional Opportunities section.

Meketa has reviewed the revised Emerging Manager Policy. We believe the revised policy enhances LACERA's efforts to access Emerging Managers by removing specific constraints from the policy and allowing for the development of guidelines, qualifications, and procedures during asset class specific structure reviews. Additionally, the revised policy more clearly states the objectives of utilizing Emerging Managers within LACERA's investment portfolio and better highlights the importance that LACERA places on diversity and inclusion. We look forward to discussing this matter with you at the December 11th meeting and using your feedback to further refine the Policy.

SM/LF/TF/srt

ATTACHMENT 3

EMERGING MANAGER POLICY[1, 2]

Emerging Manager Definition

Emerging investment managers are independent firms that may not have substantial assets under management (generally, less than $2 billion) nor a long-term investment performance record (generally, less than five years). Emerging investment managers can include, but are not limited to, minority-, women- and disabled veteran-owned organizations.

Purpose and Objective

The objective of LACERA's Emerging Manager Policy (Policy) is to gain early access to smaller investment management organizations. LACERA recognizes that smaller investment management firms may generate superior performance because of increased market flexibility associated with smaller asset bases. The Policy provides LACERA an opportunity to identify promising investment management organizations in their early development.

The application of this Policy to the various asset classes is discussed below.

U.S. Equity

A "direct investment program" strategy was selected as the most effective way to implement LACERA's U.S. equity emerging manager policy. LACERA's investment staff is responsible for sourcing, monitoring and evaluating the performance of the emerging managers. The following defines staff's responsibilities:

- Maintaining an extensive emerging manager database that meets the criteria outlined in this Policy, and continuously evaluating prospective managers.
- Monitoring each emerging manager participating in LACERA's U.S. equity emerging manager program for adherence to LACERA's investment guidelines.
- The Board of Investments shall select emerging managers that meet the minimum qualifications listed below. (The Chief Investment Officer is authorized to approve variances from the emerging manager selection criteria on a case-by-case basis. Any waivers must be subsequently reported to the Board of Investments.)
    1. The emerging manager is a registered investment adviser under the Investment Advisers Act of 1940.
    2. No person or entity, other than the principals or employees of the emerging manager, shall own more than a **forty-nine percent (49%) interest** in the emerging manager.
    3. LACERA prefers emerging managers who currently comply with the performance presentation standards set forth in *Global Investment Performance Standards (GIPS)* of the CFA Institute. If the emerging manager does not currently follow the GIPS

[1] Emerging manager (9-13-01).doc.

[2] Adopted by the Board of Investments on June 13, 2001.

standards, then the emerging manager must make a good faith effort to comply with such standards within **one (1**) **year** of hire.

4. The portfolio managers which the emerging manager assigns to manage the LACERA portfolio must have an average of at least **five (5) years** of verifiable investment experience managing portfolios containing a similar investment style as the mandate for which the emerging manager is being hired by LACERA.
5. The emerging manager must have at least **$25 Million** of assets under management in the same investment style as the assets to be managed for LACERA before any allocation of LACERA Assets to the emerging manager.
6. Each emerging manager must have no more than **$2 Billion** of total assets under direct management prior to selection.
7. LACERA investment staff shall review with the CIO the rationale for retaining any emerging manager who reaches a level of **$3 Billion** of total assets under management, inclusive of its portion of the LACERA Assets, at any time during the emerging manager's participation in the program.
8. The emerging manager must have direct responsibility for managing assets of the same investment style it will manage for LACERA for at least **three (3) other** clients besides LACERA.
9. LACERA's Assets must comprise no more than **forty percent (40%)** of the total assets managed by the emerging manager.
10. The assets for any single client (other than LACERA) must comprise no more than **fifty percent (50%)** of the total assets managed by the emerging manager.

Non U.S. Equity

A "direct investment program" strategy was selected as the most effective way to implement LACERA's Non-U.S. equity emerging manager policy. LACERA's investment staff is responsible for sourcing, monitoring and evaluating the performance of the emerging managers. The following defines staff's responsibilities:

- Maintaining an extensive emerging manager database that meets the criteria outlined in this Policy, and continuously evaluating prospective managers.
- Monitoring each emerging manager participating in LACERA's Non-U.S. equity emerging manager program for adherence to LACERA's investment guidelines.
- The Board of Investments shall select emerging managers that meet the minimum qualifications listed below. (The Chief Investment Officer is authorized to approve variances from the emerging manager selection criteria on a case-by-case basis. Any waivers must be subsequently reported to the Board of Investments.)

1. The emerging manager is a registered investment adviser under the Investment Advisers Act of 1940.

2. No person or entity, other than the principals or employees of the emerging manager, shall own more than a **forty-nine percent (49%) interest** in the emerging manager.
3. LACERA prefers emerging managers who currently comply with the performance presentation standards set forth in *Global Investment Performance Standards (GIPS)* of the CFA Institute. If the emerging manager does not currently follow the GIPS standards, then the emerging manager must make a good faith effort to comply with such standards within **one (1**) **year** of hire.
4. The portfolio managers which the emerging manager assigns to manage the LACERA portfolio must have an average of at least **five (5) years** of verifiable investment experience managing portfolios containing a similar investment style as the mandate for which the emerging manager is being hired by LACERA.
5. The emerging manager must have at least **$25 Million** of assets under management in the same investment style as the assets to be managed for LACERA before any allocation of LACERA Assets to the emerging manager.
6. Each emerging manager must have no more than **$2 Billion** of total assets under direct management prior to selection.
7. LACERA investment staff shall review with the CIO the rationale for retaining any emerging manager who reaches a level of **$3 Billion** of total assets under management, inclusive of its portion of the LACERA Assets, at any time during the emerging manager's participation in the program.
8. The emerging manager must have direct responsibility for managing assets of the same investment style it will manage for LACERA for at least **three (3) other** clients besides LACERA.
9. LACERA's Assets must comprise no more than **forty percent (40%)** of the total assets managed by the emerging manager.
10. The assets for any single client (other than LACERA) must comprise no more than **fifty percent (50%)** of the total assets managed by the emerging manager.

Fixed Income

U.S. fixed income emerging manager candidates may arise in two distinctive areas: more traditional fixed income and specialized non-traditional areas. The most feasible method of gaining access to fixed income emerging managers is by identifying those firms with unique investment capabilities that may potentially complement the existing portfolio structure. Examples include, but are not limited to, investment firms that specialize in non-traditional fixed income sectors or that utilize investment styles complementary to those employed by existing managers. Non-traditional fixed income sectors include, but are not limited to, convertible bonds, bank loans, private placements and international high yield securities.

For initial searches, fixed income emerging managers will be required to meet the following minimum investment criteria. Fixed income emerging managers that meet these minimum qualifications shall be considered search candidates.

- Emerging manager is a registered investment adviser under the Investment Advisers Act of 1940,or must provide adequate explanation as to why they are exempt from registration.
- No person or entity, other than the principals or employees of an emerging manager, shall own more than a **forty-nine percent (49%) interest** of the organization.
- LACERA prefers emerging managers who currently comply with the performance presentation standards set forth in the Global Investment Performance Standards (GIPS) of the CFA Institute. If the emerging manager does not currently follow the GIPS standards, then the emerging manager must make a good faith effort to comply with such standards within **one (1) year** of date of hire.
- The firm's portfolio manager(s) must have an average of at least **five (5) years** of verifiable investment experience managing portfolios containing a similar investment style as that in the LACERA Assets to be allocated to the emerging manager.
- The emerging manager must have at least **$100 Million** of assets under management in the same investment style to be managed for LACERA.
- The emerging manager must have no more than **$2 Billion** of total assets under direct management prior to selection. The emerging manager's total assets under management should not exceed **$3 Billion subsequent** to funding.
- The emerging manager must have direct responsibility for managing assets utilizing the same investment style it will manage for LACERA for at least **three (3) other** Institutional clients besides LACERA.
- LACERA's Assets must comprise no more than **thirty-three percent (33%)** of the total assets managed by the emerging manager.
- The assets of any single client (other than LACERA) must comprise no more than **fifty percent (50%)** of the total assets managed by the emerging manager.

Real Estate[3]
An emerging manager must meet all the following requirements:

- The emerging manager must be a registered investment adviser under the Investment Advisers Act of 1940, or must provide adequate explanation as to why it is exempt from registration
- No person or entity, other than the principals or employees of the emerging manager, shall own more than **forty-nine (49%)** of the firm.
- If the emerging manager does not currently follow the GIPS performance presentation standards, then the emerging manager must make a good faith effort to comply with such standards within **one (1) year** of date of hire.

[3] Adopted by the Board of Investments on September 13, 2006.

- The firm's portfolio manager(s) must have at least **five (5) years** of verifiable investment experience managing portfolios in an investment style similar to the LACERA mandate.
- The emerging manager must have at least **$100 Million** of assets under management in the same investment style as the LACERA mandate.
- The emerging manager must have no more than **$2 Billion** of total assets under direct management prior to selection.
- The emerging manager's total assets under management should not exceed **$4 Billion** subsequent to funding.

Staff anticipates that emerging managers will benefit from the investment track record established in partnership with LACERA. As such, emerging managers and their allocations shall be reviewed periodically to determine if sufficient growth and/or track record exist to allow the firm and its investments to be transferred to an appropriate style group within the traditional Real Estate Portfolio. Such movement would be initiated by a recommendation from Staff based on one or both of the following events:

- Three-year (3) track record exceeding LACERA's return requirements.
- Total assets managed in excess of $2 billion and two-year (2) track record exceeding LACERA's return requirements.

The timing of capital raises by managers may not coincide with times when LACERA has capital available for the Emerging Manager Program. Therefore, Staff will manage the ten percent (10%) allocation (10% of the Targeted Real Estate Portfolio) within the range of zero percent (0%) to twenty percent (20%) to allow for over or under weighting emerging manager exposure based on market opportunities.

Private Equity

The objective of the private equity Emerging Manager Program is to diversify the portfolio by partnering with investment managers that are not part of the core program, while generating performance results consistent with LACERA's private equity class return expectation—the Russell 3000 plus 300 to 500 basis points. The Emerging Manager Program will provide LACERA the ability to invest in smaller, lesser-known firms and in some cases first time funds.

A "manager-of-manager separate account" strategy was selected as the most effective way to implement LACERA's private equity Emerging Manager Policy because of the resources required to manage this program. The following defines the manager-of-manager's ("Manager") responsibilities:

- Maintain a database of emerging managers that meet the criteria outlined in this policy, and continuously evaluate prospective managers.
- Select managers within the policy investment guidelines.
- Monitor the performance of each manager in the portfolio.

- Provide LACERA quarterly reports that include, but are not limited to, a list of funds selected, performance results of each fund with benchmark comparison, and commentary on the performance of each fund.

The following factors will be considered when selecting an emerging private equity investment:

- To reduce the risk of the emerging manager portfolio, investments will be diversified by vintage year[4] of investment, location of general partner, industry, and investment category. Investment categories include early and late stage venture capital, mezzanine financing, and leveraged buyouts.
- The minimum size of investment made shall be **$5 million**, while the maximum size of investment made shall be **$20 million**.
- LACERA's share in a single partnership, once the partnership has closed to new investments shall not exceed 10% of that partnership's total commitments from all limited partners.
- The performance objective for this program, as measured by IRR (Internal Rate of Return), will be an annualized return of 300 to 500 basis points over the Russell 3000 Index over a 10-year time frame. This objective is net of all partnership fees and expenses.
- The general partner must have demonstrated private equity expertise in sourcing deals, deploying capital, and successfully implementing exit strategies.
- The key persons of the General Partner must have at least five years of verifiable private equity expertise in sourcing deals, deploying capital, and successfully implementing exit strategies.
- No person or entity, other than the principals or employees of the emerging manager, shall own more than **forty-nine (49%)** interest in such emerging manager.
- The fund must be the General Partner's first, second, or third institutional fund.
- The fund cannot exceed **$300 million** in capital commitments if it is a venture fund or **$750 million** in capital commitments if it is a corporate finance-type or buyout fund.

Emerging Manager Qualifications for Promotional Opportunities

Opportunities for larger mandates may occur for emerging managers when, from time to time, LACERA evaluates asset class structure and/or conducts portfolio strategy reviews. Prior to LACERA conducting an external search for an active manager, managers participating in LACERA's emerging manager program that meet the following minimum objective investment criteria will be considered short-list candidates:

- The product under consideration must have a minimum five-year performance history at that firm.[5] Exceptions to this may occur if the manager has a clearly established

[4] A private equity partnership vintage year is defined as the year of first investment or capital call.
[5] All returns must be in compliance with the Global Investment Performance Standards (GIPS) of the CFA Institute. Performance history must be reflective of institutional accounts.

performance record from their previous employment or manages a related, similar investment product with longer performance history.

- For Equity and Fixed Income, the emerging manager's five-year net-of-fee[6] performance must exceed LACERA's passive alternative[7]; and, the five-year (gross-of-fees) performance must rank above median in an appropriate peer universe[8] comparison. For Real Estate, the emerging manager's return must exceed LACERA's return objective as outlined in the Equity Real Estate Strategic Plan.
- The manager's three-year rolling return over the most recent five-years must exceed LACERA's passive alternative for 60% of the available observations.
- The manager's three-year performance history must be built on an asset base that is equivalent to the proposed size of the assignment.
- LACERA comprises no more than 25% of the manager's total assets under management.
- The key individuals responsible for developing the performance history must still be active in the investment management process when the search is conducted.
- A representative portfolio for the product under consideration must have fundamental characteristics generally associated with the style being considered.

Asset Allocations

TABLE 1

	Minimum	Maximum
U.S. Equities	0%	5%
Non-U.S. Equities	0%	5%
Fixed Income	0%	4%
Real Estate[9]	0%	20%
Private Equity[10]	0%	7%
Total Fund[11]	0%	6%

[6] Fees will be calculated using the manager's regular fee schedule.
[7] Passive alternatives for Public Markets (i.e., Equities, International Equities and Fixed Income) are any benchmark authorized by the Board of Investments or any benchmark utilized by an active manager within these asset classes.
[8] Peer universe data will be obtained for both equity and fixed income mandates from industry recognized manager databases such as Wilshire Associates Trust Universe Comparison Service, Russell/Mellon Analytical Services, or EVestment Alliance.
[9] Adopted by the Board of Investments September 13, 2006.
[10] Adopted by the Board of Investments August 10, 2016.
[11] Adopted by the Board of Investments August 10, 2016.

Manager Due Diligence

The Board recognizes that the objective manager selection criteria listed above, although important, are only a part of the manager evaluation process. Therefore, Staff and Consultant will conduct on-site manager review(s) to evaluate criteria that are not easily quantified and prepare a report to the Board of Investments for each emerging manager.

Revised: November 19, 2014
Reviewed: by R/E Committee August 13, 2014

L//.CERA

December 26, 2019

TO: Trustees – Board of Investments

FROM: Christopher J. Wagner CJW
Principal Investment Officer

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **PRIVATE EQUITY PORTFOLIO UPDATE**

On January 8, 2020, Jose Fernandez and Natalie Walker from LACERA's Private Equity Advisor, StepStone Group LP, are scheduled to deliver their annual LACERA private equity portfolio update to the Trustees. Key topics to be covered include: 1) private equity market update, 2) review of LACERA's private equity program structure and investment process, 3) performance, and 4) 2020 strategic planning.

The attached update report reflects the asset category structure changes approved at the December 2018, Board of Investments Meeting. Because of these changes, the performance of 10 active special situations sub-asset category investments has been moved to the credit and real assets asset categories. In addition, the new private equity benchmark, Morgan Stanley Capital International All Country World Index Investible Market Index ("MSCI ACWI IMI") plus 200 basis points, was implemented.

Key highlights as of June 30, 2019 include the following:

- Net Asset Value of $5.9 billion represents 10% of the total Fund's market value
- Net IRR of 16.1% since-inception places the portfolio in the second quartile of the Burgiss Private iQ universe for the years LACERA made commitments
- Ten-year portfolio return is 16.7% and above its benchmark (MSCI ACWI IMI plus 200 basis points) by 440 basis points
- Ten managers account for 50% of the portfolio's total exposure
- Portfolio is well-diversified by strategy, geography, industry, manager, and vintage year

Attachment

NOTED AND REVIEWED:

Jonathan Grabel
Chief Investment Officer

CW:mm

StepStone
inside private markets

LACERA Annual Board Presentation
Private Equity Portfolio Update

January 2020

Disclosure

IMPORTANT INFORMATION

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All valuations are based on current values calculated in accordance with StepStone's Valuation Policies and may include both realized and unrealized investments. Due to the inherent uncertainty of valuation, the stated value may differ significantly from the value that would have been used had a ready market existed for all of the portfolio investments, and the difference could be material. The long-term value of these investments may be lesser or greater than the valuations provided.

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Prospective investors should inform themselves and take appropriate advice as to any applicable legal requirements and any applicable taxation and exchange control regulations in the countries of their citizenship, residence or domicile which might be relevant to the subscription, purchase, holding, exchange, redemption or disposal of any investments. Each prospective investor is urged to discuss any prospective investment with its legal, tax and regulatory advisors in order to make an independent determination of the suitability and consequences of such an investment.

An investment involves a number of risks and there are conflicts of interest.

Each of StepStone Group LP, StepStone Group Real Assets LP and StepStone Group Real Estate LP is an investment adviser registered with the Securities and Exchange Commission ("SEC"). StepStone Group Europe LLP is authorized and regulated by the Financial Conduct Authority, firm reference number 551580. Swiss Capital Invest Holding (Dublin) Ltd ("SCHIDL") is an SEC Registered Investment Advisor. Such registrations do not imply a certain level of skill or training and no inference to the contrary should be made.

All data is as of June 30, 2019 unless otherwise noted.

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. ACTUAL PERFORMANCE MAY VARY.

Overview

I. Private Equity Market Update

II. LACERA's Private Equity Investment Process

III. Private Equity Portfolio Review

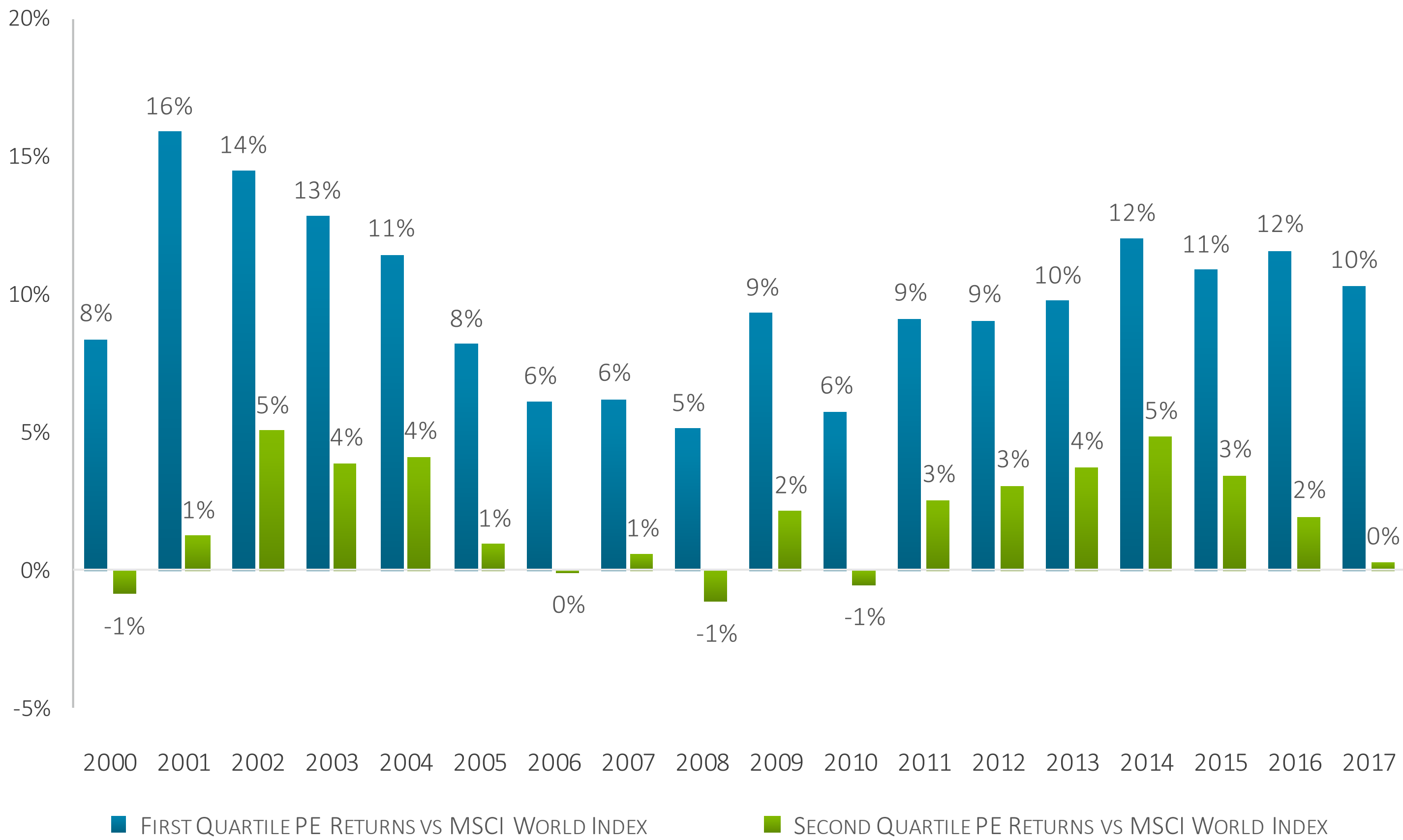
IV. 2020 Strategic Planning

I. Private Equity Market Update

Market Overview

PRIVATE EQUITY HAS DELIVERED ALPHA RELATIVE TO THE PUBLIC MARKETS

PRIVATE EQUITY DIRECT ALPHA



2009-14 ARITHMETIC AVERAGE		
AS OF	TOP Q	MEDIAN Q
2Q19	9.2%	2.6%
2Q18	6.3%	0.2%
Change in bps:	289 bps	240 bps

- StepStone has used the arithmetic average for 2009-2014 to focus on funds that are past their investment period and looking to harvest.
- Median private equity returns from 2009-2014 have performed well relative to public markets averaging 240 basis points (bps) above the public market.
- Institutional investors continue to include private markets as part of their allocation to diversify as well as to enhance overall returns.

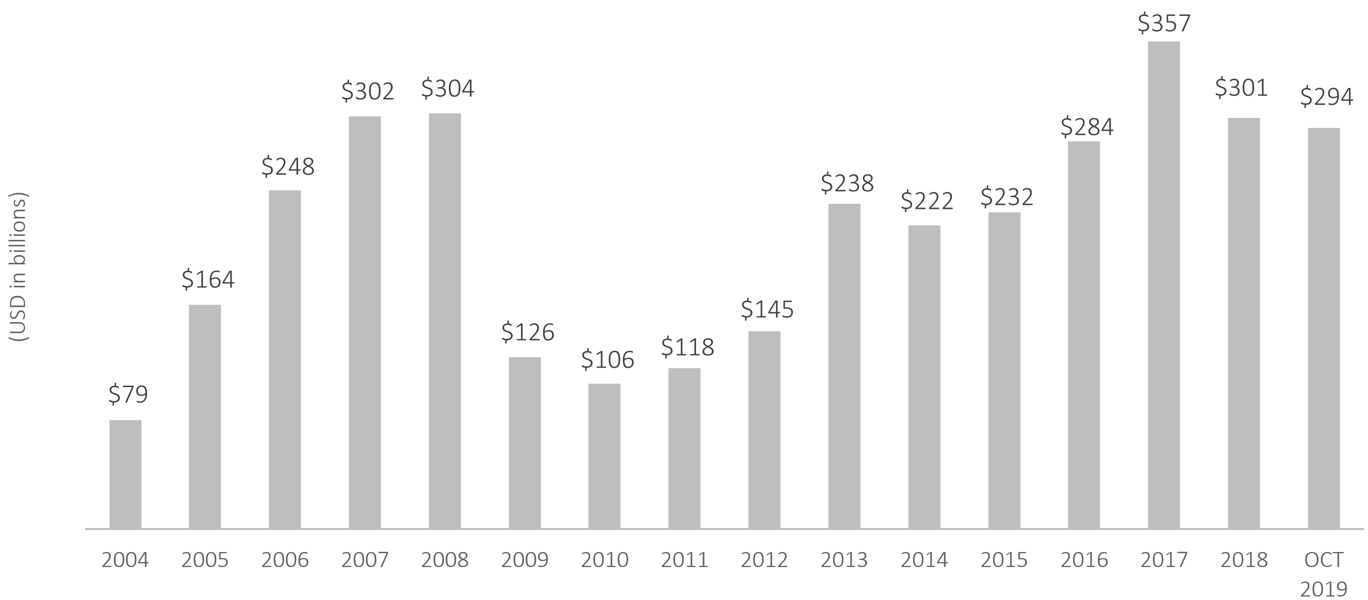
- Historically, Top Quartile Private Equity has outperformed public equities in each of the past 18 vintage years (for which returns are meaningful).

Private IQ, as of 6/30/19; PE Returns includes Generalists, Equity, and Distressed Funds. The Direct Alpha method formalizes the calculation of the exact alpha (in a continuous time log-return sense) that a PE portfolio has generated relative to the chosen reference benchmark; Data for 2018-2019 not considered relevant given early nature of those vintage years; The referenced indices are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

Market Overview

PRIVATE EQUITY BUYOUT FUNDRAISING NORMALIZED IN 2018 BUT IS ON PACE FOR ~ $370 BILLION IN 2019

GLOBAL PRIVATE EQUITY BUYOUT FUNDRAISING



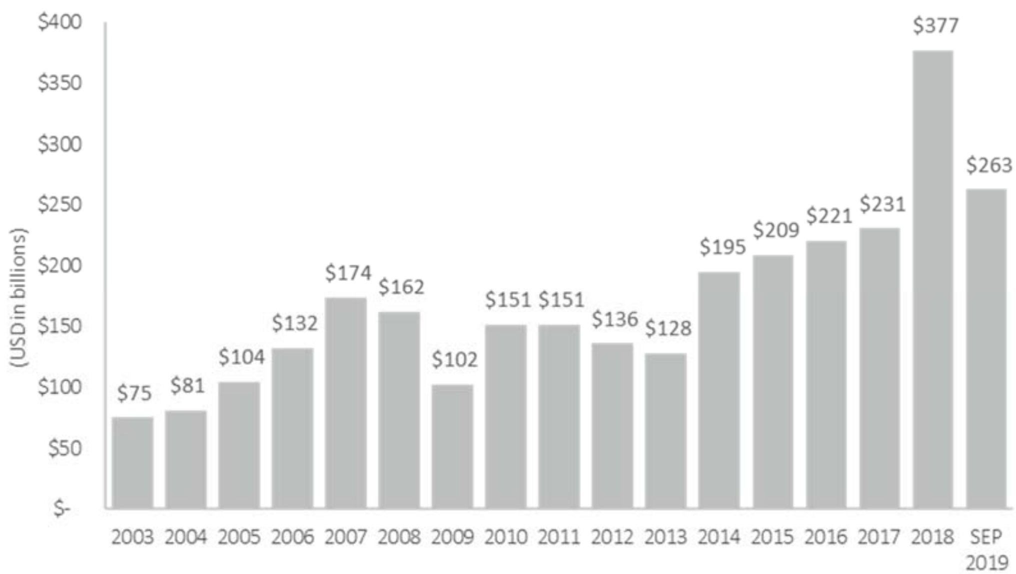
- Global PE Buyout funds have raised nearly $300 billion through mid-October.
- The fundraising market has become much more friendly to GPs, with funds becoming oversubscribed in very little time.
- This environment is impacting fund sizes as well as terms – more GPs are looking to change terms on new funds to be more GP favorable.

Preqin, StepStone analysis. Data subject to change as Preqin's database is continuously updated. Data is for funds labeled as Buyout, Balanced, Co-Investment, Co-Investment Multi-Manager, and Distressed Debt. Data is as of October 2019.

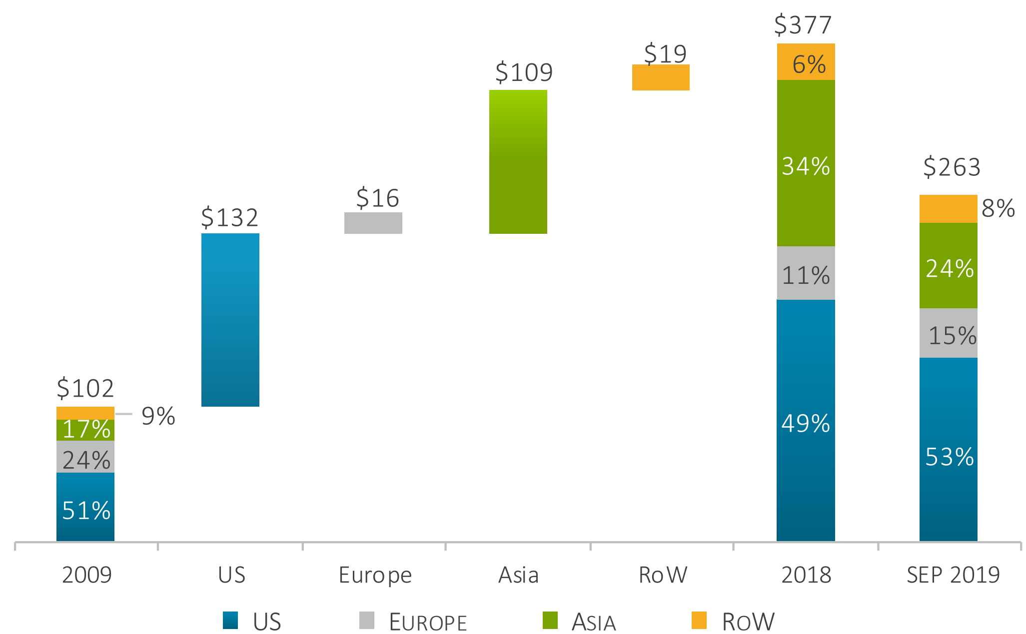
Market Overview

2018 WAS A RECORD INVESTMENT YEAR AND 2019 IS ON PACE TO SURPASS $300 BILLION

GLOBAL EQUITY INVESTED BY YEAR



EQUITY INVESTED BY REGION BRIDGE



ThomsonOne; data as of 9/30/19; Geography determined by company's headquarters.

Transaction Volume

U.S. TRANSACTION VOLUME IS ON PACE FOR ~$370 BILLION

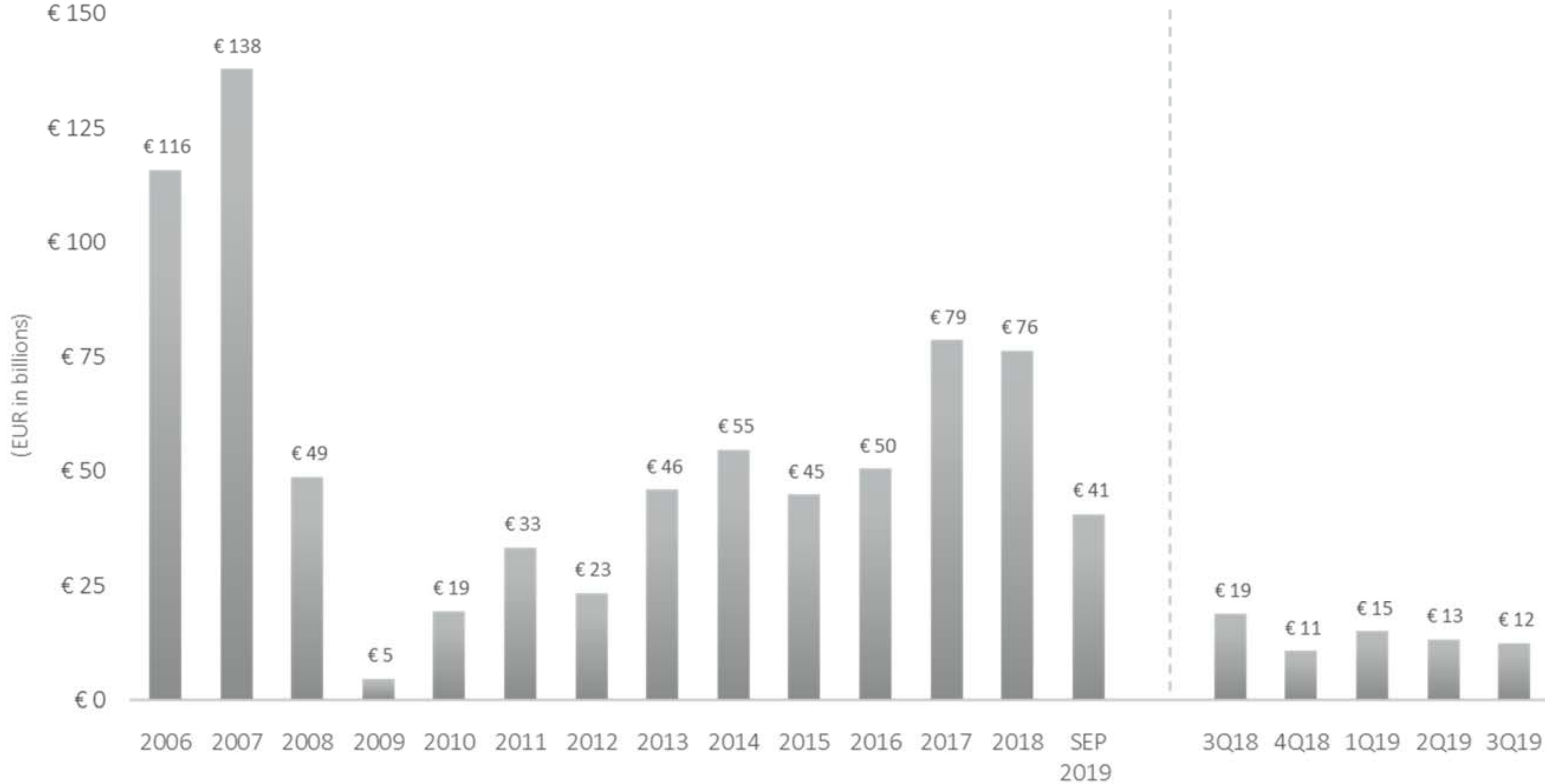
U.S. SPONSORED TRANSACTION VOLUME BY YEAR

Q3 2019 S&P LBO Review; S&P updates data and historical amounts are subject to change; Volume on this page includes all Total Sources (loans, secured debt, unsecured debt, sub debt, and equity) involved in any sponsored transaction, regardless of purpose.

Transaction Volume

EUROPEAN TRANSACTION VOLUME HAS GROWN, BUT IS STILL BELOW 2006-07

EUROPEAN SPONSORED TRANSACTION VOLUME BY YEAR



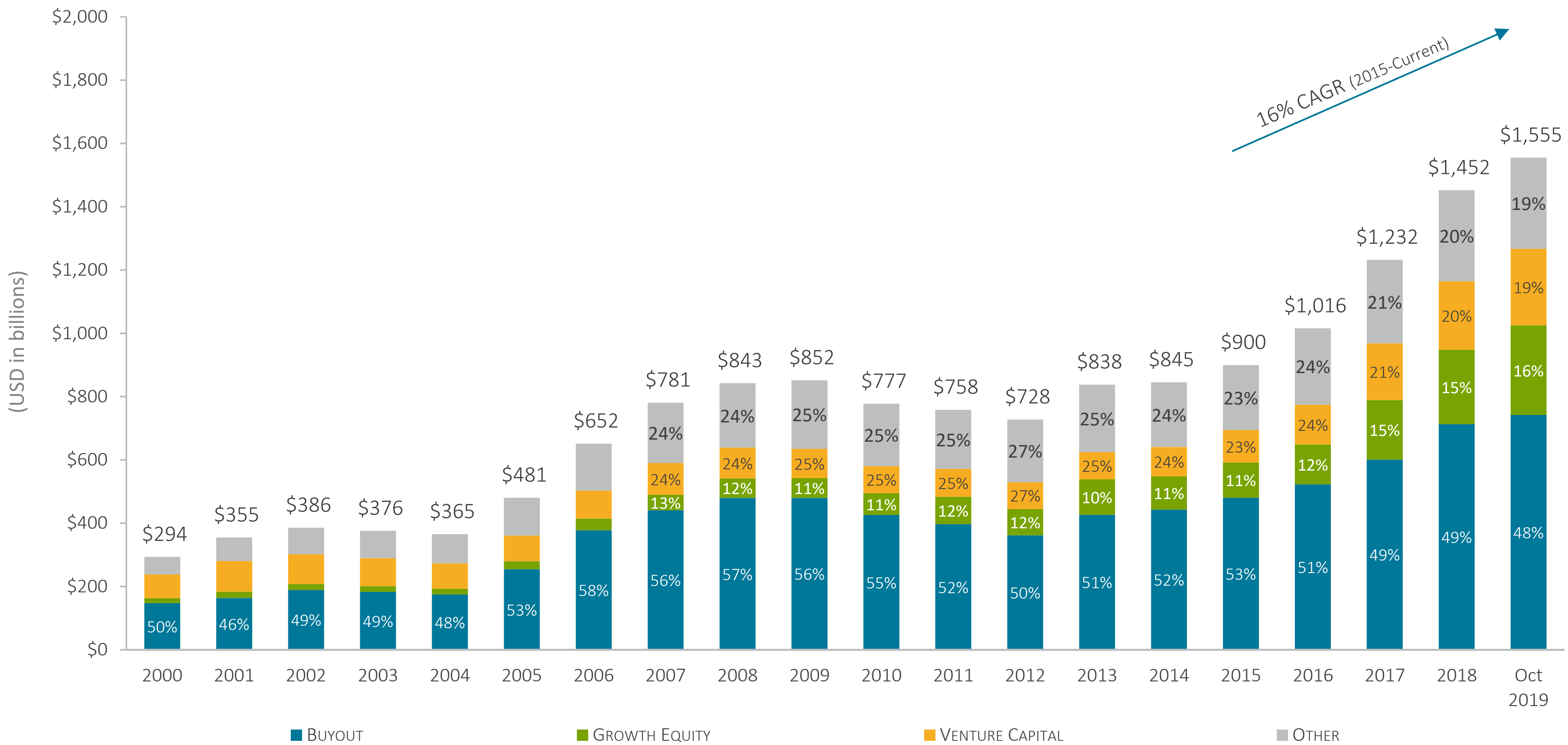
- European transaction volume year to date 2019 has slowed compared to 2017-2018.
- Low growth expectations are making it hard for LBO firms to identify attractive opportunities, thereby increasing competition – and prices – for quality assets.

The volume on this page reflects all sponsor-related activity, including buyouts, refinancing, and recaps. Q3 2019 S&P LBO Review

Dry Powder

CASH RESERVES KEPT ON HAND, "DRY POWDER", HAS INCREASED 73% SINCE YEAR-END 2015

PRIVATE EQUITY DRY POWDER – BY STRATEGY

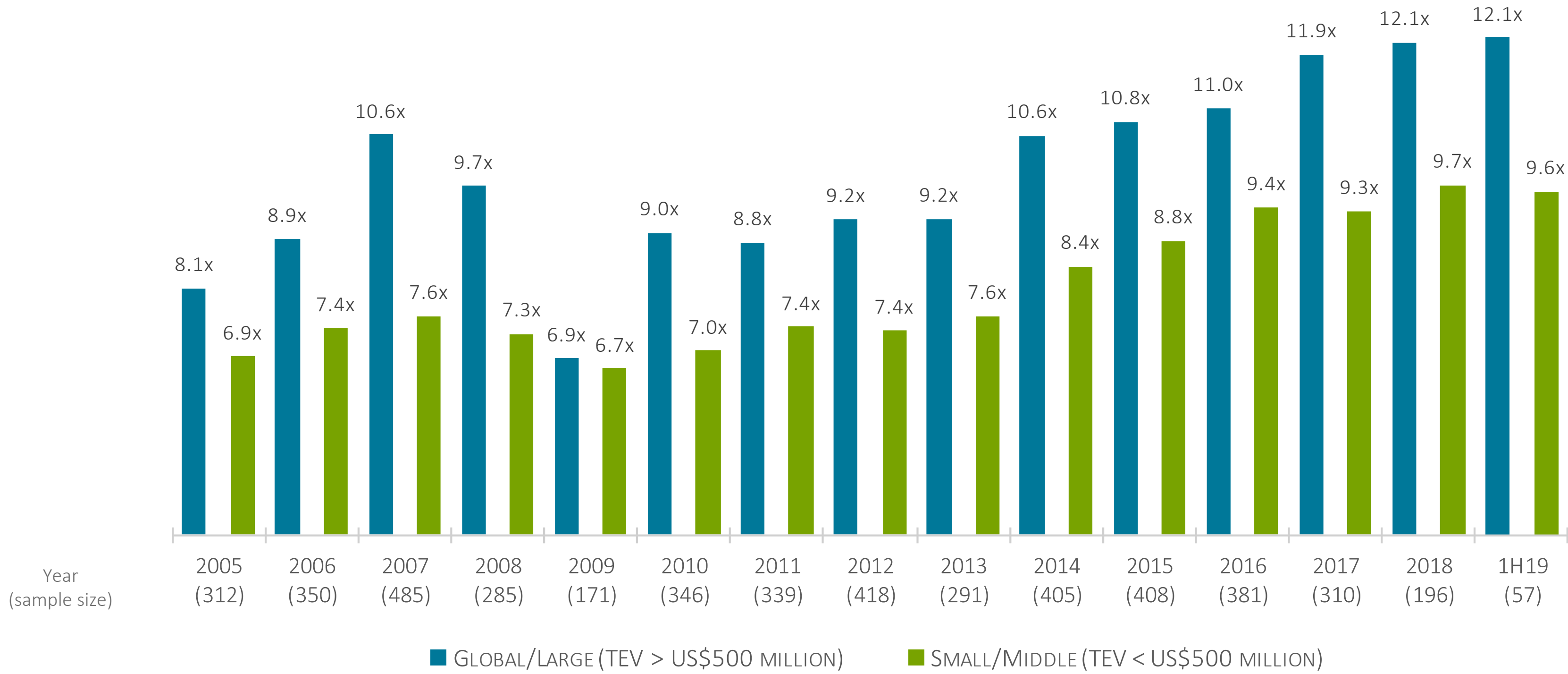


Preqin Private Equity Online. Data as of October 2019.

Purchase Price Multiples

IN THE U.S., PRICES REMAIN AT HISTORICALLY HIGH LEVELS

U.S. PURCHASE PRICE MULTIPLES



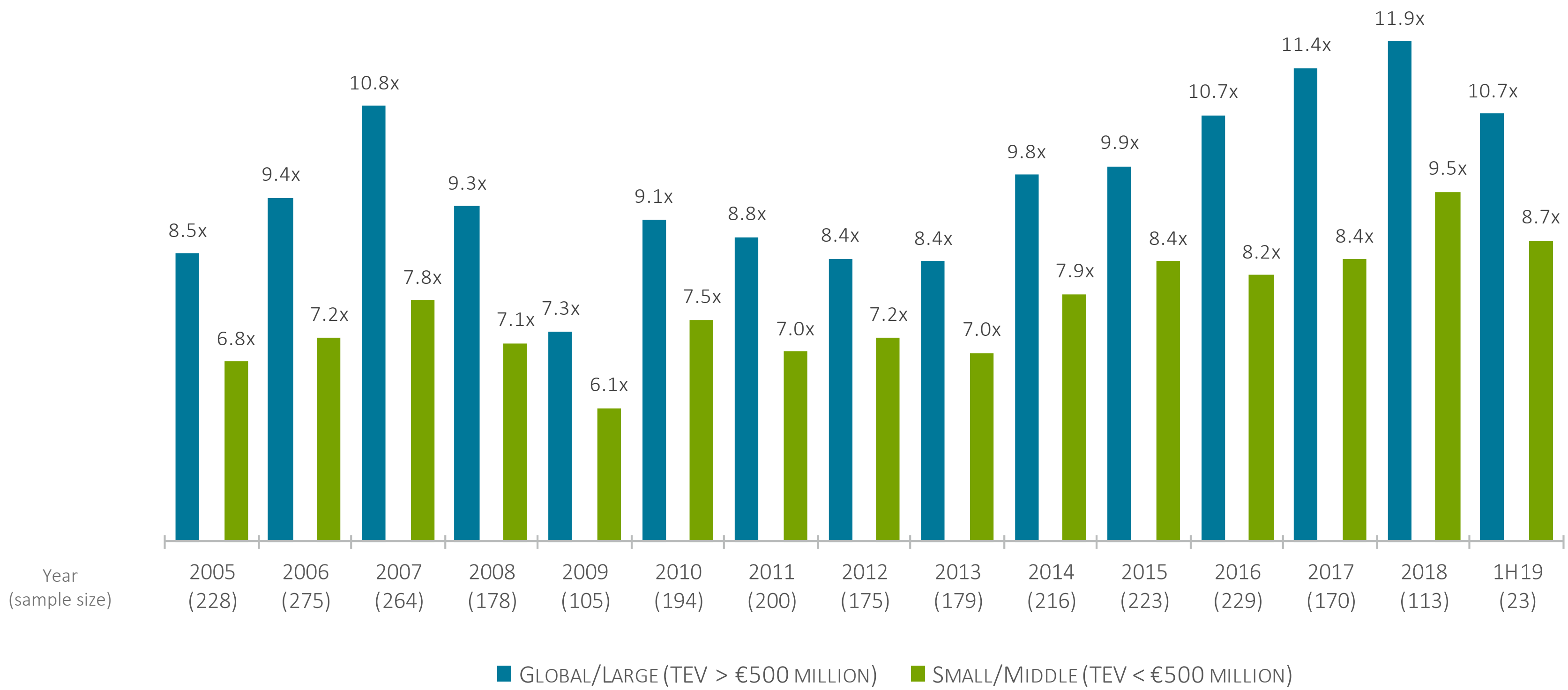
- Low interest rates and high growth expectations explain the high prices.
- StepStone would expect prices to moderate over the next fund cycle.

SPI, StepStone analysis; latest available data in SPI as of Q2 2019; SPI data is continuously updated and historical values are subject to change.

Purchase Price Multiples

PURCHASE PRICES IN EUROPE HAVE EXHIBITED THE SAME BEHAVIOR AS IN NORTH AMERICA

EUROPEAN PURCHASE PRICE MULTIPLES



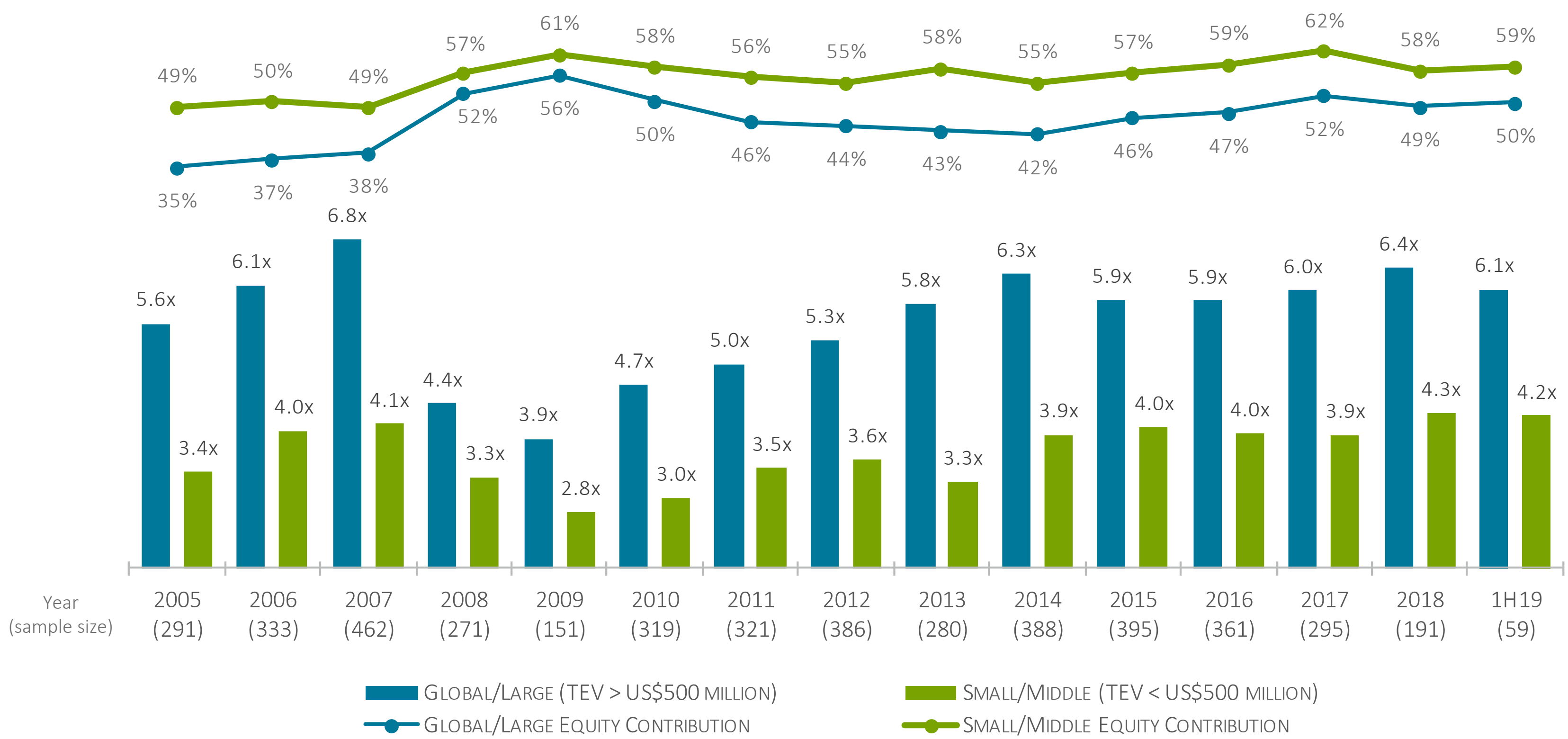
- H1 2019 purchase prices have come down from 2017-18 but are still high relative to historic levels.
- StepStone would expect levels to remain at fairly elevated as more diverse investors pursue fewer deals – as such StepStone has been very selective.

SPI, StepStone analysis; latest available data in SPI as of Q2 2019; SPI data is continuously updated and historical values are subject to change.

Leverage Multiples

EQUITY CONTRIBUTIONS HAVE REMAINED WELL ABOVE PRE-GFC LEVELS AS PRICES HAVE INCREASED

U.S. LEVERAGE MULTIPLES



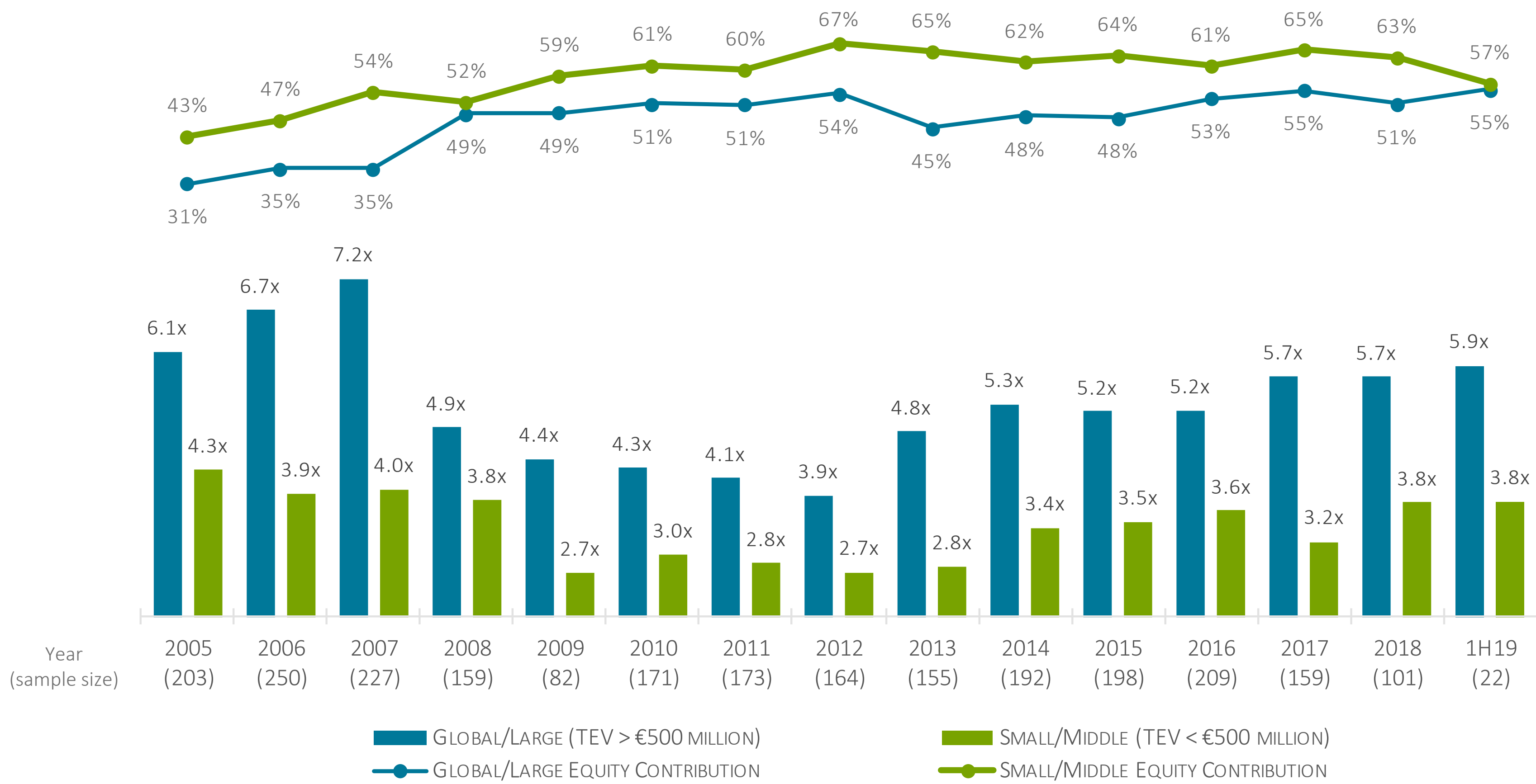
- Leverage multiples in the Global/Large market remain at ~6x.
- Prices are higher, but capital structures should be more durable as the equity contributions continue to remain at a healthier level than pre-GFC.

SPI, StepStone analysis; SPI data as of Q2 2019 and is continuously updated and historical values are subject to change.

Leverage Multiples

IN EUROPE, LEVERAGE MULTIPLES REMAIN BELOW 2005-2007 IN THE GLOBAL/LARGE MARKET

EUROPEAN LEVERAGE MULTIPLES

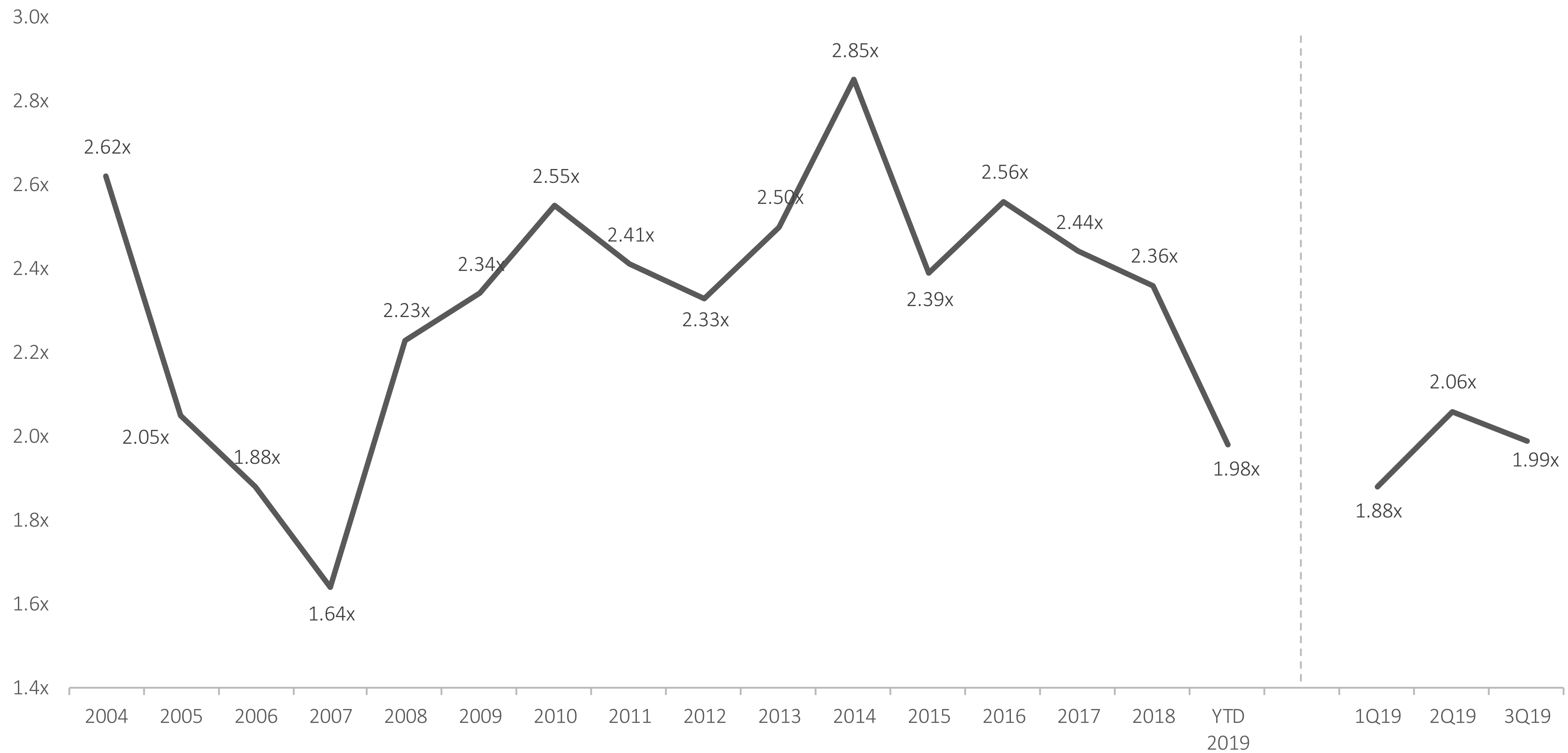


- Leverage multiples in Europe market have increased and are approaching ~6x.
- Leverage multiples on global/large and small/middle deals have increased however they are still below pre-GFC levels and capital structures should be more durable as the equity contributions continue to remain at a healthy levels.

SPI, StepStone analysis; SPI data as of Q2 2019 is continuously updated and historical values are subject to change.

INTEREST COVERAGE IN 2019 IS BELOW 2.0x

INTEREST COVERAGE RATIO FOR U.S. LARGE CORPORATE LBOs



- Since 2008, no full calendar year has been below 2.3x. If 2019 finishes below 2.0x, it would mark a stark reversal of that trend.
- Interest coverage ratio of <2 raises potential concerns over company's ability to handle its outstanding debt.

Source: Q3 2019 S&P LBO Review; StepStone Analysis
Interest Coverage Ratio defined as (Adjusted EBITDA – CapEx)/Interest

Debt Markets

DIVIDEND ACTIVITY IS IN-LINE FOR ITS SMALLEST YEAR SINCE 2009

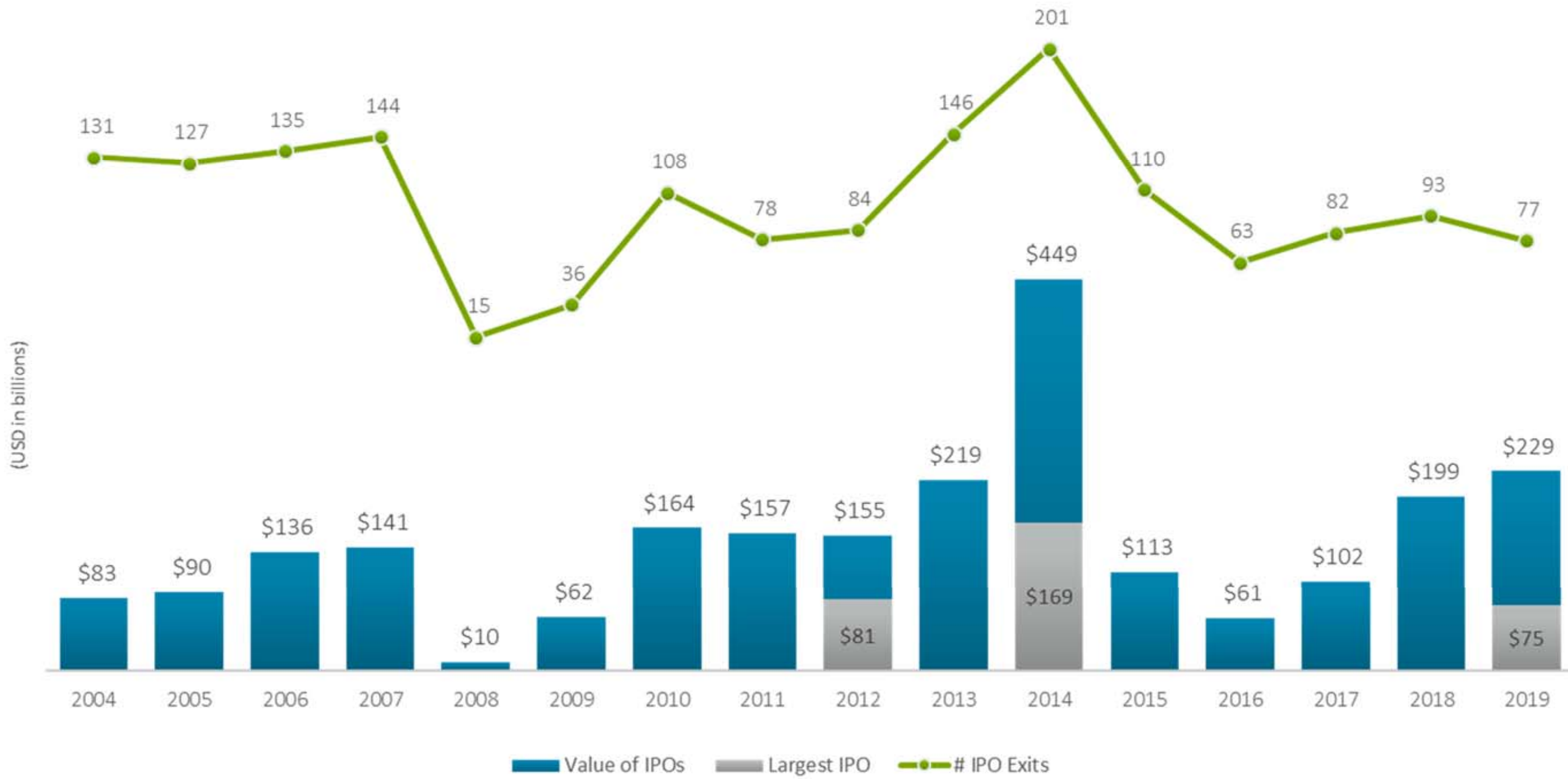
DIVIDEND/STOCK REPURCHASE VOLUME

- Dividend recapitalizations volume is down 2019, following a similar pattern of the overall total loan volume

IPO Market

2019 IS THE SECOND MOST FRUITFUL IPO MARKET BEHIND 2014 IN TERMS OF DOLLARS RAISED

IPO ACTIVITY BY YEAR



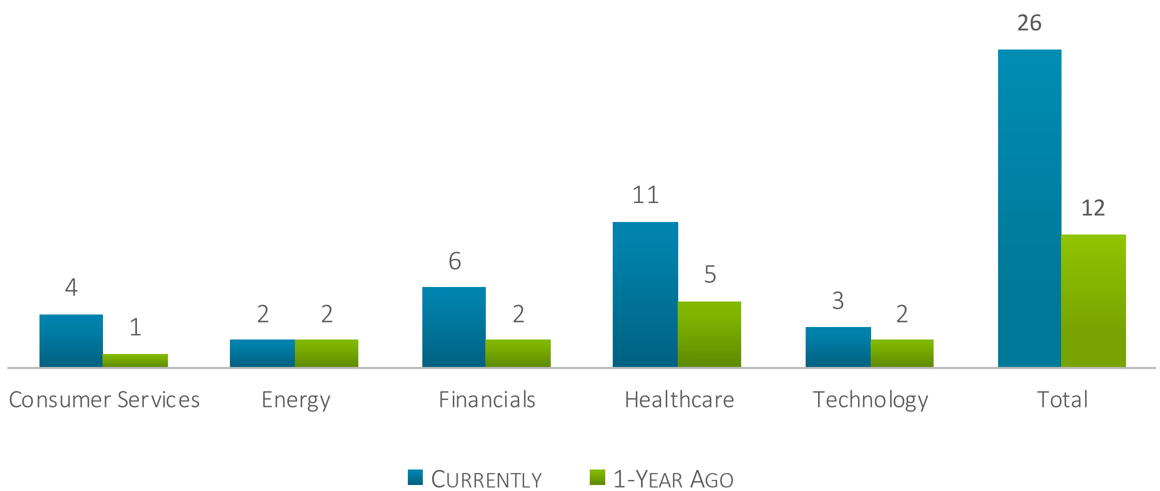
- The largest IPOs during 2019 were Uber ($75.2b), Lyft ($20.8b), and Pinterest ($11.7b).
- 2019 IPO value down 10% since listing driven by Uber and Lyft, which represented 42% of 2019 issuances collectively.

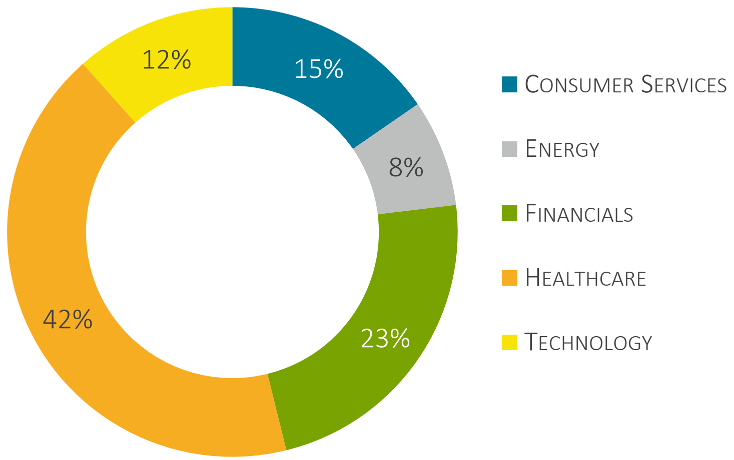
Source: ThomsonOne as of Q3 2019; StepStone Analysis
In 2012, the grey bar represents the IPO of Facebook (NASDAQ: FB)
In 2014, the grey bar represents the IPO of Alibaba (NYSE: BABA)
In 2019, the grey bar represents the IPO of Uber (NYSE: UBER)

IPO Market

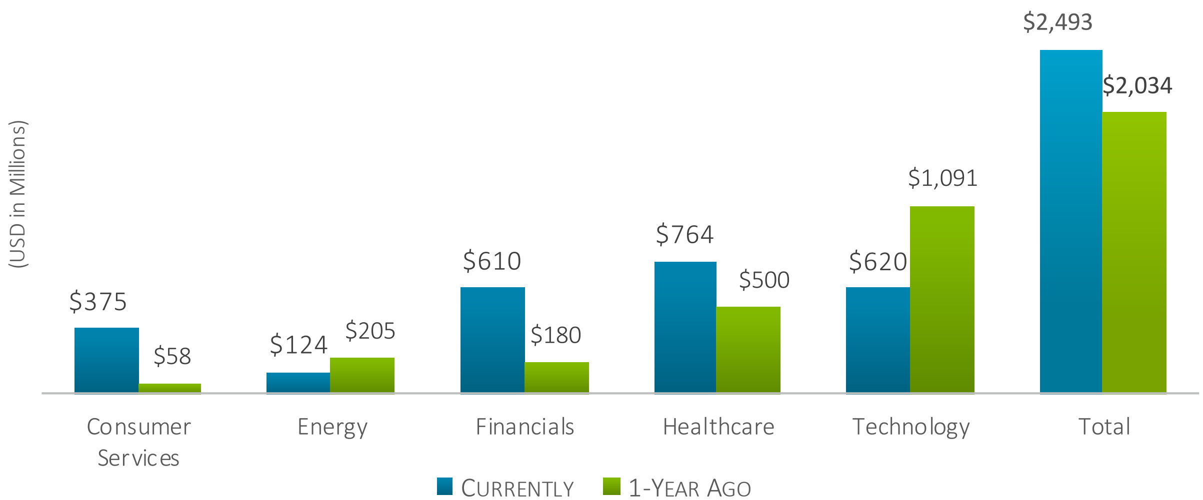
IPO BACKLOG

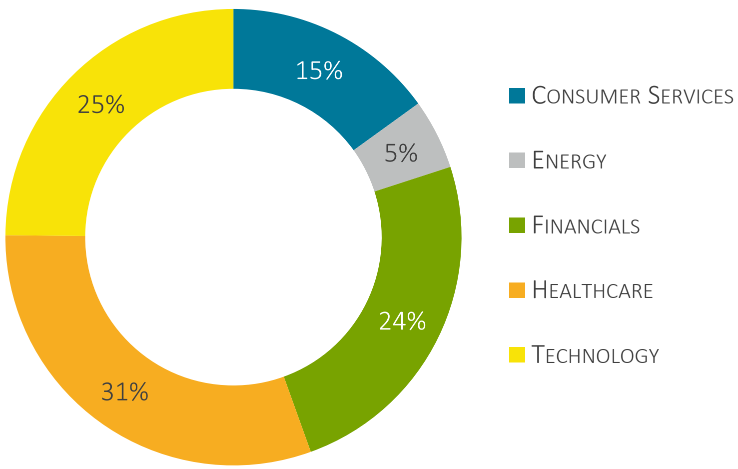
NUMBER OF PROPOSED DEALS BY SECTOR





VALUE OF PROPOSED DEALS BY SECTOR





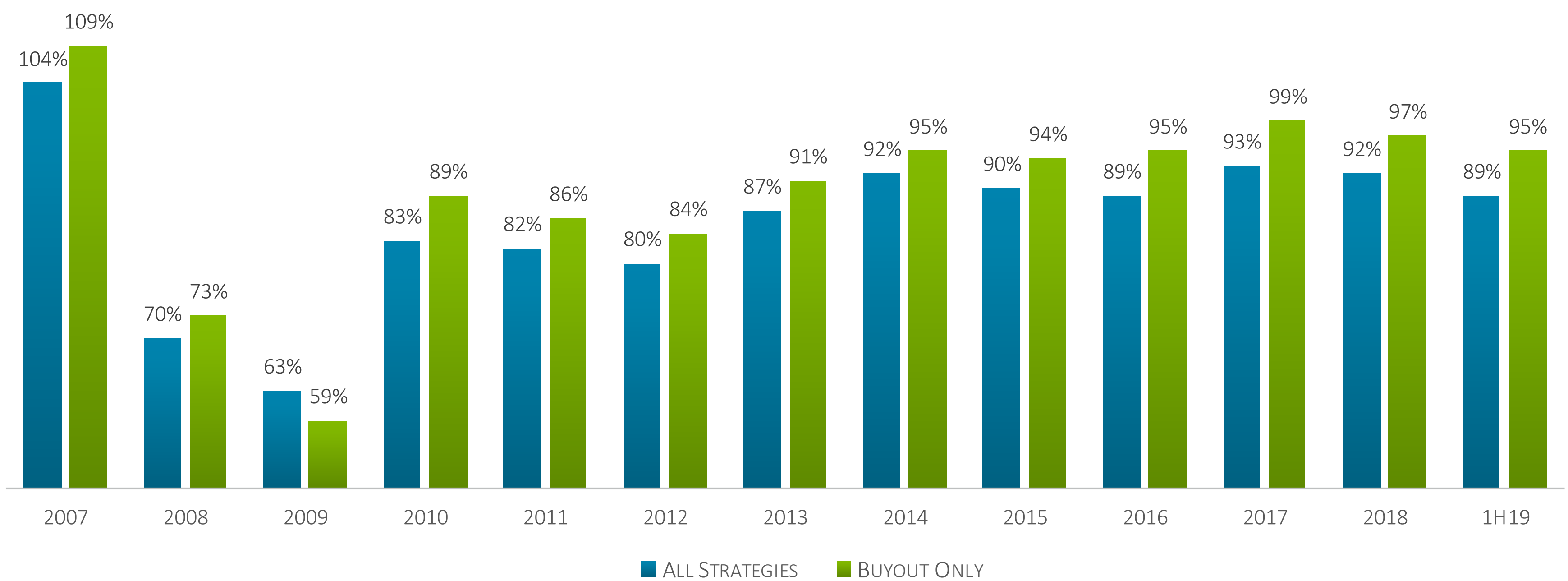
Source: NYSE Euronext, as of October 2019.

Secondary Market Overview

CURRENT INVESTMENT ENVIROMENT

- Secondary market in mature phase of development.
- Conditions exist for continued efficient pricing.
- Outperformance necessitates a distinct strategy and platform advantages.

MARKET SECONDARY PURCHASE PRICE AS A % OF NAV



OFF-MARKET TRANSACTIONS, QUALITY ASSETS ARE KEY TO RETURNS IN THE CURRENT ENVIROMENT

Greenhill Cogent, July 2019. There can be no assurance that the discounts in the amounts shown above will continue to be available in the market.

II. LACERA’s Private Equity Investment Process

Reported data provided by State Street Global Services, and as such are not independently verified by StepStone.

Private Equity Investment Process

Provided below is the proposed alternatives investment process, leveraging StepStone and LACERA's resources

Stage	StepStone Process		LACERA Process	
Stage 1 Initial Review	Research Vertical Assigned		Staff Member Assigned	
	Initial Review		Initial Review	
	Deal Team Discussion	No Further Action	StepStone & LACERA Staff Discussion	Decide to Pass
Stage 2 Further Review	GP Meeting		GP Meeting	
	Fund Summary to LACERA		Staff Reviews Fund Summary	
	Investment Committee Discussion	Fail to Mature	LACERA Internal PE IC Discussion	Vote to Not Invest
Stage 3 Due Diligence	Formal Due Diligence	• Questionnaire • T.R./Cash Flow Template • Reference Calls • L.P.A.: Terms and Conditions	Formal Due Diligence	
	Onsite Meeting		Onsite Meeting	
	Investment Committee Discussion	Not Approved	LACERA Staff Memo	
Stage 4 Final Approval	Fund Memo to LACERA		Staff Reviews SSG Fund Memo	
			LACERA Board Discussion	Not Approved
Stage 5 Legal Review & Fund Close			Ongoing Legal Negotiations / Fund Close	Negotiations Unsuccessful

III. Private Equity Portfolio Review

Reported data provided by State Street Global Services, and as such are not independently verified by StepStone.

Executive Summary

- Private Equity portfolio represents $5.9 billion of Net Asset Value (“NAV”), or 10.0% of LACERA’s total portfolio market value, as of June 30, 2019. This is in line with LACERA’s target allocation of 10%
- Since inception, the portfolio has generated a net IRR of 16.1%
- Over the LTM, the portfolio invested $1.3 billion and received distributions of $1.8 billion, resulting in net cash inflows of $529.3 million. The portfolio generated an aggregate net IRR of 12.6%, producing second quartile performance
- LACERA’s Private Equity portfolio is well diversified by strategy, geography, industry, manager and vintage year

LACERA PE Portfolio (USD in millions)			
	As of June '19	As of June '18	Yearly Change
Total Commitments	16,664.0	14,964.2	1,699.8
Total Contributions	13,173.3	11,909.8	1,263.5
Total Unfunded	4,236.9	3,752.0	485.0
Total Distributions	16,153.4	14,360.6	1,792.8
Market Value	5,859.9	5,721.7	138.1
Total Value	22,013.3	20,082.3	1,930.9
Gain/Loss (%)	*67.1%*	*68.6%*	*(1.5%)*
Gain/Loss	*8,839.9*	*8,172.5*	*667.4*
TVM	1.7x	1.7x	0.1x
DPI	1.2x	1.2x	0.0x
Net IRR	16.1%	16.2%	(0.1%)

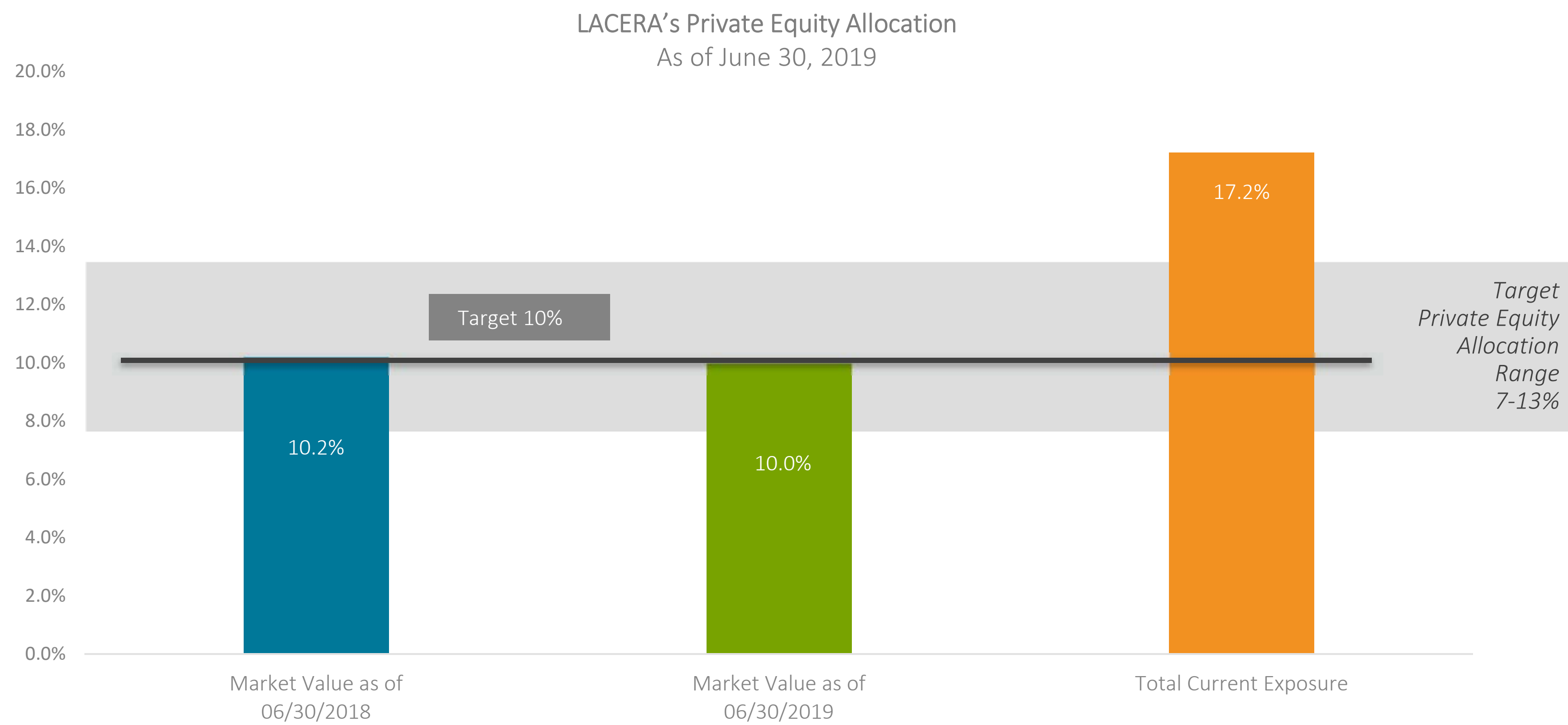
Note: Reported data provided by State Street Global Services, and as such are not independently verified by StepStone.

StepStone Recommendations

- ✓ Continue building a more concentrated portfolio, emphasizing core manager relationships
- ✓ Employ a consistent investment pacing plan incorporating cash flow and liquidity requirements
- ✓ Opportunistically identify niche funds that can complement LACERA's existing portfolio and are accretive to overall returns either directly or through targeted SMA
- ✓ Seek value by selectively investing in under represented strategies, geographies and sectors; Continue to increase exposure to Asia and the RoW to take advantage of growth in emerging economies

Private Equity Allocation

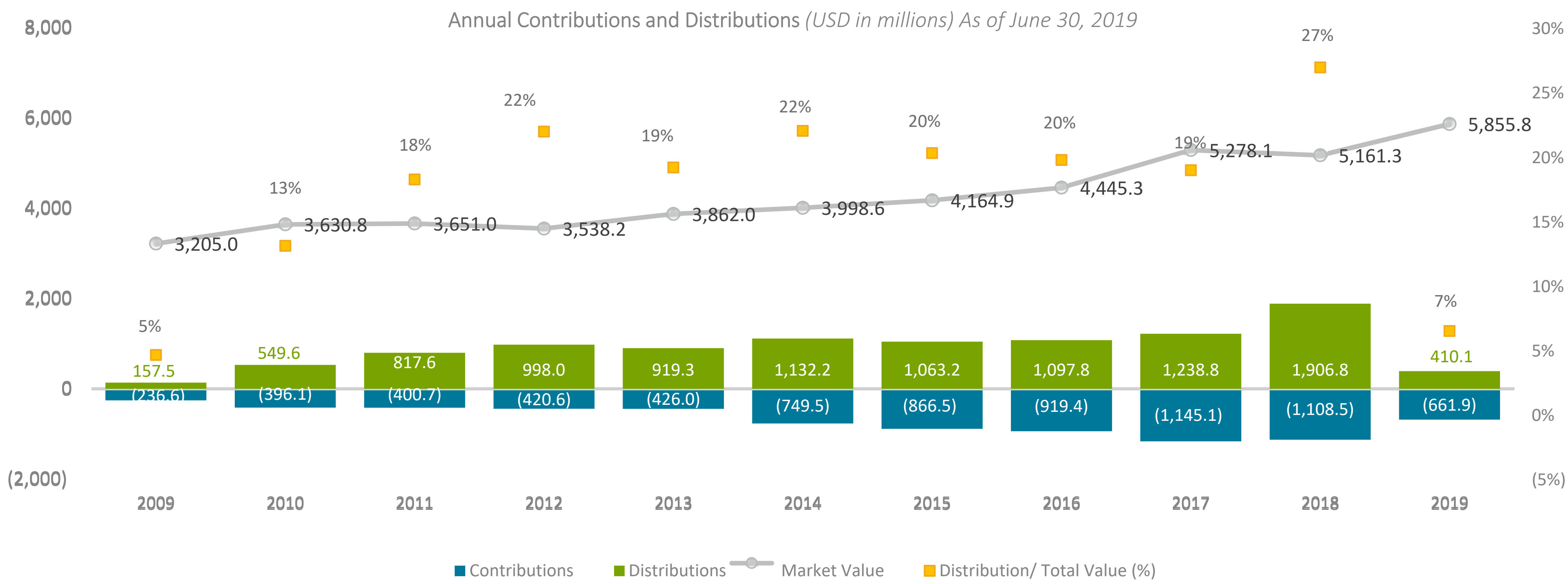
- LACERA targets an allocation of 10% for Private Equity investments, with a target range of 7%-13%
- The Private Equity portfolio represents 10.0% of LACERA's total portfolio by market value, as of June 30, 2019
  - LACERA's exposure to private equity is within the target range
- LACERA's Private Equity market value as a percent of total plan decreased by ~20 bps year-over-year



Note:
Source: Target Allocations provided in LACERA's 2019 Private Equity Investment Plan
LACERA's Total Plan Assets of $56.1 billion as of June 30, 2018 and $58.7 billion as of June 30, 2019 was provided by LACERA
LACERA Total Current Exposure (Net Asset Value (Market Value) + Unfunded Commitments) is $10.1 billion as of June 30, 2019

Annual Cash Flow

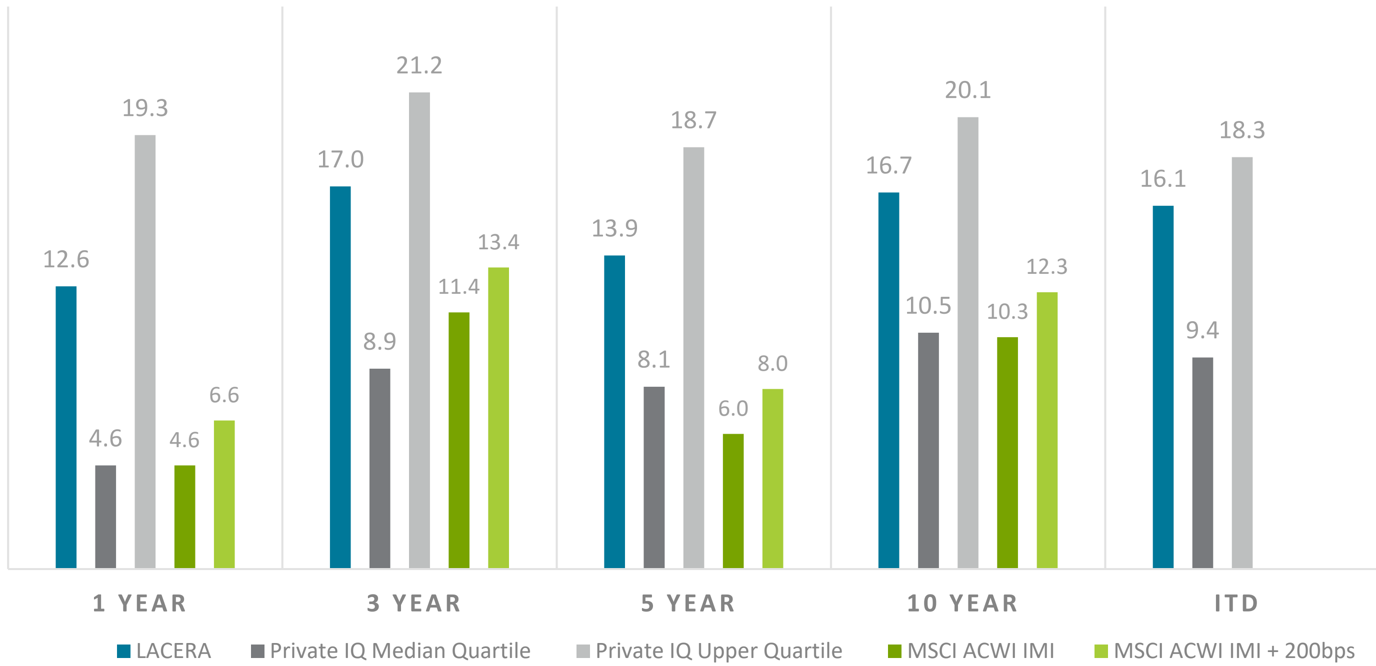
- Over the past 10 years, LACERA's PE Portfolio has recorded a total of $7.3 billion in contributions and $10.3 billion in distributions, resulting in a total positive net cash flow of $3.0 billion
- The portfolio has recorded strong distributions since 2011, and has received approximately 20% of ending NAV in distributions annually, on average
- For the first half of 2019, LACERA has received $410.0 million in distributions, representing ~7% of total NAV of $5.9 billion



Notes:
Annual Contributions and Distributions combines cash flow activity between calendar years of 2009-2019
2018 Distributions include cash distributions from secondary sales
Reported data provided by State Street Global Services, and as such are not independently verified by StepStone
Contributions and distribution data reflect cash flow activity within the given calendar year
Market Value data above reflects LACERA's Year-End Total Market Value for the fiscal year

Private Equity Performance

Benchmark Comparison as of June 30, 2019



- Over the last 12 months, the portfolio produced a second quartile return, generating a net IRR of 12.6%. The portfolio outperformed the MSCI ACWI IMI index by 8.0%
- As of June 30, 2019, LACERA's 10-year net performance of 16.7% outperformed the MSCI ACWI IMI by 6.4%
- LACERA's ITD net IRR of 16.1% places the Private Equity portfolio in the second quartile
- Since inception, LACERA's portfolio has underperformed the Private iQ Upper Quartile index by 2.2%

Benchmark (%) Comparison	1 Year	3 Year	5 Year	10 Year	ITD
LACERA	12.6	17.0	13.9	16.7	16.1
Private IQ Median Quartile	4.6	8.9	8.1	10.5	9.4
Private IQ Upper Quartile	19.3	21.2	18.7	20.1	18.3
MSCI ACWI IMI	4.6	11.4	6.0	10.3	NA
MSCI ACWI IMI + 200bps	6.6	13.4	8.0	12.3	NA

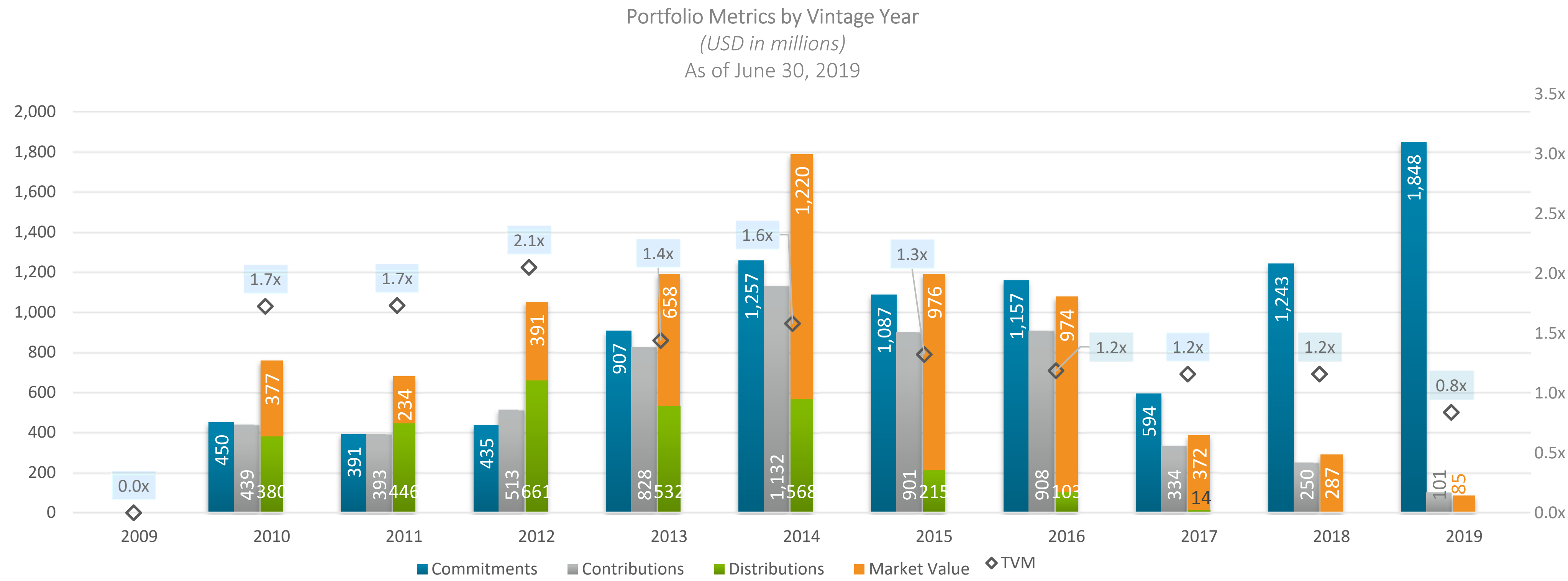
[1] Private iQ benchmarks are provided by The Burgiss Group and reflect All Global Private Equity Funds' at June 30, 2019 in local currency. Total Portfolio benchmarks reflect vintage years 1986 through 1988, 1990, 1992 through 2008, and 2010 through 2019. Note: Benchmark data is continuously updated by The Burgiss Group and may be subject to change.

Notes: These index comparisons are being provided solely for informational purposes as an indication of returns that could be earned by investors by making similar investments in the MSCWI ACWI and should not be relied upon for any purpose

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

Private Equity Commitments by Vintage Year

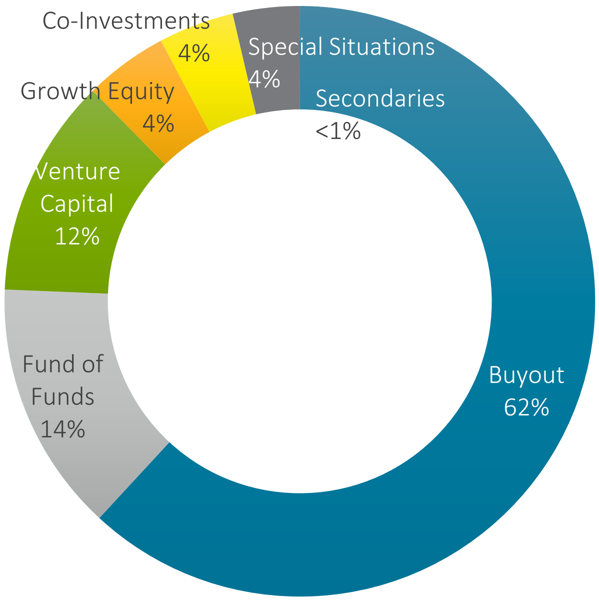
- Since 2009, LACERA has committed $9.4 billion to 106 investments
  - As of June 30, 2019, these commitments have drawn down $5.8 billion, distributed $2.9 billion, and have a reported market value of $5.6 billion
  - Investments made since 2009 have generated a total return of 1.5x TVM
- Vintage 2012 funds have produced the highest return over the last 10 years, generating a total return of 2.1x TVM
  - Clearlake, Summit and Lightyear are the best performing 2012 funds and account for the majority of the value creation



Notes:
Portfolio Metrics by Vintage Year includes data for vintage years 2008-2019. There were no investments with a 2009 vintage in the LACERA private equity portfolio. Vintage year reflects LACERA's first cashflow, which may be different from the fund's vintage year (defined as fund's first cash flow).
Contribution and Distribution data above reflects contributions and distributions attributable to investments with a given vintage year.
Market Value data above reflect total market value for investments with a given vintage year; this is different from LACERA's year-end total private equity portfolio value.

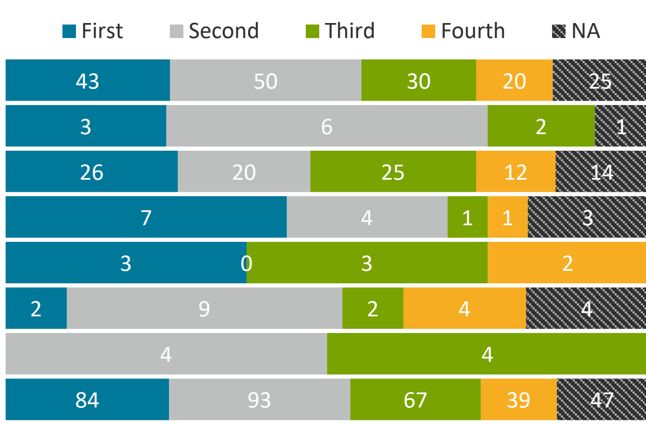
Performance by Strategy

Total Exposure by Sector *(US$10.1 billion)*



- Buyout funds represent the largest strategy in LACERA's portfolio, representing 62% of the aggregate exposure as of June 30, 2019
- Since inception, 168 Buyout funds generated a 1.6x TVM and have realized a 1.2x DPI as of June 30, 2019
  - Over half are first or second quartile: 43 Buyout funds are first quartile funds and 51 are second quartile
- Growth Equity funds have produced the strongest returns. 16 Growth Equity funds generated a 2.2x TVM
  - 11 of the 16 Growth Equity funds are first and second quartile funds
  - Commitments in Summit Partners and Technology Crossover Ventures account for 56% of all commitments in Growth Equity investments

No. of Funds in TVPI Quartiles[1]



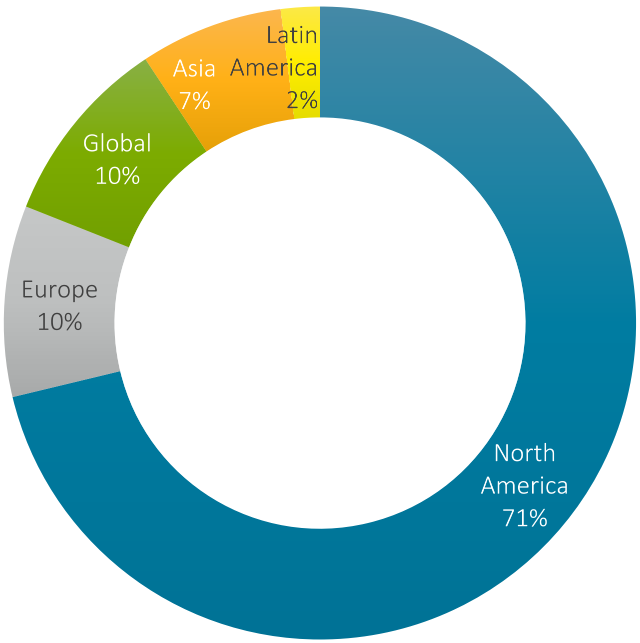
As of June 30, 2019 (USD in millions)

Sector	No. of Inv.	Commitments	Market Value	Net IRR	1 Year	3 Year	5 Year	10 Year	TVM	DPI
Buyout	168	10,770.3	3,436.7	13.7%	11.1%	16.9%	14.4%	17.0%	1.6x	1.2x
Fund of Funds	12	1,426.3	882.1	12.3%	23.6%	23.2%	19.7%	17.1%	1.6x	0.7x
Venture Capital	97	1,851.2	763.9	21.7%	15.2%	14.9%	12.3%	16.2%	1.9x	1.4x
Growth Equity	16	754.0	274.8	86.8%	14.1%	23.7%	22.4%	23.1%	2.2x	1.8x
Co-Investments	8	683.4	296.2	18.1%	0.3%	11.9%	9.9%	16.4%	1.7x	1.2x
Special Situations[2]	21	1,025.1	205.5	8.6%	5.7%	6.5%	-1.6%	9.0%	1.3x	1.1x
Secondaries	8	153.7	0.6	17.2%	8.9%	3.4%	2.2%	11.9%	1.5x	1.5x
Total	330	16,664.0	5,859.9	16.1%	12.6%	17.0%	13.9%	16.7%	1.7x	1.2x

Underlying investments managed by the J.P Morgan Emerging Managers Program have been aggregated into it's respective J.P Morgan funds.
[1]Private iQ benchmarks are provided by The Burgiss Group and reflect 25th percentile/Lower, 50th percentile/Median, and 75th percentile/Upper TVPI at June 30, 2019 in local currency. Each fund was benchmarked by the attributable vintage year of All Global Private Equity Funds'. Fund's vintage year reflects LACERA's first cashflow, which may be different from the fund's vintage year (defined as fund's first cash flow).
Investments in which capital has not been drawn or have participated in a secondary sale have been excluded (N/A) from the quartile rankings.
[2] Special Situations Funds excludes the 10 investments that were reclassified under Credit and Real Assets asset categories.
Note: Benchmark data is continuously updated by The Burgiss Group and may be subject to change.

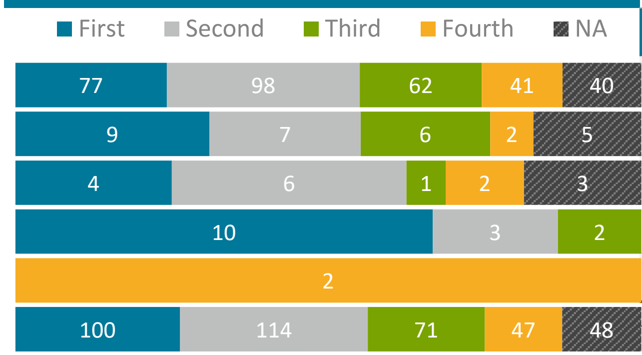
Performance by Geography

Total Exposure by Geography *(US$10.1 billion)*



- LACERA's largest exposure is North America
  - 326 North American funds represent $12.7 billion of commitments since inception and $4.6 billion of market value as of June 30, 2019
  - 175 funds (or 54% of funds) rank in the first and second quartile
- Asian funds have generated the strongest returns with 87% of the funds ranking in the first and second quartiles
  - 15 funds generated a net TVM and IRR of 1.7x and 20.8%, respectively
  - All 4 commitments to Joy Capital rank in the first quartile

No. of Funds in TVPI Quartiles[1]



As of June 30, 2019 (USD in millions)

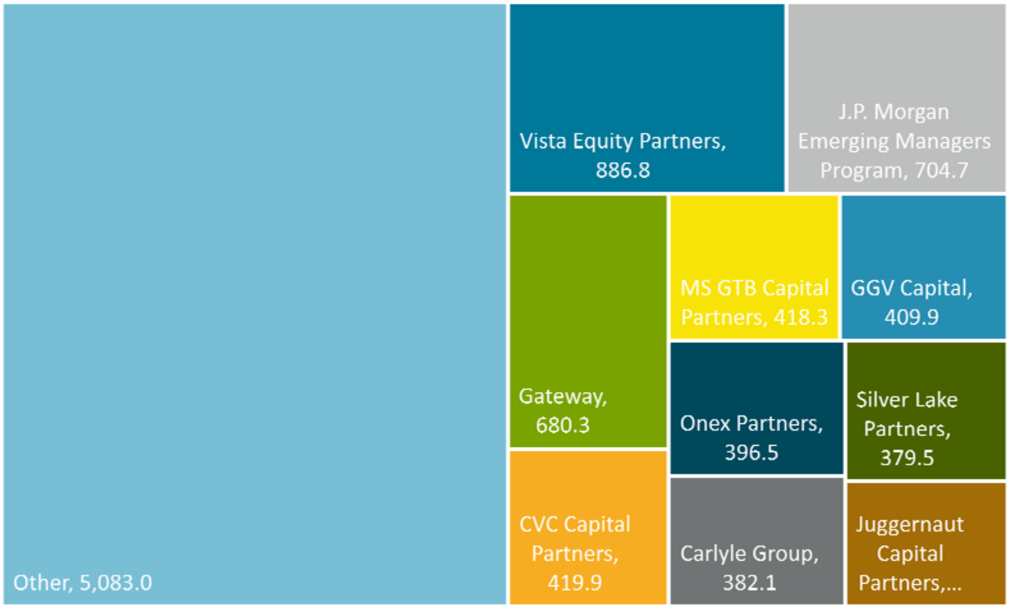
Geography	No. of Inv	Commitments	Market Value	Net IRR	1 Year	3 Year	5 Year	TVM	DPI
North America	318	12,685.7	4,586.2	16.2%	12.7%	17.1%	14.4%	1.7x	1.3x
Europe	29	2,026.1	285.7	15.3%	15.3%	21.1%	9.4%	1.6x	1.4x
Global	16	1,209.3	307.7	16.3%	1.4%	4.5%	6.3%	1.6x	1.0x
Asia	15	543.0	593.5	20.8%	16.9%	21.2%	20.6%	1.7x	0.2x
Latin America	2	200.0	86.8	1.1%	7.7%	2.5%	0.0%	1.0x	0.0x
Total	380	16,664.0	5,859.9	16.1%	12.6%	17.0%	13.9%	1.7x	1.2x

LACERA's Exposure (Net Asset Value + Unfunded Commitments) consists of 380 Active and Exited funds as of June 30, 2019.
[1]Private iQ benchmarks are provided by The Burgiss Group and reflect 25th percentile/Lower, 50th percentile/Median, and 75th percentile/Upper TVPI at June 30, 2019 in local currency. Each fund was benchmarked by the attributable vintage year of All Global Private Equity Funds'. Fund's vintage year reflects LACERA's first cashflow, which may be different from the fund's vintage year (defined as fund's first cash flow).
Investments in which capital has not been drawn or have participated in a secondary sale have been excluded (N/A) from the quartile rankings.
Note: Benchmark data is continuously updated by The Burgiss Group and may be subject to change.

***Past performance is not necessarily indicative of future results** and there can be no assurance that the investment will achieve comparable results or avoid substantial losses.*

Portfolio Exposure by Manager

Total Exposure by Manager *(US$10.1 billion)*

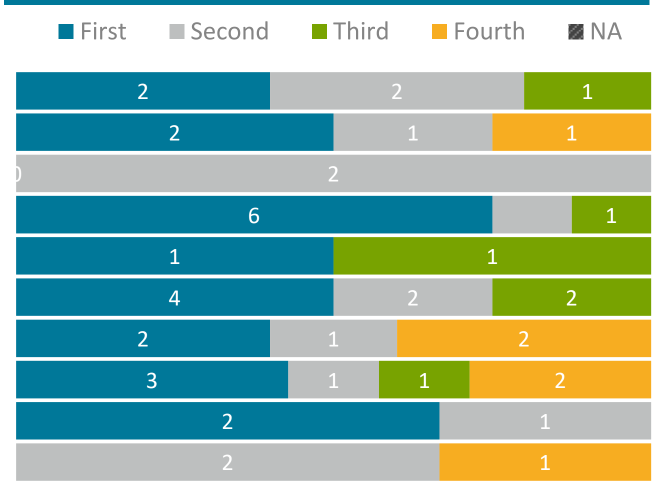


- The grid depicts LACERA's current exposure by underlying manager
- As of June 30, 2019, the ten largest managers account for 50% of total exposure, or $5.0 billion out of $10.1 billion
- Vista represents the largest relationship for LACERA, representing $750.0 million of commitments and $886.8 million of exposure. Five Vista funds generated a 1.7x TVM and a 22.7% IRR

StepStone recommendations:

- Continue to build a more concentrated portfolio, emphasizing top quartile performing managers
- Invest in under represented strategies, geographies, and sectors

No. of Funds in TVPI Quartiles[1]



As of June 30, 2019 (USD in millions)

Manager Name	No. of Funds	Exposure	ITD IRR	TVM	DPI
Vista Equity Partners	5	886.8	601.3	22.7%	1.7x
J.P. Morgan Emerging Managers Program	4	704.7	331.3	24.9%	1.9x
Gateway	2	680.3	548.8	15.1%	1.5x
CVC Capital Partners	8	419.9	193.8	21.0%	1.8x
MS GTB Capital Partners	2	418.3	296.2	11.4%	1.6x
GGV Capital	8	409.9	308.7	21.8%	2.0x
Onex Partners	5	396.5	187.5	23.7%	1.7x
Carlyle Group	7	382.1	264.2	18.5%	1.5x
Silver Lake Partners	3	379.5	258.0	21.0%	1.7x
Juggernaut Capital Partners	3	335.9	231.9	10.9%	1.3x

Underlying investments managed by the J.P Morgan Emerging Managers Program have been aggregated into it's respective J.P Morgan funds.
[1]Private iQ benchmarks are provided by The Burgiss Group and reflect 25th percentile/Lower, 50th percentile/Median, and 75th percentile/Upper TVPI a tJune 30, 2019 in local currency. Each fund was benchmarked by the attributable vintage year of All Global Private Equity Funds'. Fund's vintage year reflects LACERA's first cashflow, which may be different from the fund's vintage year (defined as fund's first cash flow).
Investments in which capital has not been drawn or have participated in a secondary sale have been excluded (N/A) from the quartile rankings.
Note: Benchmark data is continuously updated by The Burgiss Group and may be subject to change.

***Past performance is not necessarily indicative of future results** and there can be no assurance that the investment will achieve comparable results or avoid substantial losses.*

Returns by Vintage Year

As of June 30, 2019 (USD in millions)

Vintage Year	No. of Inv	Committed Capital	Contributed Capital	Distributed Capital	Market Value	Total Value	DPI	TVPI	Net IRR	LACERA's Quartile	Private iQ Benchmark[1] Upper IRR	Private iQ Benchmark[1] Median IRR	Private iQ Benchmark[1] Lower IRR
1986	3	80.0	80.0	267.5	-	267.5	3.3x	3.3x	15.7%	First	12.9%	7.6%	5.4%
1987	1	25.0	25.0	40.3	-	40.3	1.6x	1.6x	7.3%	Third	19.5%	12.5%	4.1%
1988	2	200.0	216.6	466.9	-	466.9	2.2x	2.2x	15.5%	Second	19.9%	11.2%	6.5%
1990	1	7.5	7.5	16.7	-	16.7	2.2x	2.2x	13.0%	Third	23.7%	16.6%	8.5%
1992	10	116.0	111.0	242.5	-	242.5	2.2x	2.2x	29.0%	Second	35.3%	18.0%	7.0%
1993	8	68.0	64.8	239.5	-	239.5	3.7x	3.7x	39.7%	First	38.9%	18.5%	9.1%
1994	5	56.9	58.8	237.6	-	237.6	4.0x	4.0x	54.1%	First	35.2%	18.1%	6.7%
1995	7	100.5	102.3	362.6	-	362.6	3.5x	3.5x	43.1%	First	34.4%	14.1%	3.2%
1996	12	222.9	225.2	608.8	-	608.8	2.7x	2.7x	37.4%	First	31.6%	9.2%	1.0%
1997	11	397.5	410.4	606.4	-	606.4	1.5x	1.5x	7.7%	Third	24.4%	8.5%	0.6%
1998	22	644.4	655.3	943.5	2.5	946.1	1.4x	1.4x	7.3%	Third	17.1%	7.8%	-2.1%
1999	21	360.9	369.6	435.9	0.6	436.5	1.2x	1.2x	3.4%	Second	9.5%	-0.5%	-8.9%
2000	25	376.5	387.3	574.5	1.3	575.8	1.5x	1.5x	8.8%	Second	12.7%	3.8%	-5.1%
2001	15	416.7	441.9	829.2	8.0	837.2	1.9x	1.9x	21.7%	First	21.5%	8.2%	0.1%
2002	8	220.4	230.3	537.1	0.3	537.4	2.3x	2.3x	19.0%	Second	24.5%	13.6%	4.7%
2003	8	315.6	338.4	698.9	3.4	702.4	2.1x	2.1x	21.3%	Second	21.6%	11.2%	3.6%
2004	7	373.5	392.0	737.8	14.0	751.8	1.9x	1.9x	19.6%	First	15.5%	8.7%	0.2%
2005	15	534.2	505.6	1,034.6	5.7	1,040.3	2.0x	2.1x	13.3%	First	12.1%	7.2%	0.4%
2006	28	1,572.6	1,603.4	2,511.6	78.2	2,589.8	1.6x	1.6x	9.0%	Second	11.8%	6.1%	0.2%
2007	11	523.5	456.8	748.8	44.9	793.7	1.6x	1.7x	11.4%	Second	13.6%	8.6%	2.1%
2008	10	682.6	693.2	1,089.7	126.5	1,216.2	1.6x	1.8x	13.2%	Second	15.9%	8.5%	1.9%
2010	20	450.0	439.4	380.4	377.0	757.4	0.9x	1.7x	15.8%	Second	17.0%	10.8%	4.2%
2011	7	391.0	392.8	446.0	234.0	680.0	1.1x	1.7x	15.3%	Second	22.1%	14.4%	7.8%
2012	7	435.0	512.9	660.9	390.9	1,051.8	1.3x	2.1x	23.7%	First	20.2%	12.5%	7.4%
2013	10	907.0	827.6	532.4	658.5	1,190.9	0.6x	1.4x	13.3%	Third	20.4%	13.9%	7.9%
2014	26	1,257.2	1,131.6	568.4	1,220.0	1,788.5	0.5x	1.6x	18.4%	Second	22.6%	14.6%	8.2%
2015	10	1,087.0	900.7	215.2	975.8	1,191.0	0.2x	1.3x	15.4%	Second	21.3%	13.6%	7.2%
2016	12	1,157.2	908.1	103.4	973.7	1,077.0	0.1x	1.2x	13.8%	Second	24.3%	12.9%	6.3%
2017	22	594.0	333.9	14.4	372.4	386.8	0.0x	1.2x	14.7%	Second	19.9%	9.3%	-1.1%
2018	10	1,242.6	249.8	1.8	287.5	289.3	0.0x	1.2x	24.4%	First	10.3%	-2.6%	-16.1%
2019	26	1,847.6	101.0	0.0	84.7	84.7	0.0x	0.8x	-32.0%	NM	NM	NM	NM
TOTAL	380	16,664.0	13,173.3	16,153.4	5,859.9	22,013.3	1.2x	1.7x	16.1%	Second	18.3%	9.3%	0.8%

[1]Private iQ benchmarks are provided by The Burgiss Group and reflect All Global Private Equity Funds' 25th percentile/Lower, 50th percentile/Median, and 75th percentile/Upper IRRs at June 30, 2019 in local currency. Total Portfolio benchmarks reflect vintage years 1986 through 1988, 1990, 1992 through 2008, and 2010 through 2019. Note: Benchmark data is continuously updated by The Burgiss Group and may be subject to change.

Note: Returns by Vintage Year reflect LACERA's total portfolio, including 114 exited investments.

Note: Commitment data above reflects commitments made to funds with a given vintage year; this is different from the year in which a fund is approved by LACERA's board.

2019 Portfolio Summary

- Year to date, LACERA approved $1.5 billion of commitments, compared to the target commitments of $1.5 billion (+/- 20%)
- A summary of commitments by strategy and sector as of are provided below:

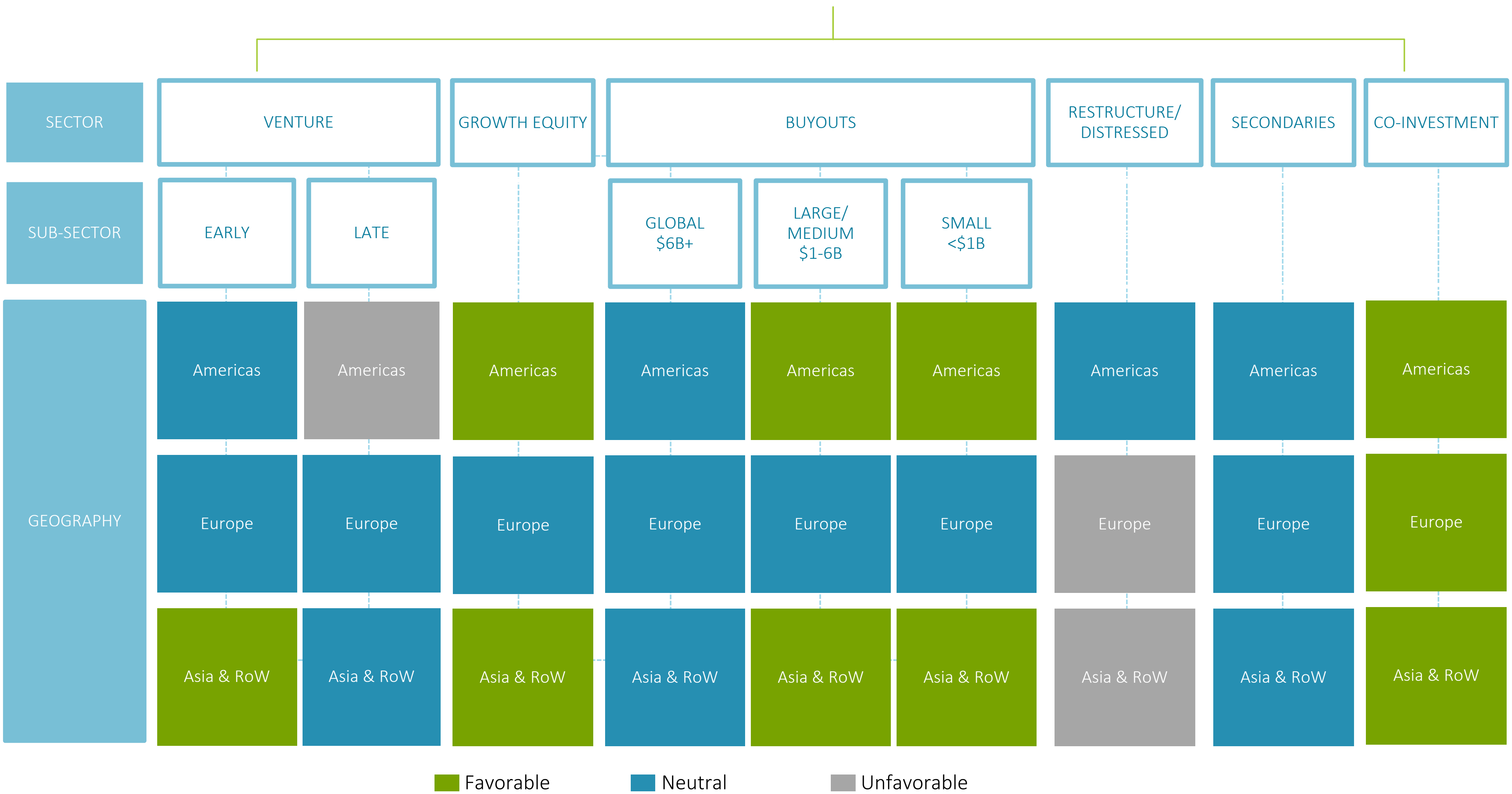
Investments	Investment Strategy	Investment Sub-Strategy	Industry Focus	Commitment *(USD in millions)*
LAV Biosciences Fund V, L.P.	Venture Capital	Balanced	Technology	48
BRV Aster Fund III, L.P.	Venture Capital	Early Stage	Technology	50
BRV Aster Opportunity Fund II, L.P.	Venture Capital	Balanced	Technology	25
Vinci Capital Partners III, L.P.	Buyout	Buyout- Small	Generalist	75
Advent International GPE IX, L.P.	Buyout	Buyout- Small	Generalist	100
TA Associates XIII, L.P.	Buyout	Buyout - Large	Generalist	75
Accel-KKR Capital Partners VI, LP	Buyout	Buyout- Mid	Technology	110
Joy Capital III, L.P.	Venture Capital	Venture Capital	Technology	40
Joy Capital Opportunity, LP	Venture Capital	Venture Capital	Technology	25
BlackFin Financial Services Fund III	Buyout	Buyout- Small	Financial	100
Atlantic Street Capital IV, LP	Buyout	Buyout- Small	Generalist	50
RedBird Series 2019, LP	Buyout	Buyout- Mid	Generalist	150
Co- Investment #1	Co-Investment	Co-Investment	Industrial	20
Green Equity Investors VIII, L.P.	Buyout	Buyout - Large	Consumer	150
Jade Equity Investors, L.P.	Buyout	Buyout- Mid	Consumer	50
Accel-KKR Capital Partners CV III, L.P.	Secondary	Growth Equity	Technology	16
Sterling IP IV	Buyout	Buyout- Small	Generalist	125
Revelstoke Capital Partners Single Asset Fund I, L.P.	Secondary	Buyout- Small	Healthcare	60
MBK Partners V	Buyout	Buyout - Large	Generalist	150
Wynnchurch V	Buyout	Buyout- Mid	Generalist	75
Access Foundation Parnters Group II, LLC	Secondary	Buyout- Small	Consumer	30
TOTAL				1,524

IV. 2020 Strategic Planning

Heat Map

- Provided below are initial thoughts on portfolio construction for LACERA based on client objectives and constraints

2020 TILTS



For illustrative purposes only.

The opinions expressed herein reflect the current opinions of StepStone as of the date appearing in this material only. There can be no assurance that views and opinions expressed in this document will come to pass.

2020 Considerations

Existing managers that are in market or likely to fundraise in the next 12-18 months, categorized by strategy

LACERA Relationships			
Buyout		Growth Equity / Venture Capital	Secondary Funds
• Advent • Bertram* • Blackstone • Clearlake • CVC • Excellere • Gilde* • Harvest Partners* • Hellman & Friedman • Incline • Insignia • Lightyear • Livingbridge	• Montagu* • One Rock • Silver Lake • Sterling Investments • Summit Partners* • TPG* • Triton	• Australis • BRV Aster • Canaan • Gateway* • Insight Capital* • Institutional Ventures* • JMI* • Joy Capital • Lightspeed* • Oak Investments* • Sinovation • Spectrum* • Union Square	• Lexington Partners** • Morgan Stanley**

*LACERA did not commit to the most recent fund.
** Secondary Funds
There can be no assurance made that StepStone will find any opportunities relating to the Managers or that they will achieve their objectives or avoid significant losses.

Risks and Other Considerations

Risks Associated with Investments. Identifying attractive investment opportunities and the right underlying fund managers is difficult and involves a high degree of uncertainty. There is no assurance that the investments will be profitable and there is a substantial risk that losses and expenses will exceed income and gains.

Restrictions on Transfer and Withdrawal; Illiquidity of Interests; Interests Not Registered. The investment is highly illiquid and subject to transfer restrictions and should only be acquired by an investor able to commit its funds for a significant period of time and to bear the risk inherent in such investment, with no certainty of return. Interests in the investment have not been and will not be registered under the laws of any jurisdiction. Investment has not been recommended by any securities commission or regulatory authority. Furthermore, the aforementioned authorities have not confirmed the accuracy or determined the adequacy of this document.

Limited Diversification of Investments. The investment opportunity does not have fixed guidelines for diversification and may make a limited number of investments.

Reliance on Third Parties. StepStone will require, and rely upon, the services of a variety of third parties, including but not limited to attorneys, accountants, brokers, custodians, consultants and other agents and failure by any of these third parties to perform their duties could have a material adverse effect on the investment.

Reliance on Managers. The investment will be highly dependent on the capabilities of the managers.

Risk Associated with Portfolio Companies. The environment in which the investors directly or indirectly invest will sometimes involve a high degree of business and financial risk. StepStone generally will not seek control over the management of the portfolio companies in which investments are made, and the success of each investment generally will depend on the ability and success of the management of the portfolio company.

Taxation. An investment involves numerous tax risks. Please consult with your independent tax advisor.

Conflicts of Interest. Conflicts of interest may arise between StepStone and investors. Certain potential conflicts of interest are described below; however, they are by no means exhaustive. There can be no assurance that any particular conflict of interest will be resolved in favor of an investor.

Allocation of Investment Opportunities. StepStone currently makes investments, and in the future will make investments, for separate accounts having overlapping investment objectives. In making investments for separate accounts, these accounts may be in competition for investment opportunities.

Existing Relationships. StepStone and its principals have long-term relationships with many private equity managers. StepStone clients may seek to invest in the pooled investment vehicles and/or the portfolio companies managed by those managers.

Carried Interest. In those instances where StepStone and/or the underlying portfolio fund managers receive carried interest over and above their basic management fees, receipt of carried interest could create an incentive for StepStone and the portfolio fund managers to make investments that are riskier or more speculative than would otherwise be the case. StepStone does not receive any carried interest with respect to advice provided to, or investments made on behalf, of its advisory clients.

Other Activities. Employees of StepStone are not required to devote all of their time to the investment and may spend a substantial portion of their time on matters other than the investment.

Material, Non-Public Information. From time to time, StepStone may come into possession of material, non-public information that would limit their ability to buy and sell investments.

Global Offices

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Yeoungdeungpo-gu,
Seoul 07326 Korea

LACERA

December 23, 2019

TO: Trustees,
Board of Retirement
Board of Investments

FROM: Steven P. Rice SPR
Chief Counsel

FOR: January 8, 2020 Board of Investments Meeting
January 9, 2020 Board of Retirement Meeting

SUBJECT: 2020 Board Election Process

Background

In 2020, there will be an election for the Second (general), Eighth (retired), and Alternate Retired Member seats on the Board of Retirement, currently held by Herman Santos, Les Robbins, and JP Harris, respectively. There will also be an election for the Second (safety) and Eighth (retired) seats on the Board of Investments, now held by David Green and David Muir, respectively.

Government Code Section 31520.1 of the County Employees Retirement Law of 1937 (CERL) provides that Board of Retirement elections are conducted "in a manner determined by the board of supervisors." As to the Board of Investments, the governing CERL provision, Section 31520.2, does not contain the same language; Section 31520.2 is silent as to determination of BOI election procedures. However, it has been LACERA and the County's practice and legal understanding that the Board of Supervisors also determines the manner of BOI elections.

Accordingly, each election year, the Board of Supervisors adopts a resolution describing the election process and procedures.

2019 Election

For the 2019 election, the Board of Supervisors approved an e-voting and telephone voting process. *See* April 9, 2019 Board of Supervisors Letter and Resolution (attached as Exhibit A). In prior years, the Board of Supervisors approved paper ballots, which were voted manually and returned by U.S. Mail or personal delivery. *See, e.g.,* April 12, 2016 Board of Supervisors Letter and Resolutions (attached as Exhibit B).

The County sought the input of the LACERA Boards with respect to the 2019 election. The Board generally supported the use of e-voting and telephone voting for safety members, while expressing concern about the future use of such a process for retirees and general members, some of whom might not have access to the necessary technology or may not be adept at the use of such technology, and might therefore have their access to the election impaired.

The County believes, based on the 2019 experience and evaluation of that election, that the process improved turnout (which was reported to be slightly under 1% higher than the 2016 election, although still lower than the 2013, 2010, and 2007 elections). Turnout for the past five safety elections is as follows:

2019	19.5%
2016	18.58%
2013	24%
2010	25.8%
2007	26.7%

The County provided multiple notice to all voters to ensure awareness of the election and the voting procedures. The 2019 process also achieved cost savings for the County.

The County stated that there were some technical lessons learned from the 2019 election (including information forwarded by LACERA during the election). The County investigated all concerns conveyed to it during the election. The County is not aware of any member who did not receive notice or was unable to vote in 2019.

2020 Election

LACERA's CEO and Chief Counsel recently had an initial conversation about the 2020 election with County staff, including representatives of the County CEO's office and the Board of Supervisors Executive Office.

It is the County's current intention to use an e-voting and telephonic voting process with two-factor authentication to ensure voter identification and security. In addition, the County may send mail notice. There will be an emphasis on the availability of telephonic voting for those who do not have email or find that technology to be challenging. The County plans to select the election vendor through a Request for Proposals process. The County is open again this year to LACERA's comments and has asked to work with LACERA.

LACERA management is collecting information about general and retired member use of the Call Center, lacera.com, and the member portal to take advantage of LACERA's experience with members and the use of technology. We are reviewing issues of member communication and access. We will integrate the knowledge of LACERA's Systems, Communications, and Member Services Divisions and the Executive Office to share with the County and bring staff's best ideas forward to assist the County and our members in having a fair and open election. LACERA has requested historical turnout information for the past several general and retired elections. As in 2019, management will keep the Boards closely apprised of the election process.

Conclusion

While the County has authority to determine the election process under CERL as noted above, the County is interested in the questions or concerns of LACERA Board trustees. Staff requests that the Boards discuss the issue and provide input that may be provided to the County as it finalizes the 2020 election process.

Attachments

c: Santos H. Kreimann
Jonathan Grabel
JJ Popowich

EXHIBIT A

2019 BOS Election Memo

COUNTY OF LOS ANGELES
BOARD OF SUPERVISORS

KENNETH HAHN HALL OF ADMINISTRATION
500 WEST TEMPLE STREET, ROOM 383
LOS ANGELES, CALIFORNIA 90012
(213) 974-1411 • FAX (213) 620-0636

ADOPTED

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

17 April 9, 2019

CELIA ZAVALA
EXECUTIVE OFFICER

April 09, 2019

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

ELECTION OF THE SEVENTH MEMBER AND ALTERNATE SAFETY MEMBER OF THE BOARD OF RETIREMENT AND THE FOURTH MEMBER OF THE BOARD OF INVESTMENTS (ALL DISTRICTS) (3-VOTES)

SUBJECT

ADOPTION OF RESOLUTION ESTABLISHING THE GOVERNING PROCEDURES FOR THE 2019 LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION (LACERA) ELECTION.

IT IS RECOMMENDED THAT THE BOARD:

Adopt the attached resolution establishing the procedures to elect the Seventh Member and Alternate Safety Member of the Board of Retirement and the Fourth Member of the Board of Investments for the Los Angeles County Employees Retirement Association (LACERA), with three-year terms beginning on January 1, 2020, and expiring on December 31, 2022; and instruct the Executive Officer of the Board of Supervisors to send notice of the election and copies of the election resolution to all County departments that employ Safety Members of LACERA.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The County Employees Retirement Law of 1937 provides for the membership of the Board of Retirement and the Board of Investments of LACERA. Every year the Board of Supervisors adopts, by resolution, the election procedures for members of the Board of Retirement and the Board of Investments of LACERA whose terms of office will expire on December 31st of that year.

Implementation of Strategic Plan Goals

Approval of the attached resolution broadly supports the County Strategic Goal of Operational Effectiveness/Fiscal Responsibility and Accountability.

FISCAL IMPACT/FINANCING

The cost of conducting the LACERA election will be absorbed within the Board of Supervisor's and the Registrar-Recorder/County Clerk's budgets.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Government Code Sections 31520.1 and 31520.2 grant the Board of Supervisors the authority to conduct the election for the elected members of the Board of Retirement and the Board of Investments. Your Board has given the Executive Officer of the Board of Supervisors the responsibility for coordinating these elections with the Registrar-Recorder/County Clerk, LACERA and with County departments through departmental election coordinators.

The election for the Seventh Member and Alternate Safety Member of the Board of Retirement and the Fourth Member of the Board of Investments is a regular election to fill terms of office that expire on December 31, 2019. Active Safety Members of LACERA on May 15, 2019, are eligible to vote in this election. The total eligible voting population in this election is approximately 13,000 persons. In an effort to reduce costs and increase voter turnout, voters will be able to cast their votes either online or by telephone, thereby eliminating the need for, and costs of, paper ballots.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Besides the evident need to fill these offices on the Board of Retirement and the Board of Investments, this election provides an opportunity for Safety Members to participate in selecting board members whose official decisions have a great impact on their own retirement system. Thus, County departments must ensure that any communication from the Executive Officer concerning this election is posted and/or distributed in a timely manner. As always, departments will be called upon to respond immediately to situations that may surface. It is important to emphasize that the integrity of these elections often rests with a department's cooperation and active participation in the election process.

Respectfully submitted,

CELIA ZAVALA
Executive Officer, Board of Supervisors

CZ:dg

Enclosures

c: Chief Executive Officer
County Counsel
Chief Executive Officer, LACERA
Registrar-Recorder/County Clerk
Auditor-Controller
Director, Internal Services Department

RESOLUTION ESTABLISHING THE ELECTION FOR SEVENTH MEMBER AND ALTERNATE SAFETY MEMBER OF THE BOARD OF RETIREMENT AND FOURTH MEMBER OF THE BOARD OF INVESTMENTS

WHEREAS, under the provisions of the County Employees Retirement Law of 1937, the Board of Retirement shall consist of nine members and two alternate members; the Board of Investments shall consist of nine members; and

WHEREAS, the term of the Seventh and Alternate Safety Member of the Board of Retirement, and Fourth Member of the Board of Investments, will expire on December 31, 2019; and

WHEREAS, pursuant to the provisions of the County Employees Retirement Law of 1937, Section 31520.1 and 31520.2 of the Government Code, a successor shall be elected to fill the offices for the term beginning January 1, 2020, at an election conducted in a manner to be determined by the Board of Supervisors:

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the County of Los Angeles that the nomination of candidates and the election of the Seventh Member and Alternate Safety Member of the Board of Retirement, Los Angeles County Employees Retirement Association (LACERA), and election of the Fourth Member of the Board of Investments (LACERA), elected by the Safety Members of said Retirement Association to fill the term beginning January 1, 2020, and expiring December 31, 2022, shall be in accordance with the rules and process herein prescribed:

1. The Executive Officer of the Board of Supervisors shall administer the election for the Seventh Member and Alternate Safety Member of the Board of Retirement of LACERA, and the Fourth Member of the Board of Investments of LACERA.

2. The Executive Officer of the Board of Supervisors shall, on or before Tuesday, April 30, 2019, notify department heads who employ Safety Members of the election and shall provide department heads with an election notice for use in notifying their respective employees.

3. Department heads with Safety Member employees in their departments shall notify their employees of the election by posting sufficient copies of the election notice in work areas on or before Tuesday, May 14, 2019.

4. The Executive Officer of the Board of Supervisors, through a coordinated effort with the Internal Services and Auditor-Controller Departments, shall, on or before Friday, May 17, 2019, send an email to Safety Members within the County that have County email addresses, advising them of the upcoming LACERA election.

5. Each department head with Safety Members in his or her department shall appoint at least one employee who will act as the departmental election coordinator, and at least one employee who will act as the alternate departmental election coordinator. Election coordinators and alternate coordinators shall be responsible for communicating election information to the employees of the department, and shall attend all training sessions, as specified by the Executive Officer of the Board of Supervisors, regarding the administration of the election. Departments with work locations which have more than 100 employees who are eligible to vote are urged to select an on-site election coordinator for each of these locations. It is the responsibility of the department head to notify the Executive Office of the Board of Supervisors at (213) 974-1093 or email to LACERA_ELECTION@bos.lacounty.gov the names, telephone numbers, work place mailing addresses and/or email addresses for employees appointed on or before Monday, May 13, 2019.

6. LACERA Safety Member candidates shall a) be active Safety Members of LACERA on May 15, 2019, b) submit the required documents in the nomination packet to the Registrar-Recorder/County Clerk's office and c) be nominated by a petition signed by at least fifty (50) active Safety Members of LACERA, who themselves were active Safety Members on May 15, 2019, and no member may sign more than one nominating petition. Nomination packets may be obtained from the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, on or after Monday, May 20, 2019. Nomination packets contain: (1) nomination petitions; (2) Candidate Statement of Qualifications Form; (3) resolution; and (4) candidate information booklet. Nominating petitions must be filed with the Registrar-

Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, no later than 5:00 p.m. on Tuesday, June 18, 2019.

7. Each department head shall allow nominees to solicit nominating signatures and candidates to engage in campaign-related activities during working hours on County property provided such signature solicitation and campaign activities are conducted during the employees' lunch, break time, or other off-duty time and does not interfere with County operations or the conduct of County business.

8. The Registrar-Recorder/County Clerk shall examine the signatures on the nominating petitions and notify each nominee of his or her status, no later than Friday, June 21, 2019. If the Registrar-Recorder/County Clerk determines that only one member has been duly nominated, pursuant to the provisions of the County Employees Retirement Law of 1937, Sections 31523 and 31523.1 of the Government Code, the Registrar-Recorder/County Clerk shall notify the Board of Supervisors and the Board of Supervisors shall order that no election be held and the Executive Officer of the Board of Supervisors shall be directed to cast a unanimous ballot in favor of such nominated member. If more than one member has been duly nominated, The Registrar-Recorder/County Clerk shall certify to the Executive Officer of the Board of Supervisors by Friday, June 21, 2019, the names of the candidates to be placed on the official ballot.

9. Nominees in this election may file with the Registrar-Recorder/County Clerk a statement of qualifications of not more than 200 words. Words shall be counted as provided in Elections Code Section 9. Any statement of qualifications filed with the Registrar-Recorder/County Clerk shall be limited to a recitation of the nominee's own personal background and qualifications, and shall not in any way make reference to other nominees or to another nominee's qualifications. A nominee may file his or her statement of qualifications beginning Monday, May 20, 2019 and ending Tuesday, June 18, 2019. No statement of qualifications may be withdrawn and/or re-filed after 5:00 p.m., Tuesday, June 18, 2019. The statement shall become a part of the official voting material, except as provided in paragraph 10, below.

10. Within 5 days of receipt of a candidate's statement of qualifications, the Registrar-Recorder/County Clerk shall examine the statement of qualifications. Any statement of qualifications which the Registrar-Recorder/County Clerk determines is not limited to a recitation of the nominee's own personal background and qualifications or which includes any reference to other nominees or to another nominee's qualifications shall not be printed or circulated by the Registrar-Recorder/County Clerk. The Registrar-Recorder/County Clerk shall notify each nominee by telephone at his or her telephone number that the nominee has provided, and via U.S. Mail sent to the nominee's mailing address if the nominee's statement of qualifications is rejected pursuant to this provision. The decision of the Registrar-Recorder/County Clerk to accept or reject a nominee's statement of qualifications is final. However, a candidate may re-file a statement of qualifications for reconsideration prior to 5:00 p.m., Tuesday, June 18, 2019. Any judicial proceeding challenging the decision of the Registrar-Recorder/County Clerk to reject or accept a nominee's statement of qualifications shall be governed, to the extent determined applicable by the courts, under the procedures set forth in Elections Code Section 13314.

11. Candidates' statements of qualifications will be available for public inspection at the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, beginning on Monday, June 24, 2019, and ending at 5:00 p.m. Friday, June 28, 2019. On Monday, July 1, 2019, candidates' statements of qualifications approved by the Registrar-Recorder/County Clerk may be viewed at:

http://bos.co.la.ca.us/Services/ConflictofInterest/LACERAElection.aspx

12. A public drawing will be held to determine the ballot order at 2:00 p.m. on Wednesday, June 26, 2019, in the Executive Office of the Board of Supervisors, B-1 Kenneth Hahn Hall of Administration, 500 West Temple Street, Los Angeles.

13. Any County employee who is a candidate in this election is a candidate in his or her personal capacity, and may not use County time or County resources to further his or her campaign or election. Any candidate who violates this provision, or has others violate this provision on behalf of his or her candidacy, is subject to discipline, including discharge from County employment.

14. Each department head shall designate existing departmental bulletin board space for all candidates to display campaign material. Campaign material shall clearly state that employees are prohibited from using County time or County resources to further the campaign or election of the candidate.

15. Upon request of a candidate, on or after Monday, June 24, 2019, each department head shall provide the address of each department's work locations where employees who are eligible to vote in this election are employed.

16. Except as otherwise prohibited by law, employees may wear campaign badges or buttons during working hours.

17. Eligible voters will be able to cast their votes either online or by telephone beginning Monday, August 5, 2019, through the closing of the election on Friday, August 30, 2019. The online voting system will be provided through a secure website and can be accessed using any web enabled device. The telephone voting system will be provided through a dedicated toll-free number for voters using a touch-tone dial pad. The online voting and telephone system shall be available 24 hours per day, seven days a week, with 99% up-time during the voting period.

18. Members eligible to vote in this election shall be Safety Members of LACERA on May 15, 2019. In coordination with the Auditor-Controller and Internal Services Department, the Executive Officer of the Board of Supervisors will obtain an electronic file of eligible Safety Members who were active Safety Members of LACERA on May 15, 2019.

19. Safety Members eligible to vote in this election who have valid County email addresses will be sent login credentials to their County email address on opening voting day Monday, August 5, 2019. The email will contain: (1) a URL link to the online voting website; (2) toll-free number to the telephone voting system; (3) username, identified as the employee number; (4) unique pin number; (5) voting instructions; and (6) links to candidate statements (if applicable) and statement of

powers and duties of Board of Retirement Member (Attachment A) and Board of Investments Member (Attachment B). An added layer of security will require eligible voters to provide additional identifying information before gaining access to the online or telephone voting system.

Eligible voters who do not have a valid email address will be identified before the election period and will receive login credentials and voter information by U.S. mail that will be mailed no later than 5:00 p.m. on Thursday, August 1, 2019.

20. The online voting system will require voters to enter their login credentials and other identifying information. Once logged in, the online voting website will include the following: (1) a list of the certified candidates and sufficient information to acquaint members with the nature of the election and the proper method of casting an electronic ballot; (2) a link to the statements of qualifications if properly filed by the candidate; and (3) a link to the statement of powers and duties of the Board Members. Voters will be able to mark their selection for each seat and make changes before confirming their final selections.

21. The telephone voting system will require voters to enter their login credentials and other identifying information before accessing their telephonic ballot. The telephone system will play a recording of the election seat and the candidates for the seat, along with a corresponding number for the voter to select the candidate of their choosing, or allow the voter to move on to the next election seat if they choose not to cast a vote for any candidate. Once the voter has selected the corresponding number of the candidate they wish to vote for using their touch-tone dial pad, the telephone system will ask the voter to confirm the vote or go back to the menu selection of candidates. If the voter confirms their candidate selection, the telephone system will proceed to the next election seat following the same steps noted in this paragraph.

22. No member may vote more than once in this election. The online and telephone system will include controls to prevent a voter from accessing their online or telephonic ballot if a ballot has been cast. Eligible voters will have the opportunity to

review their final selections before casting their online/telephonic vote as final. Once a final ballot is cast by the voter, a unique receipt code will be displayed online for the voter to print or write down for reference, and receipt codes provided by the telephone voting system will be recited for the voter to write down.

23. The Executive Office of the Board of Supervisors shall provide eligible voters with the contact information to use if voter assistance is needed. Contact information will be provided with the login information sent to voters, listed on the online voting system, and posted on the Executive Office of the Board of Supervisors' website.

24. The Executive Officer of the Board of Supervisors shall confirm the election results on or before Monday, September 9, 2019.

25. The Executive Office of the Board of Supervisors shall (a) telephone each candidate receiving more than 20 percent of the total votes cast at his or her telephone number provided as to the results on or before Monday, September 9, 2019, and (b) send written notice of the results via U.S. Mail to each candidate's mailing address, or send electronic mail to those candidates who prefer electronic communication on or before Monday, September 9, 2019.

26. In the event any candidate desires to protest the results of the election, he or she must file a written protest with the Executive Office of the Board of Supervisors no later than 5:00 p.m., Friday, September 13, 2019. The written protest must specify the grounds for the protest and be accompanied by supporting documentation.

27. In the event that a candidate makes a request for a recount, the requestor shall bear the cost of such recount and shall file a written request with the Executive Officer of the Board of Supervisor no later than 5:00 p.m., Friday September 13, 2019. The requester of the recount shall, before the recount is commenced deposit with the Executive Officer of the Board of Supervisors a sum as required by the Executive Officer of the Board of Supervisors to cover the cost of the recount. The Executive Officer of the Board of Supervisors shall commence a recount no later than Friday, September 20, 2019. In the event the recount results in a determination that the

candidate who requested the recount has received a plurality of the votes cast, all money deposited shall be returned to the requester.

28. The Board of Supervisors at its meeting on or before Tuesday, October 15, 2019, or on a date following the completion of any recount and/or investigation of a protest, shall declare the results official. The person receiving the highest number of votes for the Seventh Member, Board of Retirement, and Fourth Member, Board of Investments, shall be declared elected. The elected Alternate Safety Member of the Board of Retirement shall be that candidate, if any, for the Seventh Member from the group under Government Code Section 31470.2 or 31470.4, or any other eligible Safety Member candidate, if there is no eligible candidate from the groups under Sections 31470.2 and 31470.4 which is not represented by the candidate who received the highest number of votes of all candidates in that group. In the event of a tie, such persons shall determine which of them shall be elected by drawing lots before the Board of Supervisors.

29. In lieu of declaring the results official, the Board of Supervisors may order a new election if the Board determines, on the basis of written protest or on its own motion, that any error, omission or neglect occurred attributable to the County in the administration of the election sufficient to change the result. The rejection of a candidate's statement of qualifications by the Registrar-Recorder/County Clerk, or the failure of the Registrar-Recorder/County Clerk to reject a candidate's statement of qualifications shall not constitute grounds for a new election. Allegations of candidate misconduct shall not constitute grounds for a new election, but if later substantiated may lead to administrative discipline or criminal culpability.

30. Election material/data retained by the Executive Office of the Board of Supervisors and its affiliates; nominating petitions retained by the Registrar-Recorder/County Clerk may be discarded or otherwise disposed of no earlier than sixty (60) days after the date of the final declaration of the election results by the Board of Supervisors.

31. The Executive Officer of the Board of Supervisors may, in the exercise of her discretion, implement additional procedures, as she may deem necessary in order to

preserve a fair and equitable election process. The Executive Officer of the Board of Supervisors shall, within ten (10) days, notify the Board of Supervisors, the Boards of Investments and Retirement and all candidates of any additional procedures implemented pursuant to this provision.

The foregoing resolution was adopted on the 9th day of April, 2019, by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

Celia Zavala, Executive Officer-
Clerk of the Board of Supervisors of the
County of Los Angeles

By: Janyn Ruiz
Deputy

APPROVED AS TO FORM:
MARY WICKHAM
County Counsel

By Gina Eachus
Gina Eachus
Senior Deputy County Counsel

POWERS AND DUTIES

OF RETIREMENT BOARD MEMBERS

The Board of Retirement provides this summary to enable voters to evaluate candidates for the Board. The Board urges voters to review this summary prior to voting.

INTRODUCTION

The overall responsibility of the Board of Retirement is to oversee the administration of the retirement pension system and the retiree health care program to ensure that members are provided with the promised benefits upon completion of their public service with Los Angeles County and other participating public employers. In total, members of the Board of Retirement can expect to commit approximately 120-140 hours of their time each month to discharging their duties to the retirement system.

As to those elected Board members who are employed by the County or a participating district, the law provides that these LACERA duties are included as part of their County or other public employment and shall normally take precedence over any other duties. Given the time commitment necessary to fulfill the responsibilities of Board membership, elected Board members will be required to spend a great majority of their working time each month in carrying out their important LACERA duties and responsibilities.

The responsibilities and duties of Board members are explained in detail below.

BOARD MEMBER RESPONSIBILITIES

A Board member's duties include:

1. ***Board and Committee Meetings.*** The Board meets twice each month unless otherwise specified, usually on the first Wednesday and second Thursday, with each meeting generally lasting from 6 to 8 hours. In addition, the Board has established committees to assist in carrying out its responsibilities. The Board also shares additional committees jointly with the system's Board of Investments, including the Audit Committee. Some committees meet monthly; others meet less frequently but up to several times per year. Committee meetings may be held both before and after regular Board meetings, and at other times, and generally last 1 to 2 hours. In addition to the time required to attend meetings, considerable time is required to prepare for meetings and review relevant materials developed by staff and management.

2. ***General Management.*** The general management of LACERA is under the Board of Retirement's oversight. To exercise this responsibility, the Board establishes policies, procedures, and governance processes, and

receives, discusses, and questions reports on operational activities. A few management functions are shared with the Board of Investments. The Boards of Retirement and Investments, acting jointly, adopt the annual budget covering LACERA's operations. The two Boards also act jointly in certain employee relations matters, including approval of Memoranda of Understanding (MOU's) negotiated with SEIU Local 721, the union bargaining for represented employees of LACERA, and approval of compensation to be provided to LACERA's nonrepresented employees. The Board of Retirement is not responsible for investments or for the adoption of funding policies and the setting of contribution rates. The Legislature assigned those responsibilities to the Board of Investments.

3. ***Payment of Retirement Pension Benefits.*** The Board of Retirement administers a statutory retirement plan; it does not establish retirement benefits. This means that retirement benefits can only be provided if they have been authorized by the State Legislature in the County Employees Retirement Law of 1937, found in the California Government Code beginning at Section 31450, and the California Public Employees' Pension Reform Act of 2013, found in the California Government Code beginning at Section 7522. Retirement benefits not authorized by the retirement laws cannot be implemented by the Board of Retirement; rather, a bill must be processed through the Legislature to amend the retirement laws. With only a few exceptions, the Legislature has required the County Board of Supervisors to adopt a resolution approving benefit enhancements before they can take effect.

4. ***Disability Retirement Applications.*** One of the most important – and by far the most time consuming – duties of a Board member is to review disability retirement applications and to participate in the Board's decision to grant or deny disability retirements according to applicable legal standards. It is anticipated the Board of Retirement will process approximately 30 to 50 disability retirement cases per month. Board members carefully review each application and the medical evidence supporting the application. A Board member will then participate in the Board's deliberations and vote on each application.

5. ***Retiree Healthcare Benefits.*** The Board oversees the administration of retiree healthcare benefits under contract with the County and other participating employers.

6. ***Claims and Litigation.*** The Board decides claims made by members concerning their benefits and related issues. The Board also oversees litigation, other than securities litigation.

7. ***Retention and Oversight of Vendors, Consultants, and Experts.*** The Board approves and oversees the retention and performance of vendors, consultants, and experts to assist in the administration of the system and to aid the Board when appropriate.

8. ***Delegation.*** The day-to-day operations of the retirement system are delegated to staff and outside service providers. Board members consider what responsibilities will be delegated and to whom delegation is made. Board members ensure that delegated responsibilities are properly performed through monitoring, questioning, and accountability.

9. ***Legal Compliance.*** The Board ensures that the retirement system maintains compliance with the plan documents and all applicable laws governing the system. Board members comply with this responsibility by conducting a periodic review of plan documents and monitoring changing legal requirements.

10. ***Education.*** Board members are legally required to educate themselves on appropriate topics, which may include benefits administration, disability evaluation, fair hearings, pension fund governance, new board member orientation, ethics, and fiduciary responsibilities, among other topics. Such education must consist of a minimum of 24 hours within two years of assuming office and 24 hours every subsequent two-year period the member continues on the Board.

11. ***Involvement.*** Board members may participate in state and national pension and retirement related organizations, including serving as an executive or committee member in these organizations. Board members may also represent LACERA's interests through engagement with the legislative and executive branches of state and federal government.

FIDUCIARY DUTIES

Board members have the following fiduciary duties:

1. ***Duty of Loyalty.*** The California Constitution provides that Board of Retirement members are fiduciaries and are required to, "discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. A retirement board's duty to its participants and their beneficiaries shall take precedence over any other duty." All Board members, whether elected or appointed, have the same fiduciary duty. The Board members' duty of loyalty at all times is to the participants and beneficiaries as a whole. Board members do not serve as the agent or representative of the agency or group responsible for their election or appointment. Where different groups of participants have different interests on an issue, Board members have a duty to be impartial as between conflicting participant interests and act to serve the overall best interests of all of the participants of the system.

2. ***Duty of Care.*** The California Constitution provides that assets of the retirement system are trust funds to be used only for the purpose of

providing benefits and paying the costs of administering the system. Under the Constitution, members of the Board of Retirement "shall discharge their duties with respect to the system with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims."

The duty of care means that Board members must exercise reasonable effort and diligence in administering and exercising oversight over the system, including: implementing, and periodically reviewing and updating, policies, procedures, and processes; requesting necessary reports and information; analyzing the information, advice, and recommendations received; asking questions; seeking expert advice when required from staff and outside expert consultants; deliberating carefully before making decisions; and understanding the reason for actions before taking them. Board members must monitor the administration of the system, follow the plan documents and applicable law, and take corrective action when required to ensure the sound administration of the system so that benefits and related services are timely and correctly delivered to participants and their beneficiaries and the other matters under the responsibility of the Board of Retirement are properly performed.

CONFLICTS OF INTEREST

Board members must be free of conflicts of interest in compliance with applicable legal requirements and LACERA's Conflict of Interest Code and Code of Ethical Conduct. Board members must disclose conflicts of interest when they arise, and they cannot participate in decisions that will impact, positively or negatively, their own financial interests or the interests of certain of their related persons and entities. Board members are public officials under California conflict of interest laws, and they must be familiar with and follow those laws. Board members are subject to public disclosure of their economic interests and annual reporting requirements under the Political Reform Act and Fair Political Practices Commission regulations. Violation of conflict of interest laws and regulations can result in civil and criminal penalties. Conflict of interest laws and regulations are complex, and Board members should seek legal advice when appropriate. See http://www.fppc.ca.gov/ for more information.

APPROVED BY THE BOARD OF RETIREMENT ON FEBRUARY 14, 2019.

POWERS AND DUTIES

OF INVESTMENTS BOARD MEMBERS

The Board of Investments provides this summary to enable voters to evaluate candidates for the Board. The Board urges voters to review this summary prior to voting.

INTRODUCTION

The Board of Investments oversees investment of LACERA's pension retirement fund ($56.3 billion as of June 30, 2018) and determination of County and member contribution rates. In total, members of the Board of Investments can expect to commit approximately 80 hours of their time each month to discharging their duties to the retirement system.

As to those elected Board members who are employed by the County or a participating district, the law provides that these LACERA duties are included as part of their County or other public employment and shall normally take precedence over any other duties. Given the time commitment necessary to fulfill the responsibilities of Board membership, elected Board members will be required to spend a great majority of their working time each month in carrying out their important LACERA duties and responsibilities.

The responsibilities and duties of Board members are explained in detail below.

BOARD MEMBER RESPONSIBILITIES

A Board member's duties include:

1. ***Board and Committee Meetings.*** The Board meets once each month unless otherwise specified, usually on the second Wednesday, with each meeting generally lasting from 6 to 8 hours. In addition to the time required to attend meetings, approximately 24 hours per meeting is required to prepare for meetings and review relevant materials developed by staff and management. The Board has established committees to assist in carrying out its responsibilities. The Board also shares additional committees jointly with the system's Board of Retirement, including the Audit Committee. Committee meetings may be held both before and after regular Board meetings, and at other times, and generally last 1 to 2 hours per committee plus additional preparation time of a similar or greater number of hours.

2. ***Pension Fund Investments.*** The Board of Investments has exclusive control of all retirement system investments and is responsible for establishing investment beliefs and objectives, the asset allocation for the portfolio, strategies, policies, and governance processes, which are subject to change by Board action. The Board evaluates risk and return,

including consideration of corporate governance issues. The Board makes these decisions based on information and input provided by staff and external consultants. Currently, LACERA's investment portfolio is, with a few exceptions, externally managed. The Board does not make individual investment selections for the externally managed portfolio; rather, it selects investment advisors and managers to make investments for LACERA in accordance with investment objectives and guidelines established by the Board. The Board of Investments and its staff then regularly monitor and evaluate the investment activities and results of its advisors and managers.

3. ***Retiree Healthcare Funds.*** Under agreement with the County and other participating employers, the Board of Investments manages and invests trust funds prepaid for future retiree healthcare benefits.

4. ***Contribution Rates and Actuarial Services.*** Using an actuarial valuation process, the Board of Investments determines the level of contributions necessary to fund retirement benefits. The Board of Investments is responsible for setting actuarial valuation policies, selecting the actuary who will perform the valuation, and approving the actuarial valuation services provided. The actuary submits to the Board of Investments for the Board's approval such changes in County and member contribution rates as are necessary to fund retirement benefits.

5. ***Securities Litigation.*** The Board of Investments, with the assistance of counsel and staff, is charged with actively identifying, evaluating and monitoring securities class action lawsuits in which the fund has sustained a loss, and to determine whether the best interests of the fund are served by actively participating in such cases.

6. ***Other Fund Management.*** A few management functions are shared with the Board of Retirement. The Boards of Retirement and Investments, acting jointly, adopt the annual budget covering LACERA's operations. The two Boards also act jointly in certain employee relations matters, including the approval of class specifications for LACERA's employees, the approval of Memoranda of Understanding (MOU's) negotiated with SEIU Local 721, the union bargaining for represented employees of LACERA, and the approval of compensation to be provided to LACERA's nonrepresented employees. The Board of Investments is not responsible for general administration of the retirement system and benefits. The Legislature assigned those responsibilities to the Board of Retirement.

7. ***Retention and Oversight of Vendors, Consultants, and Experts.*** The Board approves and oversees the retention and performance of vendors, consultants, and experts to assist in system operations and aid the Board when appropriate.

8. ***Delegation.*** The day-to-day investment operations of the retirement system are delegated to staff and outside service providers. Board members consider what responsibilities will be delegated and to whom delegation is made. Board members ensure that delegated responsibilities are properly performed through monitoring, questioning, and accountability.

9. ***Legal Compliance.*** The Board ensures that the retirement system maintains compliance with the plan documents and all applicable laws governing the system. Board members comply with this responsibility by conducting a periodic review of plan documents and monitoring changing legal requirements.

10. ***Education.*** Board members are legally required to educate themselves on appropriate topics, which may include pension fund investments and investment management processes, actuarial matters, pension funding, pension fund governance, new board member orientation, ethics, and fiduciary responsibilities, among other topics. Such education must consist of a minimum of 24 hours within two years of assuming office and 24 hours every subsequent two-year period the member continues on the Board.

11. ***Involvement.*** Board members may participate in state and national pension and investment related organizations, including serving as an executive or committee member in these organizations. Board members may also represent LACERA's interests through engagement with the legislative and executive branches of state and federal government.

FIDUCIARY DUTIES

Board members have the following fiduciary duties:

1. ***Duty of Loyalty.*** The California Constitution provides that Board of Investments members are fiduciaries and are required to, "discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. A retirement board's duty to its participants and their beneficiaries shall take precedence over any other duty." All Board members, whether elected or appointed, have the same fiduciary duty. The Board members' duty of loyalty at all times is to the participants and beneficiaries as a whole. Board members do not serve as the agent or representative of the agency or group responsible for their election or appointment. Where different groups of participants have different interests on an issue, Board members have a duty to be impartial as between conflicting participant interests and act to serve the overall best interests of all of the participants of the system.

2. ***Duty of Care.*** The California Constitution provides that assets of the retirement system are trust funds to be used only for the purpose of providing benefits and paying the costs of administering the system. Under the Constitution, members of the Board of Investments "shall diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so." Governing law provides that the Board "may, in its discretion, invest, or delegate the authority to invest, the assets of the fund through the purchase, holding, or sale of any form or type of investment, financial instrument, or financial transaction when prudent in the informed opinion of the board." The Constitution further requires that Board members "shall discharge their duties with respect to the system with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims."

   The duty of care means that Board members must exercise reasonable effort and diligence in administering and exercising oversight over the investments of the system, including: implementing, and periodically reviewing and updating, policies, procedures, and processes; requesting necessary reports and information; analyzing the information, advice, and recommendations received; asking questions; seeking expert advice when required from staff and outside expert consultants; deliberating carefully before making decisions; and understanding the reason for actions before taking them. Board members must monitor the investments of the system, follow the plan documents and applicable law, and take corrective action when required to ensure the sound administration of the retirement fund's investments and the other matters under the responsibility of the Board of Investments are properly performed.

CONFLICTS OF INTEREST

Board members must be free of conflicts of interest in compliance with applicable legal requirements and LACERA's Conflict of Interest Code and Code of Ethical Conduct. Board members must disclose conflicts of interest when they arise, and they cannot participate in decisions that will impact, positively or negatively, their own financial interests or the interests of certain of their related persons and entities. Board members are public officials under California conflict of interest laws, and they must be familiar with and follow those laws. Board members are subject to public disclosure of their economic interests and annual reporting requirements under the Political Reform Act and Fair Political Practices Commission regulations. Violation of conflict of interest laws and regulations can result in civil and criminal penalties. Conflict of interest laws and regulations are complex, and Board members should seek legal advice when appropriate. See http://www.fppc.ca.gov/ for more information.

APPROVED BY THE BOARD OF INVESTMENTS ON FEBRUARY 13, 2019.

EXHIBIT B

2016 BOS Election Memo

LORI GLASGOW
EXECUTIVE OFFICER

COUNTY OF LOS ANGELES
BOARD OF SUPERVISORS

KENNETH HAHN HALL OF ADMINISTRATION
500 WEST TEMPLE STREET, ROOM 383
LOS ANGELES, CALIFORNIA 90012
(213) 974-1411 • FAX (213) 620-0636

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

10 April 12, 2016

Lori Glasgow
LORI GLASGOW
EXECUTIVE OFFICER

April 12, 2016

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

ELECTION OF THE FOURTH MEMBER OF THE BOARD OF INVESTMENTS AND THE SEVENTH & ALTERNATE MEMBERS OF THE BOARD OF RETIREMENT (ALL DISTRICTS) (3-VOTES)

SUBJECT

ADOPTION OF RESOLUTIONS ESTABLISHING THE GOVERNING PROCEDURES FOR THE 2016 LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION (LACERA) ELECTIONS.

IT IS RECOMMENDED THAT THE BOARD:

Adopt the attached resolutions establishing the procedures to elect the Fourth Member of the Board of Investments and the Seventh and Alternate Members of the Board of Retirement for the Los Angeles County Employees Retirement Association (LACERA), with three-year terms beginning on January 1, 2017, and expiring on December 31, 2019; and instruct the Executive Officer of the Board of Supervisors to send notice of the elections and copies of the election resolutions to all County departments that employ Safety Members of LACERA.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The County Employees Retirement Law of 1937 provides for the membership of the Board of Investments and the Board of Retirement of LACERA. Every year the Board of Supervisors adopts, by resolution, the election procedures for members of the Board of Investments and the Board of Retirement of LACERA whose terms of office will expire on December 31 of that year.

This year, the terms of office for the Fourth Member of the Board of Investments and the Seventh and Alternate Members of the Board of Retirement will expire on December 31st.

Implementation of Strategic Plan Goals

Approval of the attached resolutions broadly supports the County Strategic Goal of Operational Effectiveness/Fiscal Sustainability.

FISCAL IMPACT/FINANCING

The cost of these elections is estimated at $60,000 based upon prior elections conducted by the Registrar-Recorder/County Clerk. The total eligible voting population in these elections is approximately 12,607 persons.

The cost of conducting the LACERA elections will be absorbed within the Registrar-Recorder/County Clerk's and the Board of Supervisors' budgets.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Government Code Sections 31520.1 and 31520.2 grant the Board of Supervisors the authority to conduct the elections for the elected members of the Board of Retirement and the Board of Investments. Your Board has given the Executive Officer of the Board of Supervisors the responsibility for coordinating these elections with the Registrar-Recorder/County Clerk, LACERA and with County departments through departmental election coordinators.

The elections for the Fourth Member of the Board of Investments and the Seventh and Alternate Members of the Board of Retirement are regular elections to fill terms of office that expire on December 31, 2016. Active Safety Members of LACERA on March 1, 2016 are eligible to vote in this election.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Besides the evident need to fill these offices on the Board of Investments and the Board of Retirement, these elections provide an opportunity for Safety Members to participate in selecting board members whose official decisions have a great impact on their own retirement system. Thus, County departments will be strongly encouraged to adhere to these election procedures and ensure that any communication from the Executive Officer concerning this election is posted and/or distributed in a timely manner. As always, departments will be called upon to respond immediately to situations that may surface. It is important to emphasize that the integrity of these elections often rests with a department's cooperation and active participation in the election process.

Respectfully submitted,

LORI GLASGOW
Executive Officer, Board of Supervisors

LG:ak

Enclosures

c: Chief Executive Officer
County Counsel
Chief Executive Officer, LACERA
Registrar-Recorder/County Clerk
Auditor-Controller
Director, Internal Services Department

RESOLUTION ESTABLISHING THE ELECTION FOR
FOURTH MEMBER
OF THE
BOARD OF INVESTMENTS

WHEREAS, under the provisions of the County Employees Retirement Law of 1937, the Board of Investments shall consist of nine members; and

WHEREAS, the term of the Fourth Member of the Board of Investments will expire on December 31, 2016; and

WHEREAS, pursuant to the provisions of the County Employees Retirement Law of 1937, Section 31520.2 of the Government Code, a successor shall be elected to fill the office for the term beginning January 1, 2017, at an election conducted in a manner to be determined by the Board of Supervisors:

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the County of Los Angeles that the nomination of candidates and the election of the Fourth Member of the Board of Investments of the Los Angeles County Employees Retirement Association (LACERA), elected by the Safety Members of said Retirement Association to fill the term beginning January 1, 2017 and expiring December 31, 2019, shall be in accordance with the rules and procedures herein prescribed:

1. The Executive Officer of the Board of Supervisors shall supervise the election for the Fourth Member of the Board of Investments of LACERA.

2. The Executive Officer of the Board of Supervisors shall, on or before Thursday, April 14, 2016, notify department heads who employ Safety Members of the election and shall provide department heads with an election notice for use in notifying their respective employees.

3. Department heads with Safety Member employees in their departments shall notify their employees of the election by posting sufficient copies of the election notice on or before Friday, April 29, 2016.

4. The Executive Officer of the Board of Supervisors, through a coordinated effort with the Internal Services and Auditor-Controller Departments, shall, on or before Monday, May 2, 2016 send an email to those Safety Members within the County that have County email addresses, advising them of the upcoming LACERA election.

5. Each department head with Safety Members in his or her department shall appoint at least one employee who will act as the departmental election coordinator, and at least one employee who will act as the alternate departmental election coordinator. Election coordinators and alternate coordinators shall be responsible for communicating election information to the employees of the department, and shall attend all training sessions, as specified by the Executive Officer of the Board of Supervisors, regarding the administration of the election. Departments with work locations which have more than 100 employees who are eligible to vote are urged to select an on-site election coordinator for each of these locations. It is the responsibility of the department head to notify the Executive Office of the Board of Supervisors at (213) 974-1093 or email to LACERA_ELECTION@bos.lacounty.gov the names, telephone numbers, work place mailing addresses and/or email addresses for employees appointed on or before Monday, April 25, 2016.

6. Candidates shall a) be active Safety Members of LACERA on March 1, 2016 and b) be nominated by a petition signed by at least fifty (50) active Safety Members of LACERA, who themselves were active Safety Members on March 1, 2016, and no member may sign more than one nominating petition. Nominating petitions may be obtained from the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, on or after Monday, May 2, 2016. The request for nomination papers supplied by the Registrar-Recorder/County Clerk shall be completed by each requesting party. Nominating petitions must be filed with the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, no later than 5:00 p.m. on Tuesday, May 31, 2016.

7. Each department head shall allow all nominees to solicit nominating signatures and candidates to engage in campaign-related activities during working hours on County property provided such signature solicitation and campaign activities are conducted during the employees' lunch, break time, or other off-duty time and does not interfere with County operations or the conduct of County business.

8. The Registrar-Recorder/County Clerk shall examine the signatures on the nominating petitions and notify each nominee of his or her status, no later than 5:00 p.m. on Friday, June 3, 2016. If the Registrar-Recorder/County Clerk determines that only one member has been duly nominated, pursuant to the provisions of the County Employees Retirement Law of 1937, Section 31523 of the Government Code, the Registrar-Recorder/County Clerk shall notify the Board of Supervisors and the Board of Supervisors shall order that no election be held and the Executive Officer of the Board of Supervisors shall be directed to cast a unanimous ballot in favor of such nominated member. If more than one member has been duly nominated, the Registrar-Recorder/County Clerk shall certify to the Executive Officer of the Board of Supervisors by Friday, June 3, 2016, the names of candidates to be placed on the official ballot.

9. Nominees in this election may file with the Registrar-Recorder/County Clerk a statement of qualifications of not more than 200 words. Words shall be counted as provided in Elections Code Section 9. Any statement of qualifications filed with the Registrar-Recorder/County Clerk shall be limited to a recitation of the nominee's own personal background and qualifications, and shall not in any way make reference to other nominees or to another nominee's qualifications. A nominee may file his or her statement of qualifications beginning Monday, May 2, 2016. No statement of qualifications may be withdrawn and/or re-filed after 5:00 p.m., Tuesday, May 31, 2016. The statement shall become a part of the official voting material, except as provided in paragraph 10, below.

10. Upon close of the statement of qualifications filing period, the Registrar-Recorder/County Clerk shall examine each statement of qualifications. Any statement of qualifications which the Registrar-Recorder/County Clerk determines is not limited to a recitation of the nominee's own personal background and qualifications or which includes any reference to other nominees or to another nominee's qualifications shall not be printed or circulated by the Registrar-Recorder/County Clerk. The Registrar-Recorder/County Clerk shall notify each nominee by telephone at his or her telephone number that the nominee has provided, and/or via U.S. Mail to the nominee's mailing address if the nominee's statement of qualifications is rejected pursuant to this provision. The decision of the Registrar-Recorder/County Clerk to accept or reject a nominee's statement of qualifications is final. Any statement of qualifications filed with the Registrar-Recorder/County Clerk shall, upon close of the statement of qualifications filing period, be made available for public inspection and copying. Any judicial proceeding challenging the decision of the Registrar-Recorder/County Clerk to reject or accept a nominee's statement of qualifications shall be governed, to the extent determined applicable by the courts, under the procedures set forth in Elections Code Section 13314.

11. A statement of qualifications shall be open to public inspection for a period of five business days excluding weekends (Saturday and Sunday) and holidays. Candidate's statements of qualifications will be available for inspection at the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, beginning on Monday, June 6, 2016, and ending at 5:00 p.m. Friday, June 10, 2016. On or after Thursday, June 16, 2016, candidate's statements of qualifications approved by the Registrar-Recorder/County Clerk may be viewed at:

http://bos.co.la.ca.us/Services/ConflictofInterestLobbyist/LACERAElection.aspx

12. The form of ballot to be used at the election shall be prepared by the Registrar-Recorder/County Clerk and additional materials shall include: (1) a list of the certified candidates in random order with a voting space opposite each name and sufficient information to acquaint members with the nature of the election and the proper method of casting a ballot; (2) statements of qualifications if properly filed by the candidates; (3) a return envelope postage prepaid; and (4) a statement of powers and duties of Board of Investments Members (see Attachment A). The identifying information on the outside of the mailing envelope will include the employee name and mailing address.

13. A public drawing will be held to determine the ballot order at 2:00 p.m. on Wednesday, June 8, 2016 in the Executive Office of the Board of Supervisors, B-1 Kenneth Hahn Hall of Administration, 500 West Temple Street, Los Angeles.

14. The Auditor-Controller shall provide to the Executive Officer of the Board of Supervisors an electronic file in excel format of eligible Safety Members, which includes Safety Members who were active Safety Members of LACERA on March 1, 2016, on or before Tuesday, April 19, 2016. The electronic file will contain employee name, employee number, mailing address, pay location, and department. The Auditor-Controller shall also provide to the Registrar-Recorder/County Clerk an electronic copy of the same file provided to the Executive Officer of the Board of Supervisors, and a redacted electronic file that contains the employee name and mailing address only by Thursday, April 21, 2016. By Friday, June 24, 2016, the Registrar-Recorder/County Clerk will forward the approved list of eligible Safety Members that contains only the employee name and mailing address to its contracted vendor, if it is determined that an election will be held.

15. The Registrar-Recorder/County Clerk shall mail the official ballot to the mailing address of eligible Safety Members beginning on Monday, June 27, 2016 and by Tuesday, July 5, 2016 all ballots must be mailed. The ballots shall be mailed via U.S. Mail using mailing addresses listed on the Auditor-Controller's electronic address file. The Registrar Recorder/County Clerk will forward to the Executive

Officer of the Board of Supervisors by Friday, July 8, 2016, verification that all ballots were mailed as described in this resolution.

16. Any County employee who is a candidate in this election is a candidate in his or her personal capacity, and may not use County time or County resources to further his or her campaign or election. Any candidate who violates this provision, or has others violate this provision on behalf of his or her candidacy, is subject to discipline, including discharge from County employment.

17. Each department head shall designate existing departmental bulletin board space for all candidates to display campaign material. Campaign material shall clearly state that employees are prohibited from using County time or County resources to further the campaign or election of the candidate.

18. Upon request of a candidate, on or after Friday, June 3, 2016, each department head shall provide the address of the department's work locations where employees who are eligible to vote in this election are employed.

19. Except as otherwise prohibited by law, employees may wear campaign badges or buttons during working hours.

20. Members eligible to vote in this election shall be Safety Members of LACERA on March 1, 2016. Eligible Safety Members who do not receive a ballot by Wednesday, July 13, 2016 and desire to vote, or who have made a mistake on their original ballot and wish to correct it, shall notify in writing their department election coordinator on or before Tuesday, July 19, 2016, and explain in writing why a duplicate ballot is being requested. The department election coordinator shall submit to the Registrar-Recorder/County Clerk these written statements along with the employee's name, current mailing address, employee number and department in which employed on March 1, 2016 on the Request for Duplicate Election Ballot Form provided by the Executive Office of the Board of Supervisors on or before Wednesday, July 20, 2016. The Registrar-Recorder/County Clerk must receive the request by Wednesday, July 20, 2016. Duplicate ballots shall

be issued only to those Safety Members who submit the required written statement and whose names appear on both the Request for Duplicate Election Ballot signed by the election coordinator and the Auditor-Controller's electronic file.

21. The Registrar-Recorder/County Clerk shall mail the requested duplicate ballots via U.S. Mail by Friday, July 22, 2016, to the mailing address supplied by members on the Request for Duplicate Election Ballot Form.

22. Each ballot may be voted only by the member to whom it is issued. No member may vote more than once in this election.

23. The Registrar-Recorder/County Clerk shall maintain internal controls to ensure that no more than one vote is cast per member to protect the integrity of the election.

24. To be eligible for counting, ballots shall be returned to the Registrar-Recorder/County Clerk in the REPLY envelope provided via U.S. Mail or personal delivery; shall be completed by each voter and placed within the Privacy Envelope with his or her employee number, printed name, and signature in the space provided on the reverse of said envelope; and shall be received by the Registrar-Recorder/County Clerk by 5:00 p.m., Tuesday, August 9, 2016. There are no provisions for write-in candidates; therefore, no write-in votes shall be counted.

25. The Registrar-Recorder/County Clerk shall canvass the votes cast at the election and shall certify the results to the Executive Office of the Board of Supervisors on or before Friday, August 12, 2016.

26. The Registrar-Recorder/County Clerk shall (a) telephone each candidate receiving more than 20 percent of the total votes cast at his or her telephone number provided as to the results as certified on or before Friday, August 12, 2016 and (b) send written notice of the results via U.S. Mail to each candidate's

mailing address, or send electronic mail to those candidates who prefer electronic communication on or before Friday, August 12, 2016.

27. In the event a candidate makes a request for a recount of the election results, the requestor shall bear the cost of such a recount. A written request for a recount shall be filed with the Registrar-Recorder/County Clerk no later than 5:00 p.m., Friday, August 19, 2016. The candidate filing the request for the recount shall, before the recount is commenced and at the beginning of each day following, deposit with the Registrar-Recorder/County Clerk a sum as required by the Registrar-Recorder/County Clerk to cover the cost of the recount for that day. The Registrar-Recorder/County Clerk shall commence a recount no later than Friday, August 26, 2016. In the event the recount results in a determination that the candidate who requested the recount has received a plurality of the votes cast, all money deposited shall be returned to the candidate. The recount conducted by the Registrar-Recorder/County Clerk shall be open to the public.

28. In the event any candidate desires to protest the results of the election, he or she must file a written protest with the Executive Office of the Board of Supervisors no later than 5:00 p.m., Friday, August 19, 2016. The written protest must specify the grounds for the protest and be accompanied by supporting documentation.

29. The Board of Supervisors at its meeting on Tuesday, September 20, 2016, or on a date following the completion of any recount, and/or investigation of a protest, shall declare the results official. The person receiving the highest number of votes shall be declared elected. In the event two or more persons tie for first place, such persons shall determine, by drawing lots before the Board, which of them shall be elected.

30. In lieu of declaring the results official, the Board of Supervisors may order a new election if the Board determines, on the basis of written protest or on its own motion, that any error, omission or neglect occurred attributable to the County in the administration of the election sufficient to change the result. The rejection of

a candidate's statement of qualifications by the Registrar-Recorder/County Clerk, or the failure of the Registrar-Recorder/County Clerk to reject a candidate's statement of qualifications, shall not constitute grounds for a new election. Allegations of candidate misconduct shall not constitute grounds for a new election, but, if later substantiated, may lead to administrative discipline or criminal culpability.

31. Election material retained by the Executive Officer of the Board of Supervisors and nominating petitions and ballots retained by the Registrar-Recorder/County Clerk may be discarded or otherwise disposed of no earlier than sixty-two (62) days after the date of the final declaration of the election results by the Board of Supervisors. The Registrar-Recorder/County Clerk will further confirm with their selected vendor(s) that the electronic file is destroyed sixty-five (65) days after the date of final declaration of the election results by the Board of Supervisors.

32. The Executive Officer of the Board of Supervisors may, in the exercise of her discretion, implement additional procedures as she may deem necessary in order to preserve a fair and equitable election process. The Executive Officer of the Board of Supervisors shall, within ten (10) days, notify the Board of Supervisors, the Boards of Investments and Retirement and all candidates of any additional procedures implemented pursuant to this provision.

The foregoing resolution was on the 12th day of April, 2016, adopted by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

Lori Glasgow, Executive Officer-
Clerk of the Board of Supervisors of the
County of Los Angeles

By: LaChelle Smitherman
Deputy

APPROVED AS TO FORM:
Mary Wickham
County Counsel

By René C. Gilbertson
Rene Gilbertson
Senior Deputy County Counsel

Attachment A

POWERS AND DUTIES
OF INVESTMENTS BOARD MEMBERS

The Board of Investments provides this summary to enable voters to evaluate candidates for the Board of Investments. The Board urges voters to review this summary prior to voting.

The Board of Investments has two (2) primary responsibilities; the investment of LACERA's Retirement Fund ($48.8 billion as of June 30, 2015), and the determination of County and member contribution rates. The Board of Investments operates pursuant to Article XVI, section 17 of the California Constitution and the County Employees Retirement Law of 1937, found in the California Government Code beginning at section 31450.

The Board of Investments has exclusive control of all retirement system investments and is responsible for establishing investment objectives, strategies, and policies. LACERA's investment portfolio is, with very minor exceptions, externally managed. The Board does not make individual investment selections for the externally managed portfolio; rather, it selects investment advisors and managers to make investments for LACERA in accordance with investment objectives and guidelines established by the Board. In addition, the Board of Investments and its staff continually monitor and evaluate the investment activities and results of its advisors and managers. Under the Board's Securities Litigation Policy, the Board of Investments, with the assistance of counsel and staff, is also charged with actively identifying, evaluating and monitoring those securities class action lawsuits in which the fund has sustained a loss, and to determine whether the best interests of the fund would be served by actively participating in such cases.

Investment Board members act as fiduciaries for LACERA and its members. Board members have a constitutional and statutory duty to "diversify the investments of the system so as to minimize the risk of loss and maximize the rate of return, unless under the circumstances it is clearly not prudent to do so."

These duties require members of the Board of Investments to spend substantial time educating themselves and staying current on investment matters. This is accomplished through attendance at courses such as the "Portfolio Concepts and Management" or "Investment Management" courses sponsored by the Wharton School of Economics, and at conferences and seminars held throughout the year. A newly elected member of the Board should expect to devote considerable time and effort in gaining the education and expertise necessary to carry out his or her important responsibilities. At a minimum, Government Code section 31522.8 requires members to complete 24 hours of education within two years of assuming office and 24 hours of education every two years the member continues to hold membership on the Board.

Using an actuarial valuation process, the Board of Investments determines the level of contributions necessary to fund retirement benefits. The Board of Investments is responsible for setting actuarial valuation policies, selecting the actuary who will perform the valuation, and for approving the actuarial valuation services provided. At least every three years, the actuary submits to the Board of Investments for the Board's approval such changes in County and member contribution rates as are necessary to fund retirement benefits.

The Board of Investments shares some responsibilities with the Board of Retirement. The Boards of Retirement and Investments, acting jointly, adopt the annual budget covering LACERA's operations. Additionally, the two Boards act jointly in employee relations matters, including the approval of class specifications for LACERA employees, the approval of Memoranda of Understanding (MOUs) negotiated with SEIU Local 721, the union bargaining for represented employees of LACERA, and the approval of compensation to be provided to LACERA's nonrepresented employees.

The Board of Investments meets on the second Wednesday of each month, with meetings generally lasting from 6 to 8 hours. In addition to the time required to attend meetings, Board members must review materials prior to the meeting. Such review and preparation will require approximately 16 hours per meeting. Special meetings may be held from time to time, including committee meetings, which members may be obligated to attend and which have their own additional time requirements to prepare and attend. Committee meetings may be held both before and after regular Board meetings, and at other times, and generally last 1 to 2 hours plus additional preparation time of a similar or greater number of hours.

Under Government Code Section 31522, as to those elected Board members who are also employed by the County or a participating district, their LACERA duties are included as part of their County or district employment.

The Board of Investments cannot grant benefit increases and is not responsible for the administration of retirement benefits. The Legislature has assigned the administration responsibilities to the Board of Retirement.

APPROVED BY THE BOARD OF INVESTMENTS ON FEBRUARY 10, 2016.

BI 2017 Powers & Duties Statement.docx

RESOLUTION ESTABLISHING THE ELECTION FOR SEVENTH AND ALTERNATE MEMBERS OF THE BOARD OF RETIREMENT

WHEREAS, under the provisions of the County Employment Retirement Law of 1937, the Board of Retirement shall consist of nine members and two alternate members; and

WHEREAS, the term of the Seventh and Alternate Members of the Board of Retirement will expire on December 31, 2016; and

WHEREAS, pursuant to the provisions of the County Employees Retirement Law of 1937, Section 31520.1 of the Government Code, a successor shall be elected to fill the office for the term beginning January 1, 2017, at an election conducted in a manner to be determined by the Board of Supervisors:

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the County of Los Angeles that the nomination of candidates and the election of the Seventh and Alternate Members of the Board of Retirement, Los Angeles County Employees Retirement Association (LACERA), elected by the Safety Members of said Retirement Association to fill the term beginning January 1, 2017 and expiring December 31, 2019 shall be in accordance with the rules and procedures herein prescribed:

1. The Executive Officer of the Board of Supervisors shall supervise the election for the Seventh and Alternate Members of the Board of Retirement of LACERA.

2. The Executive Officer of the Board of Supervisors shall, on or before Thursday, April 14, 2016, notify department heads who employ Safety Members of the election and shall provide department heads with an election notice for use in notifying their respective employees.

3. Department heads with Safety Member employees in their departments shall notify their employees of the election by posting sufficient copies of the election notice on or before Friday, April 29, 2016.

4. The Executive Officer of the Board of Supervisors, through a coordinated effort with the Internal Services and Auditor-Controller Departments, shall, on Monday, May 2, 2016 send an email to those Safety Members within the County that have County email addresses, advising them of the upcoming LACERA election.

5. Each department head with Safety Members in his or her department shall appoint at least one employee who will act as the departmental election coordinator, and at least one employee who will act as the alternate departmental election coordinator. Election coordinators and alternate coordinators shall be responsible for communicating election information to the employees of the department, and shall attend all training sessions, as specified by the Executive Officer of the Board of Supervisors, regarding the administration of the election. Departments with work locations which have more than 100 employees who are eligible to vote are urged to select an on-site election coordinator for each of these locations. It is the responsibility of the department head to notify the Executive Office of the Board of Supervisors at (213) 974-1093 or email to LACERA_ELECTION@bos.lacounty.gov the names, telephone numbers, work place mailing addresses and/or email addresses for employees appointed on or before Monday, April 25, 2016.

6. Candidates shall a) be active Safety Members of LACERA on March 1, 2016 and b) be nominated by a petition signed by at least fifty (50) active Safety Members of LACERA, who themselves were active Safety Members on March 1, 2016, and no member may sign more than one nominating petition. Nominating petitions may be obtained from the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, on or after Monday, May 2, 2016. The request for nomination papers supplied by the Registrar-Recorder/County Clerk shall be completed by each requesting party. Nominating petitions must be filed with the Registrar-Recorder/County Clerk, 12400 E Imperial Highway, Norwalk, 90650, no later than 5:00 p.m. on Tuesday, May 31, 2016.

7. Each department head shall allow nominees to solicit nominating signatures and candidates to engage in campaign-related activities during working hours on County property provided such signature solicitation and campaign activities are conducted during the employees' lunch, break time, or other off-duty time and does not interfere with County operations or the conduct of County business.

8. The Registrar-Recorder/County Clerk shall examine the signatures on the nominating petitions and notify each nominee of his or her status, no later than 5:00 p.m. on Friday, June 3, 2016. If the Registrar-Recorder/County Clerk determines that only one member has been duly nominated, pursuant to the provisions of the County Employees Retirement Law of 1937, Section 31523 of the Government Code, the Registrar-Recorder/County Clerk shall notify the Board of Supervisors and the Board of Supervisors shall order that no election be held and the Executive Officer of the Board of Supervisors shall be directed to cast a unanimous ballot in favor of such nominated member. If more than one member has been duly nominated, The Registrar-Recorder/County Clerk shall certify to the Executive Officer of the Board of Supervisors by Friday, June 3, 2016, the names of the candidates to be placed on the official ballot.

9. Nominees in this election may file with the Registrar-Recorder/County Clerk a statement of qualifications of not more than 200 words. Words shall be counted as provided in Elections Code Section 9. Any statement of qualifications filed with the Registrar-Recorder/County Clerk shall be limited to a recitation of the nominee's own personal background and qualifications, and shall not in any way make reference to other nominees or to another nominee's qualifications. A nominee may file his or her statement of qualifications beginning Monday, May 2, 2016. No statement of qualifications may be withdrawn and/or re-filed after 5:00 p.m., Tuesday, May 31, 2016. The statement shall become a part of the official voting material, except as provided in paragraph 10, below.

10. Upon close of the statement of qualifications filing period, the Registrar-Recorder/County Clerk shall examine each statement of qualifications. Any statement of qualifications which the Registrar-Recorder/County Clerk determines is not limited to a recitation of the nominee's own personal background and qualifications or which includes any reference to other nominees or to another nominee's qualifications shall not be printed or circulated by the Registrar-Recorder/County Clerk. The Registrar-Recorder/County Clerk shall notify each nominee by telephone at his or her telephone number that the nominee has provided, and via U.S. Mail sent to the nominee's mailing address if the nominee's statement of qualifications is rejected pursuant to this provision. The decision of the Registrar-Recorder/County Clerk to accept or reject a nominee's statement of qualifications is final. Any statement of qualifications filed with the Registrar-Recorder/County Clerk shall, upon close of the statement of qualifications filing period, be made available for public inspection and copying. Any judicial proceeding challenging the decision of the Registrar-Recorder/County Clerk to reject or accept a nominee's statement of qualifications shall be governed, to the extent determined applicable by the courts, under the procedures set forth in Elections Code Section 13314.

11. A statement of qualifications shall be open to public inspection for a period of five business days excluding weekends (Saturday and Sunday) and holidays. Candidate's statements of qualifications will be available for inspection at the Registrar-Recorder/County Clerk, 12400 Imperial Highway, Norwalk, 90650, beginning on Monday, June 6, 2016, and ending at 5:00 p.m. Friday, June 10, 2016. On Thursday, June 16, 2016 candidates' statements of qualifications approved by the Registrar-Recorder/County Clerk may be viewed at:

    http://bos.co.la.ca.us/Services/ConflictofInterest/LACERAElection.aspx

12. The form of ballot to be used at the election shall be as prepared by the Registrar-Recorder/County Clerk and additional materials shall include: (1) a list of the certified candidates in random order with a voting space opposite each name and sufficient information to acquaint members with the nature of the election and the proper method of casting a ballot; (2) statements of qualifications if properly filed by the candidate; (3) a return envelope postage prepaid; and (4) a statement of powers and duties of Board of Retirement Members (see Attachment B). The identifying information on the outside of the mailing envelope will include the employee name and mailing address.

13. A public drawing will be held to determine the ballot order at 2:00 p.m. on Wednesday, June 8, 2016 in the Executive Office of the Board of Supervisors, B-1 Kenneth Hahn Hall of Administration, 500 West Temple Street, Los Angeles.

14. The Auditor-Controller shall provide to the Executive Officer of the Board of Supervisors an electronic file in excel format of eligible Safety Members, which includes Safety Members who were active Safety Members of LACERA on March 1, 2016, on or before Tuesday, April 19, 2016. The electronic file will contain employee name, employee number, mailing address, pay location, and department. The Auditor-Controller shall also provide to the Registrar-Recorder/County Clerk an electronic copy of the same file provided to the Executive Officer of the Board of Supervisors, and a redacted electronic file that contains the employee name and mailing address only by Thursday, April 21, 2016. By Friday, June 24, 2016, the Registrar-Recorder/County Clerk will forward the approved list of eligible Safety Members that contains only the employee name and mailing address to its contracted vendor, if it is determined that an election will be held.

15. The Registrar-Recorder/County Clerk shall mail the official ballot to the mailing address of eligible Safety Members beginning on Monday, June 27, 2016 and by Tuesday, July 5, 2016 all ballots must be mailed. The ballots shall be mailed via U.S. Mail using mailing addresses listed in the Auditor-Controller's electronic file. The Registrar-Recorder/County Clerk will forward to the Executive Officer of the

Board of Supervisors by Friday, July 8, 2016 verification that all ballots were mailed as described in this resolution.

16. Any County employee who is a candidate in this election is a candidate in his or her personal capacity, and may not use County time or County resources to further his or her campaign or election. Any candidate who violates this provision, or has others violate this provision on behalf of his or her candidacy, is subject to discipline, including discharge from County employment.

17. Each department head shall designate existing departmental bulletin board space for all candidates to display campaign material. Campaign material shall clearly state that employees are prohibited from using County time or County resources to further the campaign or election of the candidate.

18. Upon request of a candidate, on or after Friday, June 3, 2016, each department head shall provide the address of each department's work locations where employees who are eligible to vote in this election are employed.

19. Except as otherwise prohibited by law, employees may wear campaign badges or buttons during working hours.

20. Members eligible to vote in this election shall be Safety Members of LACERA on March 1, 2016. Eligible Safety Members who do not receive a ballot by Wednesday, July 13, 2016 and desire to vote, or who have made a mistake on their original ballot and wish to correct it, shall notify in writing their department election coordinator on or before Tuesday, July 19, 2016 and explain in writing why a duplicate ballot is being requested. The department election coordinator shall submit to the Registrar-Recorder/County Clerk these written statements along with the employee's name, current mailing address, employee number and department in which employed on March 1, 2016 on the Request for Duplicate Election Ballot Form provided by the Executive Office of the Board of Supervisors on or before Wednesday, July 20, 2016. The Registrar-Recorder/County Clerk must receive the request by Wednesday, July 20, 2016. Duplicate ballots shall be issued only to

those Safety Members who submit the required written statement and whose names appear on both the Request for Duplicate Election Ballot signed by the election coordinator and the Auditor-Controller's electronic file.

21. The Registrar-Recorder/County Clerk shall mail the requested duplicate ballots via U.S. Mail by Friday, July 22, 2016, to the mailing address supplied by members on the Request for Duplicate Election Ballot Form.

22. Each ballot may be voted only by the member to whom it is issued. No member may vote more than once in this election.

23. The Registrar-Recorder/County Clerk shall maintain internal controls to ensure that no more than one vote is cast per member to protect the integrity of the election.

24. To be eligible for counting, ballots shall be returned to the Registrar-Recorder/County Clerk in the REPLY envelope provided via U.S. Mail or personal delivery; shall be completed by each voter and placed within the Privacy Envelope with his or her employee number, printed name and signature in the space provided on the reverse of said envelope; and shall be received by the Registrar-Recorder/County Clerk by 5:00 p.m., Tuesday, August 9, 2016. There are no provisions for write-in candidates; therefore, no write-in votes shall be counted.

25. The Registrar-Recorder/County Clerk shall canvass the votes cast at the election and shall certify the results to the Executive Officer of the Board of Supervisors on or before Friday, August 12, 2016.

26. The Registrar-Recorder/County Clerk shall (a) telephone each candidate receiving more than 20 percent of the total votes cast at his or her telephone number provided as to the results as certified on or before Friday, August 12, 2016 and (b) send written notice of the results via U.S. Mail to each candidate's mailing address, or send electronic mail to those candidates who prefer electronic communication on or before Friday, August 12, 2016.

27. In the event a candidate makes a request for a recount of the election results, the requestor shall bear the cost of such a recount. A written request for a recount shall be filed with the Registrar-Recorder/County Clerk no later than 5:00 p.m., <u>Friday, August 19, 2016</u>. The candidate filing the request for the recount shall, before the recount is commenced and at the beginning of each day following, deposit with the Registrar-Recorder/County Clerk a sum as required by the Registrar-Recorder/County Clerk to cover the cost of the recount for that day. The Registrar-Recorder/County Clerk shall commence a recount no later than <u>Friday, August 26, 2016</u>. In the event the recount results in a determination that the candidate who requested the recount has received a plurality of the votes cast, all money deposited shall be returned to the candidate. The recount conducted by the Registrar-Recorder/County Clerk shall be open to the public.

28. In the event any candidate desires to protest the results of the election, he or she must file a written protest with the Executive Office of the Board of Supervisors no later than 5:00 p.m., <u>Friday, August 19, 2016</u>. The written protest must specify the grounds for the protest and be accompanied by supporting documentation.

29. The Board of Supervisors at its meeting on <u>Tuesday, September 20, 2016</u>, or on a date following the completion of any recount and/or investigation of a protest, shall declare the results official. The person receiving the highest number of votes shall be declared elected the Seventh Member. In the event two or more persons tie for first place, such persons shall determine, by drawing lots before the Board, which of them shall be elected. The Alternate Member shall be that candidate, if any, for the Seventh Member from the group under Government Code Section 31470.2 or 31470.4, or any other eligible Safety Member candidate, if there is no eligible candidate from the groups under Sections 31470.2 and 31470.4 which is not represented by the candidate who received the highest number of votes of all candidates in that group.

30. In lieu of declaring the results official, the Board of Supervisors may order a new election if the Board determines, on the basis of written protest or on its own motion, that any error, omission or neglect occurred attributable to the County in the

administration of the election sufficient to change the result. The rejection of a candidate's statement of qualifications by the Registrar-Recorder/County Clerk, or the failure of the Registrar-Recorder/County Clerk to reject a candidate's statement of qualifications shall not constitute grounds for a new election. Allegations of candidate misconduct shall not constitute grounds for a new election, but if later substantiated may lead to administrative discipline or criminal culpability.

31. Election material retained by the Executive Officer of the Board of Supervisors and nominating petitions and ballots retained by the Registrar-Recorder/County Clerk may be discarded or otherwise disposed of no earlier than sixty-two (62) days after the date of the final declaration of the election results by the Board of Supervisors. The Registrar-Recorder/County Clerk will further confirm with their selected vendor(s) that the electronic file is destroyed sixty-five (65) days after the date of final declaration of the election results by the Board of Supervisors.

32. The Executive Officer of the Board of Supervisors may, in the exercise of her discretion, implement additional procedures, as she may deem necessary in order to preserve a fair and equitable election process. The Executive Officer of the Board of Supervisors shall, within ten (10) days, notify the Board of Supervisors, the Boards of Investments and Retirement and all candidates of any additional procedures implemented pursuant to this provision.

The foregoing resolution was on the 12th day of April, 2016, adopted by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

Lori Glasgow, Executive Officer-
Clerk of the Board of Supervisors of the
County of Los Angeles

By: LaChelle Smitherman
Deputy

APPROVED AS TO FORM:
MARY WICKHAM
County Counsel

By Rene C. Gilbertson
Rene Gilbertson
Senior Deputy County Counsel

Attachment B

POWERS AND DUTIES

OF RETIREMENT BOARD MEMBERS

The Board of Retirement provides this summary to enable voters to evaluate candidates for the Board of Retirement. The Board urges voters to review this summary prior to voting.

The overall responsibility of the Board of Retirement is to oversee the administration of the retirement system and the retiree health care program. This requires the Board to meet twice each month unless otherwise specified, generally on the first Wednesday and second Thursday, with meetings generally lasting from 6 to 8 hours. In addition, the Board has established several committees to assist in carrying out its responsibilities. Some committees meet monthly; others meet every other month. Committee meetings may be held both before and after regular Board meetings, and at other times, and generally last 1 to 2 hours. In addition to the time required to attend meetings, considerable time is required to review applicable materials developed by staff and management.

Board members may also participate in state and national pension and retirement related organizations, including serving as an executive or committee member in these organizations. In addition to attending meetings, Government Code section 31522.8 requires Board members to complete 24 hours of education within two years of assuming office and 24 hours of education every two years the member continues to hold membership on the Board.

The general management of LACERA is under the Board of Retirement's direction. A few functions, however, are shared with the Board of Investments. The Boards of Retirement and Investments, acting jointly, adopt the annual budget covering LACERA's operations. The two Boards must also act jointly in employee relations matters, including the approval of class specifications for LACERA's employees, the approval of Memoranda of Understanding (MOU's) negotiated with SEIU Local 721, the union bargaining for represented employees of LACERA, and the approval of compensation to be provided to LACERA's nonrepresented employees.

Additionally, one of the most important - and by far the most time consuming - duties of a Board member is to review disability retirement applications and to participate in the Board's decision to grant or deny disability retirements. It is anticipated the Board of Retirement will process approximately 30 to 50 disability retirement cases per month. A Board member is obligated by law to carefully review each application and the medical evidence supporting the application. The Board member must then participate in the Board's deliberations and vote on the application.

Under Government Code Section 31522, as to those elected Board members who are also employed by the County or a participating district, these LACERA duties are included as part of their County or district employment. A Board member will be required to spend a great majority of their working time each month in carrying out all of their important LACERA duties and responsibilities.

The Board of Retirement administers a statutory retirement plan. This means that retirement benefits can only be provided if they have been authorized by the State Legislature in the County Employees Retirement Law of 1937, found in the California Government Code beginning at Section 31450. Retirement benefits not already authorized by the Retirement Law cannot be implemented by the Board of Retirement; rather, a bill must be processed through the Legislature to amend the Retirement Law. With only a few exceptions, the Legislature has required the County Board of Supervisors to adopt a resolution approving benefit enhancements before they can take effect.

Pursuant to Article XVI, section 17 of the California Constitution, Board of Retirement members are fiduciaries and are required to, "… discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. A retirement board's duty to its participants and their beneficiaries shall take precedence over any other duty."

The Board of Retirement has regular meetings on the first Wednesday and on the Thursday following the second Wednesday of each month. Meeting dates may be changed by formal action of the Board.

Board members are public officials under the Fair Political Practices Act, and are in positions that are subject to FPPC economic disclosure and annual reporting requirements. The Board of Retirement is not responsible for the investments of the Retirement Fund or for the adoption of funding policies and the setting of contribution rates. The Legislature has assigned those responsibilities to the Board of Investments.

APPROVED BY THE BOARD OF RETIREMENT ON FEBRUARY 11, 2016.

BR 2017 Powers & Duties Statement.docx

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FOR INFORMATION ONLY

December 20, 2019

TO: Trustees - Board of Investments

FROM: Esmeralda del Bosque, Senior Investment Officer
Trina Sanders, Investment Officer
Cindy Rivera, Senior Investment Analyst

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **REAL ESTATE PROCESS WORKFLOW FINDINGS - UPDATE**

BACKGROUND

At the July 2, 2019 Board of Investments ("BOI") Offsite, the Real Estate Process Workflow Team ("Team") presented findings and recommendations that resulted from the Team's process workflow project. The project documented and reviewed the specifics of the Investment Division's real estate operations, focusing on the separate account lifecycle, from property purchase and maintenance through the sale of a property. The workflow incorporated responsibilities from LACERA's real estate, legal, accounting, internal audit, and investment departments. The goal of the exercise was to identify ways to enhance operations, evaluate internal controls, mitigate inherent risk, and alleviate the time that LACERA staff dedicates to real estate related administrative tasks.

As a reminder, the Team that conducted the process workflow consisted of the four individuals at LACERA most familiar with the various operational aspects of LACERA's real estate investments:

- Esme del Bosque, Portfolio Analytics Sr. Investment Officer – Investment Division (Co-Lead)
- Trina Sanders, Real Estate Investment Officer – Investment Division (Co-Lead)
- Christine Roseland, Senior Staff Counsel – Legal Division
- Margaret Lei Chwa, Senior Accountant – Financial Services and Accounting Division

In conducting the process workflow, the Team identified four categories of potential operational improvements to facilitate enhanced investment operations for the 20 commingled funds and ~180 special purpose entities that hold title to LACERA's separate account properties. The July memo **(ATTACHMENT)** described four areas of improvement and noted that updates on completing tasks would be presented to the BOI. This memo serves as the first update and includes a high-level review of what is in progress as well as a status bar to track completion by percentage.

REAL ESTATE PROCESS IMPROVEMENTS UPDATE

The first category identified the need to have an independent book of record for real estate. Currently, LACERA's real estate consultant serves the dual role of investment consultant and book of record for real estate asset value and performance. One of the recommendations presented in July was to convert the Real Estate Administrator search that the Team had been working on from an RFI to an RFP and expand the search to include all alternative assets, incorporating private equity, hedge funds, and real assets. The BOI approved the search and the following lists out the services that the new administrator will provide.

Additionally, Meketa, LACERA's general consultant, is currently conducting a review of real estate performance measurement. This includes an analysis of a new procedure for reconciling valuation and returns between Townsend, the separate account managers, and audited financials. Meketa will provide a memo on the results of this review to BOI trustees in 1Q2020.

1 Independent Book of Record

Original Memo	Update
▪ Portfolio accounting ▪ Portfolio performance ▪ Capital call tracking and wire management ▪ Investment fee validation ▪ Program level compliance ▪ Reporting	▪ Through the Administrative Services RFP, we are pursuing an independent book of record ▪ The Administrative Services RFP was issued, responses are due on 12/30/19 ▪ There are 125+ questions that cover: - Organizational History - Professional Staff - Portfolio Performance - Capital Tracking and Wire Management - Fund Accounting - Investment Fee Validation - Program Level Compliance - Reporting: Exposure, Attribution, Statistics ▪ Target Date for Completion: 2Q2020 ▪ Staff developed a performance reconciliation process - Created a reconciliation procedure to compare Townsend's valuation and performance reports to the separate account manager, as well as to audited financials ▪ Meketa is currently reviewing staff's performance reporting and reconciliation procedures. A memo of findings will be presented to the BOI in 1Q2020
Status of Completion: ***20% Completed***	

The second group of improvements covered the separate account banking relationship with Bank of America. Bank of America maintains the account for each property and facilitates cash management and online banking. During the original State Street on-boarding work plan, the transfer of these accounts was contemplated, but not implemented; the team has re-engaged State Street as an option and worked to enhance safeguards with the current provider.

2 Enhance Fiduciary Safeguards with Banking Partner

Original Memo	Update
▪ Evaluate the feasibility of moving the advisor accounts to LACERA's custodian, State Street Bank ▪ Review authority levels of account access ▪ Set-up a system to reconcile activity and balances for each advisor account ▪ Meet with the bank to refine several day-to-day tasks - Improve cash management process by using more wires in lieu of physical checks - Review account opening/closing procedures - Assess record keeping practices	▪ The Process Workflow Team met with State Street to discuss if the advisor accounts could be moved to State Street - State Street is currently working with a team from different parts of the bank to review the feasibility of such a transfer ▪ Authority levels of account access are under review - Working with separate account advisors and LACERA divisions (e.g., FASD) to keep a current list of account users and ensure appropriate levels of access - Updating the security information of account signers and adding alternative methods of account access for critical account signers ▪ Met with Bank of America: LACERA is implementing various process enhancements and fraud protections - The account opening process has been streamlined - LACERA and bank staff collaborated to improve timing of KYC compliance - Working on having fraud protection on all bank accounts ▪ Developed standard forms to use across managers for procedures such as: - New account opening - Banking services enrollment - User access - Capital calls and distributions ▪ Written banking procedures are being reviewed and updated
Status of Completion: ***35% Completed***	

The Legal Division participates in the administration of the real estate program by handling documentation related to the lifecycle of separate account transactions. The third series of findings identified ways to improve legal aspects of real estate operations.

3 Separate Account Advisor Contract Revisions

Original Memo	Update
▪ Amend agreements to expand responsibilities as part of advisor's scope of work - Monitor and pay invoices and state registration fees - Engage financial auditors and tax preparers - Submit tax filings; monitor/pursue tax and unclaimed property related issues (refunds & reassessments)	▪ Staff is reviewing contract terms as a first step in identifying tasks that could potentially be transferred to the advisors
Status of Completion: ***10% Completed***	

The last set of improvements targets enhancement of internal processes.

4 Internal Process Enhancements

Original Memo	Update
▪ Separate account valuation/appraisal process: Consider hiring an appraisal advisory service provider - Re-evaluate project management and frequency of property appraisals - Independent reconciliation of appraisals by dedicated real estate experts ▪ Review internal wire authorization hierarchy ▪ Update wire process to mimic other LACERA asset classes ▪ LACERA's Internal Audit oversees real estate advisor and title holding company financial audits - If the audits reveal findings that are operational in nature, share with portfolio analytics team	▪ Appraisal Management RFP was issued; finalist recommendation to BOI by 1Q2020 ▪ The goal of the search is to identify a provider: - That will manage the annual appraisal process of separate account properties - Provide independent valuation of properties to LACERA's Alternative Asset Administrator in off-quarters - Conduct independent reconciliation of investment manager appraisals - Supply real estate specific performance, attribution, and peer universe reporting ▪ Review of internal wire authorization was completed ▪ Next rounds of internal audits of real estate advisors will be completed by 1Q2020 - Findings will be forwarded to portfolio analytics team
Status of Completion: ***50% Completed***	

CONCLUSION

A multi-departmental team of LACERA staff conducted a process workflow review of LACERA's real estate operations and provided a report of findings and recommendations to the BOI at the July 2019 meeting. The report identified four groups of potential operational improvements and described, in detail, the tasks staff would initiate for each category. This memo reviews the progress staff has made to date in fulfilling those tasks. Another update will be provided to BOI trustees in the second quarter of 2020.

Attachment

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

EDB:ts

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ATTACHMENT

June 21, 2019

TO: Each Member
Board of Investments

FROM: Esmeralda del Bosque, Senior Investment Officer
Trina Sanders, Investment Officer
Christine Roseland, Senior Staff Counsel
Margaret Lei Chwa, Senior Accountant

FOR: July 2, 2019 Board of Investments Meeting

SUBJECT: **REAL ESTATE PROCESS WORKFLOW FINDINGS AND RECOMMENDATIONS FOR AN ALTERNATIVE ASSETS ADMINISTRATOR AND TOTAL FUND PERFORMANCE MEASUREMENT PROVIDER**

RECOMMENDATIONS

1. Approve the proposed Minimum Qualifications ("MQs") thereby authorizing staff to initiate a Request for Proposal ("RFP") for an Alternative Assets Administrator;
2. Approve the proposed MQs thereby authorizing staff to initiate an RFP for a total Fund performance measurement provider

BACKGROUND

At the May Board of Investments ("BOI") meeting, staff presented an update on the Real Estate Administration Search ("RE RFI"). Staff noted that the RE RFI search team ("Team") had paused the search to complete a process workflow review for separate account real estate operations and stated that findings and recommendations from the review would be presented to the Board in July. This memo serves as that report. At the same meeting, the Board directed staff to provide enhanced reporting to include attribution versus benchmarks, fee attribution, fee monitoring for each asset class, and an on-going assessment of fees paid to investment managers compared to that manager's return/risk metrics. This memo contains recommendations to also satisfy that request.

REAL ESTATE SEPARATE ACCOUNT PROCESS IMPROVEMENTS

At the May BOI meeting, staff communicated that the Team completed Phase I and Phase II of the RE RFI search and paused to conduct a process workflow of real estate investment operations. The Team consists of the four individuals at LACERA most familiar with different operational aspects of LACERA's real estate investments:

Esme del Bosque, Portfolio Analytics Sr. Investment Officer - Investment Division (Co-Lead)
Trina Sanders, Real Estate Investment Officer - Investment Division (Co-Lead)
Christine Roseland, Senior Staff Counsel - Legal Division
Margaret Lei Chwa, Senior Accountant - Financial Services and Accounting Division

As a reminder, the process workflow documented and reviewed the specifics of the separate account lifecycle, from property purchase and general maintenance through the sale of a property. The workflow incorporated real estate, legal, accounting, internal audit, and investment responsibilities related to real estate operations to determine ways to enhance operations, evaluate internal controls, mitigate inherent risks, and alleviate the time LACERA staff dedicates to real estate related administrative tasks.

Out of that exercise, the Team has identified four categories of potential operational improvements that can facilitate enhanced investment operations for the 20 commingled funds and ~180 special purpose entities that hold title to LACERA's separate account properties. The first category of findings directly translates to the first recommendation set forth later in the memo. Categories two through four are tasks that staff will initiate and aim to complete over the next six to nine months.

The first set of operational enhancements covers the need to have an independent book of record. Again, the real estate consultant, Townsend, currently serves a dual role of investment advisor as well as book of record. The following lists out the services that an independent real estate administrator should provide.

1 Independent Book of Record

- Portfolio accounting
- Portfolio performance
  - Reconciliation of advisor and commingled fund manager data
  - Singular accounting and performance methodology
  - Multiple performance calculation types (IRR, time-weighted, etc.)
  - Market values and returns will be used for the Total Fund
- Capital call tracking and wire management
  - Track all capital calls and wires (currently, these tasks are conducted by different providers)
  - Monitor and process wires for straight-through processing into the accounting feed
  - On-line portal to eliminate the amount of manual processes that LACERA's FASD division conducts
- Investment fee validation
  - Independent party to re-create contractual waterfalls for each advisor and commingled fund
  - Quarterly fee reconciliation
- Program level compliance
  - Monitor actual vs. policy weights, geography, and limits by investment type
- Reporting
  - Exposure reports, multiple attribution views, portfolio statistics, analytics
  - Ability to run exposure and performance analysis "on the fly"

The second series of improvements concern the separate account banking relationship with Bank of America. Bank of America maintains the account for each property and facilitates cash management via wires, lockbox maintenance, and online banking. Notably, the transfer of these accounts was contemplated as part of the original State Street on-boarding work plan but was not implemented; the Team would like to revisit that decision.

2 Enhance Fiduciary Safeguards with Banking Partner

- Evaluate the feasibility of moving the advisor accounts to LACERA's custodian, State Street Bank
- Review authority levels of account access
- Set-up a system to reconcile activity and balances for each advisor account
- Meet with the bank to refine several day-to-day tasks
  - Improve cash management process by using more wires in lieu of physical checks
  - Review account opening/closing procedures
  - Assess record keeping practices

The Legal Division participates in the administration of the real estate program by handling the documentation relating to the transactions for separate account properties as well as the formation, management, and dissolution of the title holding entities formed to hold the properties. The third group of improvements identifies ways that legal aspects of real estate operations could be modified.

3 Separate Account Advisor Contract Revisions

- Amend agreements to expand responsibilities as part of advisors' scope of work
  - Monitor and pay invoices and state registration fees
  - Engage financial auditors and tax preparers
  - Submit tax filings; monitor/pursue tax and unclaimed property related issues (refunds & reassessments)

The last set of findings are to address internal processes that can be strengthened.

4 Internal Process Enhancements

- Separate account valuation/appraisal process: Consider hiring an appraisal advisory service provider
  - Re-evaluate project management and frequency of property appraisals
  - Independent reconciliation of appraisals by dedicated real estate experts
- Review internal wire authorization hierarchy
- Update wire process to mimic other LACERA asset classes
- LACERA's Internal Audit oversees real estate advisor and title holding company financials audits
  - If the audits reveal findings that are operational in nature, share with portfolio analytics team

As expressed above, the process review highlighted the need to reevaluate the timing and project management of the separate account real estate appraisal process. Currently, one-third of the portfolio is valued every year by an independent consultant. A consequence of appraising each property only one time every three years is that the market value provided for LACERA's total Fund value is calculated by the advisor for the subsequent eleven quarters. The Team believes it would be beneficial to obtain third-party appraisals on a more frequent basis to reflect the most current values for the real estate composite. This would also align LACERA's practice with industry standard.

In addition to reducing the time between independently appraising each property, the process may be enhanced by hiring a dedicated valuation advisory service provider. By hiring an independent valuation advisory service, LACERA will have direct access to a team of valuation experts with vast knowledge of practices at other pension funds and industry trends. This will facilitate the reconciliation of asset valuations with the investment advisors not only for the accounting book of record but will also establish independent appraisals when transitioning assets. Additionally, the advisory service typically provides analytics and attribution versus peers. The real estate team plans to discuss ways to improve the valuation process, including the possibility of launching a search for a valuation advisory service, in the near future.

RATIONALE FOR RECOMMENDATIONS

The process improvements mentioned above, along with the Board's request for enhanced attribution, fee, and analytics reporting points to two distinct recommendations. The commentary that follows provides a description and justification for each recommendation. The MQs and scope of work for each search are attached (**Attachment**).

Recommendation 1: Approve the proposed MQs thereby authorizing staff to initiate an RFP for an Alternative Assets Administrator.

As mentioned to the BOI in all memos regarding the real estate search, real estate is the only asset class that does not have an independent book of record. The first recommendation is to continue the search for a real estate administrator and expand it to cover all alternatives, including private equity, hedge funds, and real assets.

LACERA currently uses two different administrators for alternatives, both under the State Street umbrella: One for private equity and one for hedge funds. As we look to expand fund administration to real estate and real assets, it would be prudent to combine all alternative assets onto one platform as a means of streamlining LACERA's total Fund accounting, performance, analytics, and reporting. Combining the assets will also provide LACERA economies of scale via pricing power.

The timing of this search is ideal given that fund administration has advanced significantly over the last five to seven years: Administrators are employing teams dedicated to different sleeves of assets, including real estate and infrastructure, to augment standard fund accounting, cash flow administration, and performance calculation with asset-specific expertise. In addition, the industry has allocated significant investment into technology to heighten portfolio analytic capabilities.

Recommendation 2: Approve the proposed MQs thereby authorizing staff to initiate an RFP for a total Fund performance measurement provider.

At the May BOI meeting, the Board directed staff to provide enhanced reporting including attribution versus benchmarks, fee attribution, fee monitoring for each asset class, and an on-going assessment of fees paid to investment managers compared to that manager's return/risk metrics. As LACERA currently does not have the granular asset class analytics to provide that reporting, the Board asked that staff provide those portfolio and reporting enhancements over time. That the Board requested these enhancements in May was fortuitous, as both the RFI and process review deepened staff's knowledge of the capabilities and gaps in LACERA's analytical tools.

As the first step in meeting the Board's direction, it is recommended that an RFP for a total Fund performance measurement provider be issued. In the May memo, staff mentioned that the analytics and portfolio modeling tools of one of the RE RFI respondents were so robust, that the use of an administrator for total Fund performance became a legitimate consideration. LACERA can survey the marketplace for performance providers at the same time that the RFP for an alternative asset administrator is performed. It may be to LACERA's advantage to consolidate all services under one contract.

SUMMARY

The RE RFI launched in October of last year has led to the findings and recommendations presented in this memo. Many of the process enhancements identified in this memo are included in the scope of work for the alternative asset administrator RFP. Even more may be covered in the potential search for a real estate appraisal advisory service that the real estate team will review later this year. Staff will address the balance of the findings over the next six to nine months, with periodic progress updates provided to the Board.

Furthermore, the BOI, through its requests for advanced analytics, attribution, and fee reporting, has required staff to evaluate the marketplace for a total Fund performance provider given the gaps in LACERA's current analytical tools. Completing *both* the administrator and performance measurement searches are key to fulfilling the Board's reporting requests.

Staff anticipates that these searches will conclude at the beginning of 3Q2020, to coincide with fiscal year-end accounting and performance reporting. It should be noted that some of the costs for hiring additional services would be offset by eliminating duplicative functions. Any incremental costs will be reflected in subsequent budget requests.

CONCLUSION

At the May 2019 BOI meeting, staff provided an update for the RFI for real estate administration services. It was noted that staff paused the search to conduct a review of LACERA's separate account operations and that a report of relevant findings and recommendations would be provided to the Board at the July meeting. Also at the May meeting, the BOI requested that staff deliver a series of enhanced fee, attribution, and analytics reports over time.

This memo reviewed staff's findings as well as recommends expanding the real estate administration search to an RFP for an alternative asset administrator. The second recommendation is to initiate a search for a total Fund performance measurement provider. Both searches will improve transparency and provide advanced analytics for the Board and staff to monitor the LACERA Trust. In addition to the searches, staff will work on the real estate operational enhancements identified earlier in this memo over the next six to nine months.

Attachment

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

EDB:DR

ATTACHMENT

ALTERNATIVE ASSETS ADMINISTRATOR

MINIMUM QUALIFICATIONS

In order to be eligible, administrators must meet the following minimum qualifications:

1. Must have at least five (5) defined benefit clients of which three (3) are public pension plans.
2. Must have at least $25 billion in total assets under administration and at least $10 billion in alternative assets[1] as of June 30, 2019.
3. The service provider must have at least three (3) years of history providing administration services relating to alternative assets.

SCOPE OF WORK

The administrator will be required to fulfill the services listed below:

1. Serve as independent book of record
2. Provide portfolio accounting, including reconciliation
3. Provide portfolio performance with multiple performance methodologies
4. Construct composites and custom benchmarks
5. Provide capital call tracking and wire management, maintain a repository for manager data and wire documentation
6. Conduct investment fee validation
7. Monitor program-level compliance for each asset class (actual versus policy weights)
8. Deliver monthly and quarterly reporting, including portfolio exposure and analytics
9. Maintain a client portal to access data and reports

PROPOSED TIMELINE

Following is a proposed timeline for the search:

Phase	Steps	Actions	Timing
I	**RFP Design and Launch**	- Board approval of MQs - Publish the RFP document	3Q 2019
II	**RFP Evaluation**	- Staff to review and rank RFP responses, select semi-finalists	4Q 2019
III	**Semi-Finalist Evaluation**	- Staff to conduct in-person interviews, on-site diligence, and complete reference calls	1Q/2Q 2020
IV	**Potential Recommendation**	- Board Recommendation	3Q 2020

[1] Alternative assets include private equity, real estate, real assets, and hedge funds

TOTAL FUND PERFORMANCE MEASUREMENT PROVIDER

MINIMUM QUALIFICATIONS

In order to be eligible, the performance measurement provider must meet the following minimum qualifications:

1. Must have at least three (3) defined benefit plan clients, each with total assets of at least $10 billion as of June 30, 2019.
2. The service provider must have clients for which they calculate multi-asset class total fund performance as well as provide reconciliation and reporting services.
3. Must provide reporting with multiple performance calculation methodologies, attribution versus benchmark and peer universes, and portfolio analytics.
4. Performance measurement must observe the CFA Institute's Global Investment Performance Standards ("GIPS").

SCOPE OF WORK

The administrator will be required to fulfill the services listed below:

1. Performance calculation at security, strategy, and composite levels (daily and monthly)
2. Construct composites and custom benchmarks
3. Provide manager/composite performance attribution, universe comparison, portfolio characteristics, style analysis, and ex-post risk statistics
4. Deliver comprehensive monthly and quarterly reports on a timely basis
5. Experience calculating performance for commingled funds and alternative asset classes
6. Ability to customize performance calculation and reports, as needed
7. Provide research and consultancy to the client
8. Maintain a client portal to access the above

PROPOSED TIMELINE

Following is a proposed timeline for the search:

Phase	Steps	Actions	Timing
I	**RFP Design and Launch**	- Board approval of MQs - Publish the RFP document	3Q 2019
II	**RFP Evaluation**	- Staff to review and rank RFP responses, select semi-finalists	4Q 2019
III	**Semi-Finalist Evaluation**	- Staff to conduct in-person interviews, on-site diligence, and complete reference calls	1Q/2Q 2020
IV	**Potential Recommendation**	- Board Recommendation	3Q 2020

ATTACHMENT 2

Real Estate Process Workflow Findings and Service Provider Recommendations

Board of Investments

July 2, 2019

Esmeralda del Bosque – Senior Investment Officer
Trina Sanders – Investment Officer
Christine Roseland – Senior Staff Counsel
Margaret Lei Chwa – Senior Accountant

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Table of Contents

Background: Search Team


Esme del Bosque, Senior Investment Officer – Portfolio Analytics (Co-Lead)


Trina Sanders, Investment Officer – Real Estate (Co-Lead)


Christine Roseland , Senior Staff Counsel – Legal Division


Margaret Lei Chwa, Senior Accountant – Financial Services & Accounting Division

Background: From RE RFI to Findings and Recommendations

Q4 2018
- BOI approves new RE RFI
- RFI Questionnaire released
- Team reviews responses

Q1 2019
- Team conducts interviews
- Phase II scores complete
- Team pauses to conduct Real Estate separate account property investment process review

Q2 2019
- RE RFI Update presented to BOI (May 15)
- Process review finalized
- Team identifies findings and recommendations for BOI

July 2019
- Present Process Review Findings
- Recommend Searches:
  1. Alternatives Administrator;
  2. Total Fund Performance Provider

Process Workflow: Objectives

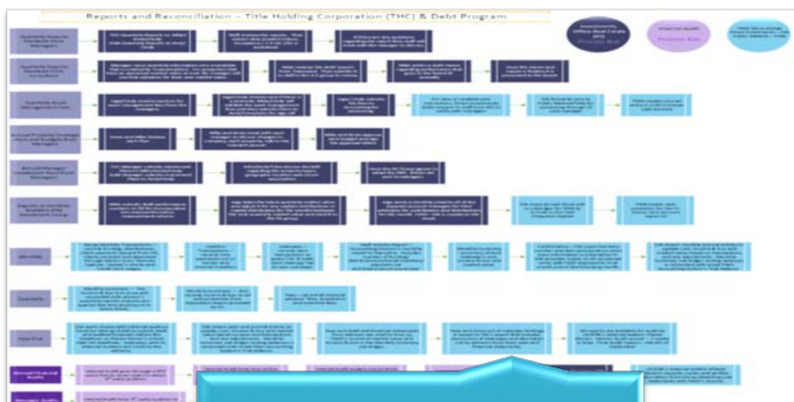
1. Document real estate tasks and responsibilities by LACERA department

2. Identify ways to:
   - Enhance real estate operations
   - Evaluate internal controls
   - Mitigate inherent risks

Process Workflow: Charts and Topics Covered

Account Formation, Financing, Disposition

Wires, Maintenance, Appraisals, Dissolution



Reports, Reconciliation, Audits

Process Workflow: 4 Categories of Findings

Independent Book of Record

- Portfolio accounting and performance
- Capital call tracking and wire management
- Investment fee validation
- Program level compliance
- Reporting

Enhance Fiduciary Safeguards with Banking Partner

- Evaluate moving advisor accounts to State Street Bank
- Review authority levels of account access
- Reconciliation of each advisor account
- Meet with bank to refine day-to-day tasks

Separate Account Advisor Contract Revisions

- Amend agreements to expand advisor responsibilities

Internal Process Enhancements

- Separate account appraisal process
- Review internal wire authorization
- Update wire process
- Review operational findings from LACERA's internal audits

Recommendations

Recommendation 1:
Authorize a Search for an Alternative Assets Administrator

The first process review finding covered the need for real estate to have an independent book of record.
This recommendation is a direct response to that finding.

Minimum Qualifications (as of 6.30.2019)

- $\geq$ 5 defined benefit clients; 3 public pension plans
- $\geq$ \$25 billion in Assets Under Administration (AUA);
  $\geq$ \$10 billion in Alternative Assets[1] AUA
- $\geq$ 3 years as an Alternative Asset Administrator

[1] Alternative assets include private equity, real estate, real assets, and hedge funds

BOI Reporting Requests

- At the May BOI meeting, the Board directed staff to deliver a series of enhanced reporting, over time
  - Attribution versus benchmarks
  - Fee Attribution
  - Fee Monitoring for each asset class
  - On-going assessment of fees paid to investment managers compared to that manager's return/risk metrics

- Timing of this request ideal
  - Both the RE RFI and process workflow review deepened staff's knowledge of capabilities and gaps in LACERA's analytical tools
  - RE RFI search also revealed that administrator analytics & portfolio tools have advanced significantly

The recommendation that follows is in direct response to the BOI's request for enhanced portfolio reporting.

Recommendation 2:
Authorize a Search for a Total Fund Performance Provider

Minimum Qualifications (as of 6.30.2019)

- $\geq$ 3 defined benefit clients with total assets of $\geq$ \$10 billion
- Must have multi-asset class total fund performance clients, as well as provide reconciliation and reporting services
- Must provide the following types of reporting:
  - Multiple performance calculation methodologies;
  - Attribution versus benchmark and peer universes;
  - Portfolio Analytics
- Must observe the CFA Institute's Global Investment Performance Standards (GIPS)

Next Steps

- If BOI approves the recommendations
  - Finalize RFP questionnaires
  - Launch both searches in 3Q2019
  - Look for a solution that may satisfy both the alternative assets and total Fund performance searches
    - Provide LACERA with operational benefits
    - Consolidating services under one contract may lead to economies of scale via pricing power

- RE RFI Team to work on operational enhancements identified in memo
  - Provide status updates to the Board
  - Aim to complete in six to nine months

Timeline

2019 Q3	2019 Q4	2020 Q1/Q2	2020 Q3
• **Memo to BOI: 1) on real estate process workflow findings; and 2) recommendations to launch alternative assets administrator & total Fund performance provider searches** • Publish the RFP questionnaire	• Review and rank RFP responses, select semi-finalists • Provide update to BOI on staff's progress of real estate operational enhancements	• Staff to conduct in-person interviews, on-site diligence, and complete reference calls • Provide second update on staff's progress of real estate operational enhancements	• Board recommendations

Questions and Discussion

L//.CERA

FOR INFORMATION ONLY

December 20, 2019

TO: Trustees - Board of Investments

FROM: Christopher J. Wagner CJW
Principal Investment Officer

David E. Simpson, CFA DES
Investment Officer

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **PRIVATE EQUITY SECONDARY SALE UPDATE**

In October 2018, guided by secondary advisor Greenhill & Co., LACERA sold 61 limited partnership interests valued at $805 million to a single buyer. To date, 59 of those interests have closed and are now registered in the name of the buyer. Due to regulatory annual quantity transfer restrictions, two of the interests remained in the LACERA portfolio. This memo serves to inform the Board that the sales of the final two interests, Madison Dearborn Capital Partners IV and V, will close on January 1, 2020 at the pricing agreed to in October 2018 net of any capital calls or distributions. These transactions conclude the 2018 secondary sale.

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

CW:DES:mm

FOR INFORMATION ONLY

December 20, 2019

TO: Trustees – Board of Investments

FROM: Jude Pérez
Principal Investment Officer

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **INVESTMENT POLICY STATEMENT UPDATE**

BACKGROUND

At the December 2019 Board of Investments ("Board") meeting, the Board approved changes to the Global Equity portfolio structure that included the following item:

1. Revise LACERA's Global Equity benchmark from the 80% MSCI ACWI IMI Index +20% MSCI World-ex US IMI Index Currency Hedged to the MSCI ACWI IMI Index effective July 1, 2019.

As a result of this action, the LACERA Investment Policy Statement ("IPS") has been updated to reflect the above mentioned change to the benchmark. Attached to this memo are both a clean version (**Attachment 1)** and redlined version (**Attachment 2)** of the changes made to the IPS. (*Appendix A. Investment Tables, Table 2: Benchmark. Page 17.*)

Attached are:

1. A clean version of the revised IPS (**Attachment 1)**
2. A redlined version of the revised IPS (**Attachment 2)**

Attachments

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JP:DR

ATTACHMENT 1

Table 2: Benchmark Table

Asset Class	Benchmark
Growth	Custom Blend
Global Equity	MSCI ACWI IMI
Private Equity	MSCI ACWI IMI + 200 bps (3-month lag)
Opportunistic Real Estate	NFI ODCE + 300 bps (3-month lag)
Credit-Oriented Fixed Income	Custom Blend
High Yield Bonds	Bloomberg Barclays U.S. High Yield
Bank Loans	Credit Suisse Leveraged Loans
Emerging Market Debt	50% JP Morgan EMBI GD/25% JP Morgan GBI-EM GD/25% JP Morgan CEMBI BD
Illiquid Credit	Bloomberg Barclays U.S. Aggregate + 250 bps
Real Assets & Inflation Hedges	Custom Blend
Core & Value-Added Real Estate	NFI ODCE + 50 bps (3-month lag)
Natural Resources/Commodities	50% Bloomberg Commodity/50% S&P Global LargeMidCap Commodity and Resources
Infrastructure	Dow Jones Brookfield Global Infrastructure
TIPS	Bloomberg Barclays U.S. TIPS
Risk Reducing & Mitigating	Custom Blend
Investment Grade Bonds	Bloomberg Barclays U.S. Aggregate TR
Diversified Hedge Fund Portfolio	Citigroup 3-Month U.S. Treasury Bill + 250bps
Cash	Citigroup 3-Month U.S. Treasury Bill
TOTAL FUND	Custom Blended Policy Benchmark

ATTACHMENT 2

Table 2: Benchmark Table

Asset Class	Benchmark
Growth	Custom Blend
Global Equity	~~80%~~ MSCI ACWI IMI ~~+ 20% MSCI World IMI ex U.S. Currency Hedged~~
Private Equity	MSCI ACWI IMI + 200 bps (3-month lag)
Opportunistic Real Estate	NFI ODCE + 300 bps (3-month lag)
Credit-Oriented Fixed Income	Custom Blend
High Yield Bonds	Bloomberg Barclays U.S. High Yield
Bank Loans	Credit Suisse Leveraged Loans
Emerging Market Debt	50% JP Morgan EMBI GD/25% JP Morgan GBI-EM GD/25% JP Morgan CEMBI BD
Illiquid Credit	Bloomberg Barclays U.S. Aggregate + 250 bps
Real Assets & Inflation Hedges	Custom Blend
Core & Value-Added Real Estate	NFI ODCE + 50 bps (3-month lag)
Natural Resources/Commodities	50% Bloomberg Commodity/50% S&P Global LargeMidCap Commodity and Resources
Infrastructure	Dow Jones Brookfield Global Infrastructure
TIPS	Bloomberg Barclays U.S. TIPS
Risk Reducing & Mitigating	Custom Blend
Investment Grade Bonds	Bloomberg Barclays U.S. Aggregate TR
Diversified Hedge Fund Portfolio	Citigroup 3-Month U.S. Treasury Bill + 250bps
Cash	Citigroup 3-Month U.S. Treasury Bill
TOTAL FUND	Custom Blended Policy Benchmark

FOR INFORMATION ONLY

December 30, 2019

To: Trustees,
Board of Retirement

Trustees,
Board of Investments

From: Jill P. Rawal,
Staff Counsel

For: Board of Investments Meeting of January 8, 2020
Board of Retirement Meeting of January 9, 2020

Subject: **Fair Political Practices Commission Form 806 – Agency Report of Public Official Appointments**

INTRODUCTION

The California Fair Political Practices Commission (FPPC) administers and enforces the Political Reform Act (Act).[1] The Act regulates campaign financing, conflicts of interest, lobbying, and governmental ethics. The Commission's objectives are to ensure that public officials act in a fair and unbiased manner in the governmental decision-making process, to promote transparency in government, and to foster public trust in the political system.

In determining conflicts of interest, a major component of the Act is the Form 700 – Statement of Economic Interests; however, there are a number of other disclosures set forth in the Act that pertain to conflicts of interests. One such disclosure is the Form 806 – Agency Report of Public Official Appointments.[2] This form is required when a public official is appointed to another body of the official's agency for which the official receives an additional stipend.

BACKGROUND

Generally, a public official at any level of state or local government has a prohibited conflict of interest and may not make, participate in making, or in any way use or attempt to use his or her official position to influence a governmental decision when he or she knows or has reason to know he or she has a disqualifying financial interest[3]. A public official has a disqualifying financial interest if the decision will have a reasonably foreseeable material financial effect, distinguishable from the effect on the public generally, directly on the official, or his or her immediate family.

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[1] California Gov. Code Section 81000, *et seq.*
[2] FPPC Reg. 18702.5.
[3] FPPC Reg. 18700.

One of the standards in determining whether a financial interest is material is whether there is a personal financial effect. A personal financial effect means the financial effect of a governmental decision on the personal finances of a public official or his or her immediate family.[4] As discussed below, there are certain exceptions to what is considered a personal financial effect.

APPLICATION

LACERA trustees that are either appointed or retired receive a $100 stipend per meeting, as well as $100 for each additional committee appointment, up to $500 per month, per Board. In order for this additional stipend to not be considered a personal financial interest resulting in a conflict of interest, the appointment and the amount of the stipend must be disclosed on the Form 806 and posted on lacera.com.[5]

As part of LACERA's ongoing commitment to increase compliance and transparency, beginning January 2020, staff will complete and post the Form 806 for all trustees receiving a stipend for serving on any of the Board of Retirement standing committees, the Board of Investment standing committees, or either joint committee. The form requires the disclosure of the committee name, the name of the appointed person, the appointment date and length of term, and the stipend for meeting and an estimated annual total. [Attachment A]. The form will be prepared by staff and verified by the CEO (or his designee); therefore, it will not place any additional responsibilities on the trustees.

No Board action is required. This memo is provided to the Board as an update on this new compliance practice.

Reviewed and Approved.

Steven P. Rice
Chief Counsel

Attachment

c: Santos H. Kreimann
JJ Popowich

[4] FPPC Reg. 18702.5(a).
[5] FPPC Reg. 18702.5(b)(3).

Attachment A

Agency Report of:
Public Official Appointments

A Public Document

California Form 806

For Official Use Only

1. Agency Name

Division, Department, or Region *(If Applicable)*

Designated Agency Contact *(Name, Title)*

Area Code/Phone Number	**E-mail**

Page _____ of _____

Date Posted: ____________________ *(Month, Day, Year)*

2. Appointments

Agency Boards and Commissions	Name of Appointed Person	Appt Date and Length of Term	Per Meeting/Annual Salary/Stipend
	Name ______ *(Last, First)* Alternate, if any ______ *(Last, First)*	____/____/____ *Appt Date* ______ *Length of Term*	*Per Meeting:* $ ______ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ______ *Other*
	Name ______ *(Last, First)* Alternate, if any ______ *(Last, First)*	____/____/____ *Appt Date* ______ *Length of Term*	*Per Meeting:* $ ______ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ______ *Other*
	Name ______ *(Last, First)* Alternate, if any ______ *(Last, First)*	____/____/____ *Appt Date* ______ *Length of Term*	*Per Meeting:* $ ______ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ______ *Other*
	Name ______ *(Last, First)* Alternate, if any ______ *(Last, First)*	____/____/____ *Appt Date* ______ *Length of Term*	*Per Meeting:* $ ______ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ______ *Other*

3. Verification

I have read and understand FPPC Regulation 18702.5. I have verified that the appointment and information identified above is true to the best of my information and belief.

______	______	______	______
Signature of Agency Head or Designee	*Print Name*	*Title*	*(Month, Day, Year)*

Comment: ____________________

Agency Report of:
Public Official Appointments

California Form 806

A Public Document

Background

This form is used to report additional compensation that officials receive when appointing themselves to positions on committees, boards, or commissions of another public agency or to a committee or position of the agency of which the public official is a member.

This form is required pursuant to FPPC Regulation 18702.5. Each agency must post on its website a single Form 806 which lists all the paid appointed positions to which an official will vote to appoint themselves. When there is a change in compensation or a new appointment, the Form 806 is updated to reflect the change. The form must be updated promptly as changes occur.

Instructions

This form must be posted prior to a vote (or consent item) to appoint a governing board member if the appointee will participate in the decision and the appointment results in additional compensation to the appointee.

FPPC Regulation 18702.5 provides that as long as the public is informed prior to a vote, an official may vote to hold another position even when the vote results in additional compensation.

Part 1. Agency Identification
Identify the agency name and information on who should be contacted for information.

Part 2. Appointments
Identify the name of the other agency, board or commission. List the name of the official, and an alternate, if any.

List the appointment date and the length of term the agency official will serve. Disclose the stipend provided per meeting and the estimated annual payment. The annual salary is an estimate as it will likely vary depending upon the number of meetings. It is not necessary to revise the estimate at the end of the calendar year.

Part 3. Verification
The agency head or his/her designee must sign the verification.

Frequently Asked Questions (FAQs)

1. When does an agency need to complete the Form 806?

   A Form 806 is required when an agency's board members vote to appoint a board member to serve on another governmental agency or position of the agency of which the official is a member and will receive additional compensation.

2. The city council votes to serve as the city's housing authority, a separate entity. Will the Form 806 be required?

   If the council members receive additional compensation for serving on the housing authority, the Form 806 is required.

3. Are appointments made by a governing board to appoint one of its members to serve as an officer of that board for additional pay (e.g., mayor) required to be disclosed on Form 806?

   No. FPPC Regulation 18702.5(b)(6) exempts from this requirement decisions to fill a position on the body of which the official is a member (such as a councilmember being appointed as mayor) despite an increase in compensation.

4. In determining the income, must the agency include mileage reimbursements, travel payments, health benefits, and other compensation?

   No. FPPC Regulation 18702.5 requires only the amount of the stipend or salary to be reported.

5. Which agency must post the Form 806?

   The agency that is voting to appoint a public official must post the Form 806 on its website. The agency that the official will serve as a member is not required to post the Form 806. The form is not sent to the FPPC.

6. When must the Form 806 be updated?

   The Form 806 should be amended promptly upon any of the following circumstances: (1) the number of scheduled meetings is changed, (2) there is a change in the compensation paid to the members, (3) there is a change in membership on the board or commission, or (4) there is a new appointment to a new agency.

7. If officials choose to recuse themselves from the decision and leave the room when a vote is taken to make an appointment, must the Form 806 be completed?

   No. The Form 806 is only required to identify those officials that will vote on an appointment in which the official will also receive additional compensation.

Privacy Information Notice

Information requested by the FPPC is used to administer and enforce the Political Reform Act. Failure to provide information may be a violation subject to penalties. All reports are public records available for inspection and reproduction. Direct questions to FPPC's General Counsel, Fair Political Practices Commission, 1102 Q Street, Suite 3000, Sacramento, CA 95811.

Agency Report of:
Public Official Appointments
Continuation Sheet

California Form 806
A Public Document

Page _____ of _____

1. Agency Name

Date Posted: ____________
(Month, Day, Year)

2. Appointments

Agency Boards and Commissions	Name of Appointed Person	Appt Date and Length of Term	Per Meeting/Annual Salary/Stipend
	▸Name ____ *(Last, First)* Alternate, if any ____ *(Last, First)*	▸ ___/___/___ *Appt Date* ▸ ____ *Length of Term*	▸ *Per Meeting:* $ ____ ▸ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ____ *Other*
	▸Name ____ *(Last, First)* Alternate, if any ____ *(Last, First)*	▸ ___/___/___ *Appt Date* ▸ ____ *Length of Term*	▸ *Per Meeting:* $ ____ ▸ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ____ *Other*
	▸Name ____ *(Last, First)* Alternate, if any ____ *(Last, First)*	▸ ___/___/___ *Appt Date* ▸ ____ *Length of Term*	▸ *Per Meeting:* $ ____ ▸ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ____ *Other*
	▸Name ____ *(Last, First)* Alternate, if any ____ *(Last, First)*	▸ ___/___/___ *Appt Date* ▸ ____ *Length of Term*	▸ *Per Meeting:* $ ____ ▸ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ____ *Other*
	▸Name ____ *(Last, First)* Alternate, if any ____ *(Last, First)*	▸ ___/___/___ *Appt Date* ▸ ____ *Length of Term*	▸ *Per Meeting:* $ ____ ▸ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ____ *Other*
	▸Name ____ *(Last, First)* Alternate, if any ____ *(Last, First)*	▸ ___/___/___ *Appt Date* ▸ ____ *Length of Term*	▸ *Per Meeting:* $ ____ ▸ *Estimated Annual:* ☐ $0-$1,000 ☐ $2,001-$3,000 ☐ $1,001-$2,000 ☐ ____ *Other*

FOR INFORMATION ONLY

December 16, 2019

TO: Trustees - Board of Investments

FROM: James Rice, CFA
Principal Investment Officer

Quoc Nguyen, CFA
Investment Officer

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: **2019 THIRD QUARTER HEDGE FUND PERFORMANCE REPORT**

Attached is the Hedge Fund Performance Report for the third quarter of 2019. The performance report provides a summary of the hedge fund program's ("Program") third quarter performance, Program objectives, and key portfolio return and allocation statistics. During the quarter, the Program returned 0.4%, which underperformed the 1.2% return of LACERA's primary hedge fund benchmark[1] and the 1.6% return of LACERA's secondary hedge fund benchmark, the HFRX Global Hedge Fund Index, which is comprised of hedge funds across broad strategy categories.

During the quarter, the Grosvenor and Direct Portfolios underperformed the primary hedge fund benchmark by 1.9% and 0.6%, respectively, while the Goldman Sachs Portfolio outperformed the benchmark by 0.1%. Over the last year, the Grosvenor, Goldman Sachs, and Direct Portfolios have underperformed the primary hedge fund benchmark by 7.0%, 3.1%, and 2.6%, respectively.

Expanding the merits beyond returns, the Program has met its objective to positively impact the risk-adjusted returns of the Total Fund since Program inception, as measured by the Sharpe ratio. The Program's 1.2 Sharpe ratio since inception compares favorably to a 1.0 Sharpe ratio for LACERA's public market assets composite over the same time period. Details of this and other metrics can be found in the attached Hedge Fund Performance Report.

As of September 30, 2019, the portfolio managed by Goldman Sachs had a relative value strategy level leverage measurement that exceeded portfolio guidelines. LACERA has had discussions with Goldman to address these guideline compliance matters.

[1] Reflects LACERA's hedge funds benchmark which is 90-Day U.S. T-Bills plus 250 basis points annually beginning March 1, 2019, and 90-Day U.S. T-Bills plus 500 basis points annually for periods prior to March 1, 2019.

Given items discussed and approved at the September 2019 Board of Investments meeting, LACERA made structural changes to the Program.

Attachment

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JR:QN:ct:mm

Performance

Hedge Fund Review

Q3 2019

ALBOURNE

Hedge Fund Market Review

Quarterly Index Returns

2017	2018	2018	2018	2018	2019	2019	2019
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Asia 6.6%					World 12.6%		
World 5.6%					Asia 10.3%		
Equity Hedge 3.3%					Equity Hedge 7.6%	World 4.2%	
CTA 2.4%			World 5.1%		CB Arb 5.1%	CTA 2.8%	
Macro 2.4%	Asset 2.3%	Distressed 2.7%	Rel Value 1.3%		Emerging 4.4%	Macro 2.6%	
Emerging 2.3%	EMN 0.8%	World 1.9%	Asset 1.3%		Event 4.2%	Emerging 1.9%	Macro 1.5%
EMN 2.0%	CB Arb 0.8%	Event 1.9%	Distressed 1.3%		Rel Value 3.8%	CB Arb 1.6%	CTA 1.3%
Event 1.9%	T-Bills 0.4%	Rel Value 1.3%	CB Arb 0.9%		Distressed 3.4%	Distressed 1.6%	Asset 1.2%
Distressed 1.6%	Rel Value 0.4%	Asset 1.1%	Event 0.8%		Macro 2.2%	Rel Value 1.6%	CB Arb 0.9%
CB Arb 1.3%	Equity Hedge 0.3%	Equity Hedge 0.8%	CTA 0.6%		Asset 1.7%	Equity Hedge 1.5%	EMN 0.8%
Asset 1.2%	Emerging 0.3%	T-Bills 0.5%	T-Bills 0.5%		EMN 1.4%	Asset 1.5%	World 0.7%
Rel Value 1.1%	Distressed 0.3%	EMN 0.1%	Equity Hedge 0.3%		CTA 1.3%	Event 1.3%	T-Bills 0.6%
T-Bills 0.3%	Event 0.1%	CB Arb 0.0%	EMN 0.1%	T-Bills 0.6%	T-Bills 0.6%	T-Bills 0.6%	Rel Value 0.2%
	Asia -0.5%	Macro -0.2%	Macro 0.0%	Asset -0.9%		EMN -0.2%	Event -0.7%
	World -1.2%	CTA -0.4%	Emerging -1.2%	CTA -1.5%		Asia -1.3%	Equity Hedge -1.1%
	Macro -1.6%	Emerging -3.0%	Asia -5.9%	EMN -1.9%			Distressed -1.6%
	CTA -1.9%	Asia -5.1%		Macro -2.3%			Emerging -1.7%
				Emerging -3.1%			Asia -1.9%
				Rel Value -3.4%			
				CB Arb -4.7%			
				Event -4.8%			
				Distressed -5.9%			
				Asia -6.1%			
				Equity Hedge -8.5%			
				World -13.3%			

Legend			
Asset	HFRI RV: Fixed Income - Asset Backed	CB Arb	HFRI RV: Fixed Income - Convertible Arbitrage
CTA	Barclay CTA	Event	HFRI All Event Driven
Rel Value	HFRI All Relative Value	Emerging	HFRI EM: Global
T-Bills	ML US T Bills	Equity Hedge	HFRI All Equity Hedge
EMN	HFRI EH: Equity MN	Asia	HFRI EM: Asia ex-Japan
Macro	HFRI All Macro	World	MSCI World
Distressed	HFRI ED: Distressed/Restructuring		

ALBOURNE

Source: Bloomberg, Hedge Fund Research (HFR), Inc.

Direct Hedge Snapshot – 3Q19

- Quarterly returns across some strategies tend to be more volatile compared to more Absolute Return strategies (as seen on prior slide)

- The LACERA direct portfolio focuses allocations to the first two strategies - Relative Value and to a lesser extent Macro strategies
  - Both strategies tend to have less structural equity or credit market sensitives vs Equity Hedge and Event Driven
  - These strategies held up better in the market volatility in August and September after trailing earlier in 2019
  - This also meant better capital preservation in 4Q18 benefiting the 12 month return

	3Q19	Year to Date	One Year
HFRI All Relative Value	0.08%	5.52%	1.96%
HFRI All Macro	1.69%	6.64%	4.23%
HFRI All Equity Hedge	-1.45%	7.66%	-1.49%
HFRI All Event Driven	-0.95%	4.56%	-0.50%
HFRI All Weighted Composite	-0.53%	6.68%	0.27%

Source: Bloomberg, Hedge Fund Research (HFR), Inc.

Hedge Fund Index Snapshot – 3Q19

- The LACERA Direct Hedge Fund portfolio has exhibited low volatility and low beta to equity markets (Portfolio Risk and Return Statistics slide in Hedge fund Performance Review)
  - Volatility of 2.25
  - Beta to MSCI World 0.06

- Additions have further balanced the portfolio's exposures and profile with the last two allocations occurring in 4Q18
  - Return profile over the year has benefited from the additional diversification
  - Year to date 2019 saw one modest negative month for the Direct program

- Staff is further building out candidates to compliment current funds and to enhance risk / return profile

Disclaimer

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LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

LACERA HEDGE FUND PERFORMANCE REVIEW

2019 Third Quarter January 8, 2020

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Plan Allocation Status

As of September 30, 2019

LACERA Assets	$58,441.5 mm
Diversified Hedge Funds Program Target Allocation at 4% of Total Fund	$2,337.7 mm
Grosvenor Diversified (San Gabriel) Portfolio Market Value	$485.8 mm
Total GCM Grosvenor Hedge Fund Program Market Value	**$485.8 mm**
Goldman Diversified Hedge Fund Portfolio Market Value	$414.5 mm
Total GSAM Goldman Sachs Hedge Fund Program Market Value	**$414.5 mm**
Direct Hedge Fund Portfolio Market Value[1]	$855.9 mm
Total Direct Hedge Fund Portfolio Market Value	**$855.9 mm**
Total Hedge Fund Program Market Value	**$1,756.2 mm**

[1] This market value includes $225 million in fund contributions made in September 2019 for an October 1, 2019 effective date and $25 million in fund contributions made in October 2019 for a November 1, 2019 effective date.

Portfolio Returns

As of September 30, 2019

Diversified Hedge Funds Composite

	Q3 2019	YTD	1 Year	3 Year	5 Year	ITD[2]
Diversified Hedge Funds Aggregate Portfolio [1]	0.38%	N/A	N/A	N/A	N/A	2.55%
Diversified Hedge Funds Benchmark[3]	1.18%	N/A	N/A	N/A	N/A	2.86%
HFRX Global Hedge Fund Index	1.61%	N/A	N/A	N/A	N/A	3.04%

Grosvenor Diversified Portfolio

				---- Annualized ----		
	Q3 2019	YTD	1 Year	3 Year	5 Year	ITD[4]
San Gabriel Fund, L.P.[1] (Diversified)	-0.72%	3.87%	-0.98%	2.89%	1.29%	3.25%
Diversified Hedge Funds Benchmark[3]	1.18%	4.10%	5.97%	6.09%	5.70%	5.46%
HFRX Global Hedge Fund Index	1.61%	5.90%	0.01%	1.93%	0.32%	1.54%

Goldman Sachs Diversified Portfolio

				---- Annualized ----		
	Q3 2019	YTD	1 Year	3 Year	5 Year	ITD[5]
Goldman Sachs Hedge Fund of Fund[1]	1.24%	6.41%	2.84%	3.61%	N/A	2.41%
Diversified Hedge Funds Benchmark[3]	1.18%	4.10%	5.97%	6.09%	N/A	5.79%
HFRX Global Hedge Fund Index	1.61%	5.90%	0.01%	1.93%	N/A	0.25%

Direct Hedge Fund Portfolio

				---- Annualized ----		
	Q3 2019	YTD	1 Year	3 Year	5 Year	ITD[6]
Direct Hedge Fund Portfolio[1]	0.59%	4.00%	3.38%	N/A	N/A	0.89%
Diversified Hedge Funds Benchmark[3]	1.18%	4.10%	5.97%	N/A	N/A	6.30%
HFRX Global Hedge Fund Index	1.61%	5.90%	0.01%	N/A	N/A	-0.20%

1 Portfolio returns are net of all fees and expenses.
2 ITD returns for the Diversified Hedge Funds Composite and benchmarks commence on 3/1/2019 (the inception date of the Composite).
3 Reflects hedge funds benchmark which is 90-Day U.S. T-Bills plus 250 basis points annually beginning 3/1/2019 and 90-Day U.S. T-Bills plus 500 basis points annually for periods prior to 3/1/2019.
4 ITD returns for San Gabriel Fund, L.P. and benchmarks commence on 10/1/2011 (the inception date of the Fund).
5 ITD returns for Goldman Sachs and benchmarks commence on 5/1/2015 (the inception date of the Fund).
6 ITD returns for Direct Hedge Fund Portfolio. and benchmarks commence on 4/1/2018 (the inception date of the Portfolio).

Past performance is not necessarily indicative of future results, and the performance of the portfolio could be volatile.

Portfolio Risk and Return Statistics

Program Inception Through September 30, 2019

LACERA Diversified Hedge Funds Portfolios

	Return [1]	Standard Deviation	Sharpe Ratio	Beta to MSCI ACWI	Inception
Total Diversified Hedge Funds Program[2]	3.57%	2.46%	1.20	0.13	10/1/2011
Grosvenor Diversified (San Gabriel)	3.25%	2.81%	0.93	0.16	10/1/2011
Goldman Sachs Diversified	2.41%	3.04%	0.44	0.14	5/1/2015
Direct Portfolio	0.89%	2.25%	(0.58)	0.06	4/1/2018

LACERA Custom Composites With and Without Hedge Funds

	Return [1]	Standard Deviation	Sharpe Ratio	Beta to MSCI ACWI	Inception
Total Public Equities, Fixed Income, Commodities and Cash	8.41%	7.69%	1.01	0.64	10/1/2011

The Hedge Fund Program’s 1.20 Sharpe ratio since inception compares favorably to a 1.01 Sharpe ratio for LACERA’s public market assets composite over the same time period. This indicates that the Program is meeting its primary objective by positively impacting the risk-adjusted returns of the Total Fund.

1. Returns are net of all fees and expenses and annualized for periods greater than one year.
2. The Diversified Hedge Funds composite began on 3/1/2019. For the purposes of calculating the return statistics of LACERA's Hedge Fund Program, the Hedge Funds Program's returns prior to 3/1/2019 were calculated as the weighted return of the Grosvenor Diversified, Goldman Sachs, and Direct Portfolios.

Portfolio Upside and Downside Capture

Program Inception Through September 30, 2019

LACERA Hedge Fund Portfolio Upside and Downside Capture Since October 2011 Inception

Relative to *MSCI ACWI IMI* :

	Upside Capture	Downside Capture	Up / Down Spread
Total Diversified Hedge Fund Program[1]	19%	12%	7%

Explanation:

Upside Capture: Using monthly returns for only those months when the MSCI ACWI generated positive returns, upside capture measures the share of the MSCI ACWI's return captured by the hedge fund program. Example: For a 19% upside capture, on average, the hedge fund program earns 0.19% for each 1% generated by the MSCI ACWI in its positively performing months.

Downside Capture: Using monthly returns for only those months when the MSCI ACWI generated negative returns, downside capture measures the share of the MSCI ACWI's return captured by the hedge fund program. Example: For a 12% downside capture, on average, the hedge fund program loses 0.12% for each 1% lost by the MSCI ACWI in its negatively performing months.

Up / Down Spread: Subtracting the Downside Capture from the Upside Capture determines the Up / Down Spread. A positive Up / Down Spread indicates that the hedge fund program has a greater degree of participation in market gains compared to market loses.

1 The Diversified Hedge Funds composite began on 3/1/2019. For the purposes of calculating the return statistics of LACERA's Hedge Fund Program, the Hedge Funds Program's returns prior to 3/1/2019 were calculated as the weighted return of GSAM, HF Direct and San Gabriel Portfolio

GCM GROSVENOR

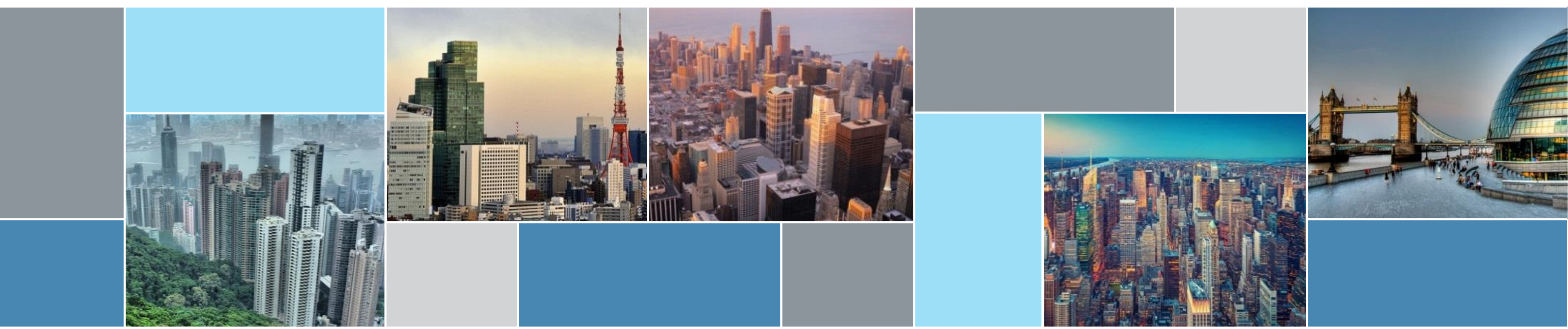
Grosvenor Capital Management

Portfolio Fund Summary

GCM GROSVENOR

Los Angeles County Employees Retirement Association

November 2019



The Notes and Disclosures following this presentation are an integral part of this presentation and must be read in connection with your review of this presentation.

This presentation has been prepared by Grosvenor Capital Management, L.P. and GCM Customized Fund Investment Group, L.P.

Portfolio Returns

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (September 30, 2019)

				Annualized		
	3Q19	YTD	1 Year	3 Year	5 Year	ITD[3]
San Gabriel Fund, L.P.[1] (Diversified)	-0.72%	3.87%	-0.98%	2.89%	1.29%	3.25%
Diversified Hedge Funds Benchmark[2]	1.18%	4.10%	5.97%	6.10%	5.70%	5.46%
HFRX Global Hedge Fund Index	1.61%	5.90%	0.01%	1.93%	0.32%	1.54%

1 Portfolio returns are net of fees and expenses.

2 Reflects hedge funds benchmark which is 90-Day U.S. T-Bills plus 250 basis points annually beginning March 1, 2019 and 90-Day U.S. T-Bills plus 500 basis points annually for periods prior to March 1, 2019.

3 ITD returns for San Gabriel Fund, L.P. and benchmarks commence on 10/1/2011 (the inception date of the Fund).

Hedge Fund Categories

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (September 30, 2019)

Hedge fund category	QTD opening balance	QTD subscriptions/ (redemptions)	QTD gain (loss)	QTD ending balance	% of NAV (As of 9/30/19)	Cumulative returns 3Q19	Cumulative returns YTD	Cumulative returns 1 Year	Annualized returns 3 Year	Annualized returns 5 Year	Annualized returns ITD[1]
Credit	$153,068,650	($3,057,598)	($1,497,314)	$148,513,737	30.57%	-0.99%	2.90%	-0.11%	4.84%	3.02%	6.54%
Equities	$74,435,403	$13,121,895	($2,350,146)	$85,207,152	17.54%	-2.81%	5.51%	-3.77%	1.76%	-0.23%	2.19%
Quantitative	$40,237,753	-	$1,462,992	$41,700,745	8.58%	3.64%	4.37%	0.71%	1.35%	-	-4.34%
Macro	$66,613,994	($22,225,409)	$49,658	$44,438,244	9.15%	0.11%	6.58%	1.77%	4.76%	5.42%	4.64%
Relative Value	$61,824,435	-	($121,875)	$61,702,559	12.70%	-0.20%	3.65%	2.23%	5.61%	3.98%	6.93%
Multi-Strategy	$76,256,452	-	($489,910)	$75,766,542	15.60%	-0.64%	3.96%	-1.23%	5.13%	3.71%	6.39%
Commodities	-	-	-	-	-	-	-	-	-	-	-8.14%
Portfolio Hedges	-	-	-	-	-	-	-	-	-	-	-13.68%
APPA[2]	($272,918)	-	$307,559	$34,641	0.01%	-	-	-	-	-	-
Other[3]	$6,739,958	($1,774,806)	($84,235)	$4,880,917	1.00%	-1.70%	5.22%	-	-	-	-
Uninvested[4]	$10,414,235	$13,935,918	($810,085)	$23,540,068	4.85%	-	-	-	-	-	-
Net asset value	**$489,317,962**	**-**	**($3,533,357)**	**$485,784,605**	**100.00%**	**-0.72%**	**3.87%**	**-0.98%**	**2.89%**	**1.29%**	**3.25%**

1 ITD returns for San Gabriel Fund, L.P. commence on 10/1/2011 (the inception date of the Fund).

2 Aggregated Prior Period Adjustment.

3 “Other” may include: residual positions with underlying funds from which the Fund has redeemed, and general trades.

4 “Uninvested” may include: cash, expenses, management fees, and net receivables/payables.

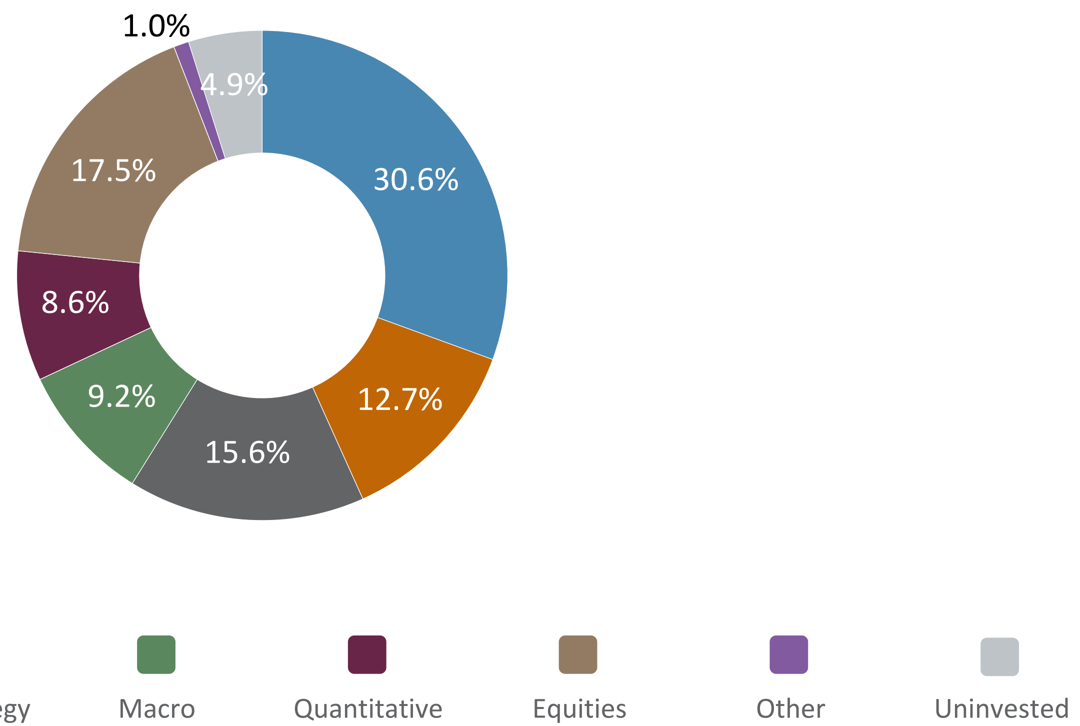
Past performance is not necessarily indicative of future results.

Hedge Fund Categories

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (September 30, 2019)

Asset allocation by strategy[1,2]

Percent of fund's net asset value



1 "Other" (if present) may include: residual positions with underlying funds from which the Fund has redeemed and general trades.

2 "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

Hedge Fund Program Summary

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (September 30, 2019)

						Cumulative returns			Annualized returns		
Fund Name	Fund Category	QTD ending balance	% of NAV (as of 9/30/19)	Start date of investment	End date of investment	3Q19	YTD	1 Year	3 Year	5 Year	ITD[1]
Fund 1	Credit	$19,341,521	3.98%	04/01/2013	Present	-1.37%	8.33%	2.67%	8.25%	5.40%	6.49%
Fund 2	Credit	$30,985,455	6.38%	02/01/2014	Present	1.41%	7.94%	3.86%	7.37%	5.64%	6.33%
Fund 3	Credit	$24,108,188	4.96%	06/01/2019	Present	-2.37%	-1.79%	-	-	-	-1.79%
Fund 4	Credit	$26,206,546	5.39%	10/01/2011	Present	-0.53%	3.73%	3.17%	5.51%	4.60%	8.02%
Fund 5	Credit	$23,048,250	4.74%	10/01/2011	Present	-3.82%	-1.46%	-4.19%	2.57%	1.79%	6.23%
Fund 6	Credit	$2,142,539	0.44%	10/01/2018	Present	-15.06%	-8.63%	-10.73%	-	-	-10.73%
Fund 7	Credit	$22,681,239	4.67%	12/01/2018	Present	2.32%	6.00%	-	-	-	6.30%
Fund 8	Equities	$14,466,320	2.98%	09/01/2019	Present	-1.59%	-1.59%	-	-	-	-1.59%
Fund 9	Equities	$12,417,768	2.56%	08/01/2019	Present	0.14%	0.14%	-	-	-	0.14%
Fund 10	Equities	$11,587,050	2.39%	07/01/2014	Present	-0.89%	6.67%	-3.56%	-1.16%	-3.33%	-3.30%
Fund 11	Equities	$18,182,930	3.74%	11/01/2017	Present	0.89%	9.53%	-2.57%	-	-	-1.40%
Fund 12	Equities	$26,811,815	5.52%	11/01/2015	Present	-7.64%	6.55%	-2.40%	12.61%	-	10.57%
Fund 13	Quantitative	$27,090,361	5.58%	08/01/2017	Present	6.35%	6.33%	2.60%	-	-	6.28%
Fund 14	Quantitative	$10,944,051	2.25%	05/01/2019	Present	-1.24%	1.33%	-	-	-	1.33%
Fund 15	Quantitative	$3,666,334	0.75%	05/01/2019	Present	-0.45%	1.84%	-	-	-	1.84%
Fund 16	Macro	$32,320,312	6.65%	04/01/2012	Present	1.76%	7.59%	0.73%	11.59%	13.69%	12.34%
Fund 17	Relative Value	$30,630,689	6.31%	03/01/2013	Present	0.42%	14.19%	9.69%	13.20%	11.98%	13.88%
Fund 18	Relative Value	$11,309,570	2.33%	06/01/2018	Present	0.82%	4.07%	3.68%	-	-	3.52%
Fund 19	Relative Value	$19,762,300	4.07%	05/01/2015	Present	-1.70%	2.09%	0.00%	7.17%	-	4.16%
Fund 20	Multi-Strategy	$25,972,175	5.35%	11/01/2011	Present	0.90%	5.32%	5.35%	6.88%	6.21%	7.68%
Fund 21	Multi-Strategy	$28,357,872	5.84%	04/01/2017	Present	-3.11%	3.92%	-1.43%	-	-	0.95%
Fund 22	Multi-Strategy	$21,436,495	4.41%	02/01/2017	Present	0.88%	2.42%	-7.96%	-	-	1.52%
Terminated Fund 58	Credit	-	-	11/01/2017	09/01/2019	-10.63%	-15.81%	-18.44%	-	-	-8.21%
Terminated Fund 59	Equities	$1,741,269	0.36%	08/01/2016	10/01/2019	1.53%	9.99%	1.88%	3.40%	-	4.20%
Terminated Fund 60	Macro	$12,117,932	2.49%	10/01/2013	10/01/2019	-4.04%	-0.94%	-4.31%	0.82%	2.02%	1.75%
APPA	APPA[2]	$34,641	0.01%	-	-	-	-	-	-	-	-
Other	Other[3]	$4,880,917	1.00%	-	-	-1.70%	5.22%	-	-	-	-
Total Uninvested	Uninvested[4]	$23,540,068	4.85%	-	-	-	-	-	-	-	-
Net asset value	**Totals**	**$485,784,605**	**100.00%**			**-0.72%**	**3.87%**	**-0.98%**	**2.89%**	**1.29%**	**3.25%**

1 ITD return for the portfolio commenced 10/1/2011.
Individual fund returns are over the period indicated by the Start date of investment and End date of investment columns in the table. Returns for funds for a period of 12 months or less are not annualized.

2 Aggregated Prior Period Adjustment.

3 "Other" may include: residual positions with underlying funds from which the Fund has redeemed and general trades.

4 "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

Past performance is not necessarily indicative of future results.

Portfolio Characteristics

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (Allocation Period: October 1, 2019)

San Gabriel Fund, L.P.[1,2,3]

Volatility	Guideline		Forward looking estimate	Realized since inception
Standard deviation of returns	5-7%		4.3%	2.8%
Sharpe Ratio	≥1.0		1.40	0.94

Diversification	Guideline	10-year historical simulation	Forward looking estimate[4]	Realized since inception
Portfolio beta to MSCI World	≤0.20	0.17	0.20	0.16

Manager Allocation	Guideline	Actual
Number of investment managers	20-40	20

Portfolio category	Compliance range	Target allocation	Capital allocation
Credit	10%-40%	30%	29.2%
Equities	5%-40%	20%	17.2%
Multi-Strategy	0%-30%	15%	15.6%
Relative Value	0%-30%	14%	12.7%
Macro	0%-20%	13%	6.7%
Commodities	0%-15%	2%	0.0%
Quantitative	0%-15%	5%	8.6%
Portfolio Hedges	0%-10%	1%	0.0%

Look-through exposure category
Corporate Credit
Mortgage Credit
Structured Credit
Relative Value
Other (Event Driven, Macro, Equities)

1 Forward looking estimates, historical simulation returns and related statistics are net of underlying manager fees/expenses but gross of GCM Grosvenor fees/expenses.

2 Assumes historical strategy correlation of 0.3.

3 Forward Looking Estimate Sharpe Ratio is calculated using the Risk-based Allocation Report as follows: Portfolio ROR less Risk-free Rate (assumed to be 2.25% for this purpose) divided by Portfolio Standard Deviation at the 0.3 correlation level.

4 Forward Looking Estimate Beta statistic is presented for informational purposes only.

The statistics on this slide are for illustrative purposes only, and are summarized from data contained in the attached portfolio reports. <u>The Notes and Disclosures following this presentation and accompanying the attached portfolio reports are integral to your review of the statistics, and must be read with your review of the statistics.</u>

Risk Summary

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (Allocation Period: October 1, 2019)

Leverage within hedge funds	Guideline maximum	Leverage
Hedge fund category		
Credit	4.0x	1.7x
Relative Value	8.0x	4.4x
Event Driven	4.0x	1.6x
Equities	4.0x	1.5x
Macro	20.0x	4.9x
Other	5.0x	2.9x

Downside loss	Guideline	Current portfolio
Actual allocation to single fund, % of capital (at market)	10% maximum	6.7%
% ROR impact of Severe Case Loss in a single fund (at market)	≥ -4%	-1.9%
Impact of Severe Case Loss in a single sub-strategy (at market)	≥ -7%	-2.4%
Fund-Level ROR Impact of Severe Case Loss (at market)	≥ -10%	-8.1%[1]
Actual allocation to GCM Special Opportunities Fund (at market)	10% maximum	5.8%
Actual allocation to Self Liquidating Funds, % of capital (at cost)	20% maximum	5.8%
Actual allocation to Self Liquidating Funds, % of capital (at market)	20% maximum	5.8%

Liquidity excluding fund level and discretionary gates, notice periods, and side pocket investments[2]	Guideline	Actual
Fund capital with lockups greater than 1 year but less than 2 years	<35%	6.8%
Fund capital with lockups greater than 2 years	0.0%	0.0%
Fund capital available within one year, after lockups expire, including the effect of mandatory investor-level gates	>65%	79.8%

1 Assumes historical strategy correlation of 0.4.

2 Self-liquidating Funds are considered to have lockups of greater than 1 year but less than 2 years for purposes of measuring the above constraints.

The statistics on this slide are for illustrative purposes only, and are summarized from data contained in the attached portfolio reports. <u>The Notes and Disclosures following this presentation and accompanying the attached portfolio reports are integral to your review of the statistics, and must be read with your review of the statistics.</u>

Compliance Summary

Los Angeles County Employees Retirement Association – San Gabriel Fund, L.P. (Allocation Period: October 1, 2019)

Category	In compliance	Discussion
Forward looking return, volatility, and correlation objectives	YES	-
Downside risk case	YES	-
Number of investment managers	YES	-
Allocation to single hedge fund	YES	-
Maximum leverage	YES	-
Lockups	YES	-
Fund liquidity after lockups	YES	-
Strategy categories	YES	-

Allocation Report – San Gabriel Fund, L.P.

GROSVENOR® Best Practices in Alternative Investments℠

Allocation Report
Expressed in US Dollars
Period is 01 October 2019

GABRIEL - San Gabriel Fund, L.P. (the "Fund")

Portfolio Fund Name	Ending Balance as of 30 September 2019 Before EOM Activity					Allocation as of 01 October 2019					
	Ending Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Credit											
Fundamental Credit											
Fund 1	19,341,521	25.98%	13.02%	4.18%	3.98%	-	19,341,521	25.98%	13.63%	4.39%	3.98%
Fund 2	30,985,455	41.63%	20.86%	6.70%	6.38%	-	30,985,455	41.63%	21.83%	7.03%	6.38%
Fund 3	24,108,188	32.39%	16.23%	5.22%	4.96%	-	24,108,188	32.39%	16.99%	5.47%	4.96%
Total - Fundamental Credit	74,435,164	100.00%	50.12%	16.10%	15.32%	-	74,435,164	100.00%	52.44%	16.88%	15.32%
Structured Credit											
Fund 4	26,206,546	100.00%	17.65%	5.67%	5.39%	-	26,206,546	100.00%	18.46%	5.94%	5.39%
Total - Structured Credit	26,206,546	100.00%	17.65%	5.67%	5.39%	-	26,206,546	100.00%	18.46%	5.94%	5.39%
Long/Short Credit											
Fund 5	23,048,250	100.00%	15.52%	4.99%	4.74%	(6,577,860)	16,470,390	100.00%	11.60%	3.74%	3.39%
Total - Long/Short Credit	23,048,250	100.00%	15.52%	4.99%	4.74%	(6,577,860)	16,470,390	100.00%	11.60%	3.74%	3.39%
Emerging Market Credit											
Fund 6	2,142,539	100.00%	1.44%	0.46%	0.44%	-	2,142,539	100.00%	1.51%	0.49%	0.44%
Total - Emerging Market Credit	2,142,539	100.00%	1.44%	0.46%	0.44%	-	2,142,539	100.00%	1.51%	0.49%	0.44%
Specialist Credit											
Fund 7	22,681,239	100.00%	15.27%	4.91%	4.67%	-	22,681,239	100.00%	15.98%	5.14%	4.67%
Total - Specialist Credit	22,681,239	100.00%	15.27%	4.91%	4.67%	-	22,681,239	100.00%	15.98%	5.14%	4.67%
Total Credit	148,513,737		100.00%	32.13%	30.57%	(6,577,860)	141,935,877		100.00%	32.20%	29.22%
Equities											
Directional Equity / U.S./Canada											
Fund 8	14,466,320	100.00%	16.98%	3.13%	2.98%	-	14,466,320	100.00%	17.33%	3.28%	2.98%
Total - Directional Equity / U.S./Canada	14,466,320	100.00%	16.98%	3.13%	2.98%	-	14,466,320	100.00%	17.33%	3.28%	2.98%
Fundamental Market Neutral Equity / Global											
Terminated Fund 59	1,741,269	12.30%	2.04%	0.38%	0.36%	(1,741,269)	-	-	-	-	-
Fund 9	12,417,768	87.70%	14.57%	2.69%	2.56%	-	12,417,768	100.00%	14.88%	2.82%	2.56%
Total - Fundamental Market Neutral Equity / Global	14,159,037	100.00%	16.62%	3.06%	2.91%	(1,741,269)	12,417,768	100.00%	14.88%	2.82%	2.56%

Ending Balance as of 30 September 2019 Before EOM Activity						Allocation as of 01 October 2019					
Portfolio Fund Name	Ending Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Event Driven											
Fund 10	11,587,050	100.00%	13.60%	2.51%	2.39%	-	11,587,050	100.00%	13.88%	2.63%	2.39%
Total - Event Driven	11,587,050	100.00%	13.60%	2.51%	2.39%	-	11,587,050	100.00%	13.88%	2.63%	2.39%
Specialist Equity / Asia											
Fund 11	18,182,930	100.00%	21.34%	3.93%	3.74%	-	18,182,930	100.00%	21.78%	4.12%	3.74%
Total - Specialist Equity / Asia	18,182,930	100.00%	21.34%	3.93%	3.74%	-	18,182,930	100.00%	21.78%	4.12%	3.74%
Specialist Equity / Global											
Fund 12	26,811,815	100.00%	31.47%	5.80%	5.52%	-	26,811,815	100.00%	32.12%	6.08%	5.52%
Total - Specialist Equity / Global	26,811,815	100.00%	31.47%	5.80%	5.52%	-	26,811,815	100.00%	32.12%	6.08%	5.52%
Total Equities	85,207,152		100.00%	18.43%	17.54%	(1,741,269)	83,465,883		100.00%	18.93%	17.18%
Quantitative											
Non-Directional Quantitative											
Fund 13	27,090,361	64.96%	64.96%	5.86%	5.58%	-	27,090,361	64.96%	64.96%	6.14%	5.58%
Fund 14	10,944,051	26.24%	26.24%	2.37%	2.25%	-	10,944,051	26.24%	26.24%	2.48%	2.25%
Fund 15	3,666,334	8.79%	8.79%	0.79%	0.75%	-	3,666,334	8.79%	8.79%	0.83%	0.75%
Total - Non-Directional Quantitative	41,700,745	100.00%	100.00%	9.02%	8.58%	-	41,700,745	100.00%	100.00%	9.46%	8.58%
Total Quantitative	41,700,745		100.00%	9.02%	8.58%	-	41,700,745		100.00%	9.46%	8.58%
Macro											
Diversified Macro											
Fund 16	32,320,312	100.00%	72.73%	6.99%	6.65%	-	32,320,312	100.00%	100.00%	7.33%	6.65%
Total - Diversified Macro	32,320,312	100.00%	72.73%	6.99%	6.65%	-	32,320,312	100.00%	100.00%	7.33%	6.65%
Specialist Macro											
Terminated Fund 60	12,117,932	100.00%	27.27%	2.62%	2.49%	(12,117,932)	-	-	-	-	-
Total - Specialist Macro	12,117,932	100.00%	27.27%	2.62%	2.49%	(12,117,932)	-	-	-	-	-
Total Macro	44,438,244		100.00%	9.61%	9.15%	(12,117,932)	32,320,312		100.00%	7.33%	6.65%
Relative Value											
Diversified Relative Value											
Fund 17	30,630,689	49.64%	49.64%	6.63%	6.31%	-	30,630,689	49.64%	49.64%	6.95%	6.31%
Fund 18	11,309,570	18.33%	18.33%	2.45%	2.33%	-	11,309,570	18.33%	18.33%	2.57%	2.33%
Fund 19	19,762,300	32.03%	32.03%	4.28%	4.07%	-	19,762,300	32.03%	32.03%	4.48%	4.07%
Total - Diversified Relative Value	61,702,559	100.00%	100.00%	13.35%	12.70%	-	61,702,559	100.00%	100.00%	14.00%	12.70%
Total Relative Value	61,702,559		100.00%	13.35%	12.70%	-	61,702,559		100.00%	14.00%	12.70%

Portfolio Fund Name	Ending Balance as of 30 September 2019 Before EOM Activity: Ending Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Allocation as of 01 October 2019: Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Multi-Strategy											
Diversified Multi-Strategy											
Fund 20	25,972,175	34.28%	34.28%	5.62%	5.35%	-	25,972,175	34.28%	34.28%	5.89%	5.35%
Fund 21	28,357,872	37.43%	37.43%	6.13%	5.84%	-	28,357,872	37.43%	37.43%	6.43%	5.84%
Fund 22	21,436,495	28.29%	28.29%	4.64%	4.41%	-	21,436,495	28.29%	28.29%	4.86%	4.41%
Total - Diversified Multi-Strategy	75,766,542	100.00%	100.00%	16.39%	15.60%	-	75,766,542	100.00%	100.00%	17.19%	15.60%
Total Multi-Strategy	75,766,542		100.00%	16.39%	15.60%	-	75,766,542		100.00%	17.19%	15.60%
Aggregated Prior Period Adjustment											
Multi-Manager											
APPA USD	34,641	100.00%	100.00%	0.01%	0.01%	-	34,641	100.00%	100.00%	0.01%	0.01%
Total - Multi-Manager	34,641	100.00%	100.00%	0.01%	0.01%	-	34,641	100.00%	100.00%	0.01%	0.01%
Total Aggregated Prior Period Adjustment	34,641		100.00%	0.01%	0.01%	-	34,641		100.00%	0.01%	0.01%
Other											
Other Investments											
Terminated Fund 54	937,835	19.21%	19.21%	0.20%	0.19%	(937,835)	-	-	-	-	-
Terminated Fund 51	1,248,366	25.58%	25.58%	0.27%	0.26%	-	1,248,366	31.75%	31.75%	0.28%	0.26%
Terminated Fund 25	1,641	0.03%	0.03%	0.00%	0.00%	-	1,641	0.04%	0.04%	0.00%	0.00%
Terminated Fund 50	1,716,876	35.18%	35.18%	0.37%	0.35%	-	1,716,876	43.67%	43.67%	0.39%	0.35%
Terminated Fund 32	164,541	3.37%	3.37%	0.04%	0.03%	(11,403)	153,138	3.89%	3.89%	0.03%	0.03%
Terminated Fund 46	729,298	14.94%	14.94%	0.16%	0.15%	-	729,298	18.55%	18.55%	0.17%	0.15%
Terminated Fund 4	82,359	1.69%	1.69%	0.02%	0.02%	-	82,359	2.09%	2.09%	0.02%	0.02%
Total - Other Investments	4,880,917	100.00%	100.00%	1.06%	1.00%	(949,238)	3,931,679	100.00%	100.00%	0.89%	0.81%
Total Other	4,880,917		100.00%	1.06%	1.00%	(949,238)	3,931,679		100.00%	0.89%	0.81%
Total ALLOCATED	462,244,537			100.00%	95.15%	(21,386,299)	440,858,238			100.00%	90.75%
Cash	21,825,724				4.49%	20,310,125	42,135,849				8.67%
Expenses	(215,524)				-0.04%	317	(215,207)				-0.04%
Management Fees	44				-	828,622	828,666				0.17%
Net Rec/(Pay)	1,929,824				0.40%	247,235	2,177,059				0.45%
Total UNALLOCATED	23,540,068				4.85%	21,386,299	44,926,367				9.25%
NET ASSET VALUE	485,784,605				100.00%	0	485,784,605				100.00%

Notes and Disclosures

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GCM Grosvenor considers numerous factors in evaluating and selecting investments, and GCM Grosvenor may use some or all of the processes described herein when conducting due diligence for an investment. Assets under management for hedge fund investments include all subscriptions to, and are reduced by all redemptions from, a GCM Fund effected in conjunction with the close of business as of the date indicated.

Goldman Sachs Asset Management

Portfolio Fund Summary

Hedge Fund Categories

Los Angeles County Employees Retirement Association (September 30, 2019]

								Cumulative Returns			Annualized Returns	
Hedge Fund Category	**Inception Date**	**End Date**	**QTD Opening Balance (as of 6/30/2019)**	**QTD Subscriptions/ (Redemptions)**	**QTD Gain/(Loss)**	**ing Balance(as of 9/3(**	**% of Nav (as of 09/30/2019)[2]**	**3Q2019[1]**	**YTD**	**1 Year**	**3 Year**	**ITD[1]**
Deep Basin Long-Short Fund LP Founder Shares	2/1/2019	-	10,555,300.00	-	(538,219.00)	10,017,081.00	2.00%	-5.10%	0.17%	0.17%	-	0.17%
Deep Basin Long-Short Fund LP Strategic Shares	11/1/2017	-	10,222,026.00	-	(595,295.00)	9,626,731.00	1.93%	-5.82%	-6.01%	-0.57%	-	3.57%
Kintbury Equity Fund LP Class F (NIE)	5/1/2015	-	23,204,790.68	-	1,211,694.58	24,416,485.26	4.89%	5.22%	4.52%	4.28%	2.04%	2.71%
Lakewood Capital Partners LP (NIE)	5/1/2015	-	21,525,125.90	-	676,463.94	22,201,589.84	4.44%	3.14%	18.42%	6.64%	5.31%	5.08%
Palestra Capital Part LP (Ser 3 Int 1.5/20)(NIE)	6/1/2015	-	31,667,278.95	-	1,225,960.81	32,893,239.76	6.58%	3.87%	22.36%	10.96%	11.05%	11.64%
PFM Therapeutics Fund, L.P. Class B (NIE)	7/1/2018	-	9,347,083.53	-	(1,474,471.38)	7,872,612.15	1.58%	-15.77%	-4.71%	-30.99%	-	-26.32%
Rubric Capital Partners LP Series F1 Interests NIE	3/1/2017	-	27,770,363.10	-	1,361,485.91	29,131,849.01	5.83%	4.90%	28.71%	10.14%	-	9.58%
The BosValen US Feeder Fund Class F (NIE)	8/1/2018	-	17,835,553.64	-	196,825.85	18,032,379.49	3.61%	1.10%	0.13%	-6.14%	-	-7.59%
Equity Long/Short			152,127,521.80	-	2,064,445.71	154,191,967.51	30.86%	1.36%	11.97%	1.77%	4.82%	4.44%
Empyrean Capital Fund LP (Class 2 Ser N - NIE)	7/1/2015	-	27,128,824.00	-	224,844.00	27,353,668.00	5.47%	0.83%	4.83%	0.45%	5.90%	4.84%
HG Vora Special Opportunities Fd LP Series 1 (NIE)	10/1/2017	-	28,089,519.00	-	34,534.00	28,124,053.00	5.63%	0.12%	7.93%	3.62%	-	6.06%
Manikay Onshore Fund LP Class A3 NIE	6/1/2018	-	28,625,293.54	-	735,667.98	29,360,961.52	5.88%	2.57%	17.85%	9.49%	-	9.03%
Palmetto Catastrophe Fd LP Q4 2018 Dev Cl H-SP	1/1/2019	-	3,593,489.00	(480,821.76)	(21,490.24)	3,091,177.00	0.62%	-0.63%	0.25%	0.25%	-	0.25%
Palmetto Catastrophe Fund L.P. Class H - NV	6/1/2018	-	10,945,200.00	480,821.76	271,216.24	11,697,238.00	2.34%	2.43%	5.01%	-1.95%	-	-0.20%
Taconic Opportunity Fund LP (CL AA, Non Lockup)	3/1/2018	-	32,039,875.42	-	25,884.83	32,065,760.25	6.42%	0.08%	3.99%	4.21%	-	5.44%
Warlander Partners, LP Class W (NIE)	2/1/2016	3/31/2019	-	-	-	-	-	-	-6.63%	9.00%	-1.88%	-2.73%
Event Driven			130,422,200.96	-	1,270,656.81	131,692,857.77	26.36%	0.97%	7.85%	3.67%	5.90%	3.19%
Arrowstreet Cap Brattle US Fdr II LP ClA Interests	9/1/2019	-	-	26,000,000.00	164,188.21	26,164,188.21	5.24%	0.63%	0.63%	0.63%	-	0.63%
D.E. Shaw Valence Fund, LLC (NIE)	2/1/2016	-	28,462,554.00	-	970,038.00	29,432,592.00	5.89%	3.41%	6.14%	4.02%	11.04%	11.11%
ExodusPoint Partners Fund LP Class C (NIE)	8/1/2018	-	18,822,535.00	-	155,247.00	18,977,782.00	3.80%	0.82%	4.07%	3.66%	-	3.58%
Holocene Advisors Fund LP Class AI-A LP Int (NIE)	5/1/2017	-	30,959,898.60	-	1,084,374.72	32,044,273.32	6.41%	3.50%	12.74%	14.14%	-	10.82%
Relative Value		-	78,244,987.60	26,000,000.00	2,373,847.93	106,618,835.53	21.34%	2.82%	8.16%	7.87%	7.56%	4.18%
Atreaus Fund, LP Class F	6/1/2017	2/28/2019	-	-	-	-	-	-	1.49%	-2.06%	-	-2.96%
Bridgewater Pure Alpha Major Markets II, LLC	5/1/2015	-	18,355,999.05	-	455,009.77	18,811,008.82	3.76%	2.48%	-12.34%	-3.45%	3.04%	-0.94%
Crabel Fund, L.P. (Class A, Fee Option 1 GS, 2/20)	7/1/2015	-	14,728,151.28	-	498,620.80	15,226,772.08	3.05%	3.39%	5.13%	6.10%	3.61%	4.59%
Dymon Asia Macro (US) Fund Class P (NIE)	6/1/2015	3/31/2019	-	-	-	-	-	-	-2.51%	-4.10%	0.41%	-1.41%
Edgestream Sumatra Fund LP	7/1/2015	-	9,842,528.81	-	323,461.14	10,165,989.95	2.03%	3.29%	7.49%	9.67%	2.37%	5.52%
EMSO Saguaro Ltd Class A-NV	2/1/2018	-	13,396,059.94	-	40,816.28	13,436,876.22	2.69%	0.30%	5.52%	3.84%	-	-0.28%
Glen Point Macro Fund LP Cl A NV USD Shares (NIE)	10/1/2017	-	16,321,558.25	-	(1,236,909.75)	15,084,648.50	3.02%	-7.58%	-5.39%	-1.54%	-	-5.20%
Stone Milliner Macro Fd Delaware LP Cl N (NIE)	1/1/2018	-	18,037,810.94	-	259,631.21	18,297,442.15	3.66%	1.44%	2.07%	0.17%	-	2.19%
The Winton Fund (US) LP	9/1/2016	-	10,128,897.44	-	360,918.56	10,489,816.00	2.10%	3.56%	3.78%	1.64%	3.51%	3.20%
Tactical Trading			100,811,005.71	-	701,548.01	101,512,553.72	20.32%	0.70%	-0.49%	1.32%	0.41%	-0.14%
Total Assets and Liabilities not Allocated to Underlying Managers of Los Angeles County Employees Retirement Association						5,652,110.36	1.13%					
Net Asset Value						499,668,324.89	100.00%					

[1] The LACERA Portfolio incepted on May 1, 2015. Returns less than 12 months are cumulative, not annualized. **Past performance does not guarantee future results, which may vary.**

[2] Based on the end equity value of the Fund.

Managers terminated prior to the current year are excluded. For ease of presentation, active and terminated managers are shown for the current year only.

Goldman Sachs Asset Management

Los Angeles County Employees Retirement Association

PERFORMANCE HIGHLIGHT SEPTEMBER 2019 | **ALTERNATIVE INVESTMENTS & MANAGER SELECTION (AIMS)**

GOLDMAN SACHS HEDGE FUND STRATEGIES (HFS)

Overview

Equity markets rose modestly during the month, with gains across Asia, Europe and North America and emerging markets. The US government bond yield curve steepened during the month and yields rose along the curve in Europe. The USD appreciated modestly during the month, notably versus JPY, NZD and EUR, despite depreciating versus MXN and GBP. WTI Crude Oil fell during the month while Brent Crude and Nat Gas rose. Copper ended the month higher while Gold fell during the month.

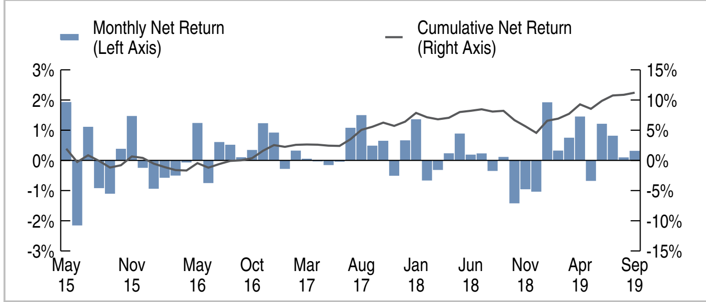
Global equity markets were slightly positive in September with markets moving on perceived positive developments in trade negotiations between the US and China. AIMS' equity long/short managers were negative for the month underperforming global equity markets. Negative excess returns were driven by a significant reversal of the momentum factor, which spilled over into the underperformance of defensive and growth stocks. At the sector level, exposure-adjusted underperformance was driven by long positions in health care, particularly by positions in pharmaceuticals and biotech, though solid performance from the sector's short book partially offset underperformance. In terms of positioning, managers continue to be most overweight health care, communication services and industrials whilst being underweight to consumer staples, financials and energy.

AIMS' event driven managers generated modestly positive performance in September. Equity sub-strategies generated performance which was slightly positive with mixed performance from security selection. Within the consumer staples sector, platform exposure to the equity of Diageo weighed on performance. In the industrials space, platform exposure to equity of Owens Corning boosted aggregate performance as the stock traded up following positive dividend guidance. Within credit, exposure to the debt of PG&E contributed to performance as bondholders released their updated bankruptcy proposal that would give bondholders control of the company. Additionally, exposure to the debt of Intelsat contributed to performance this month. More broadly, high yield corporate credit rallied on the month, which was additive to performance. Merger arbitrage exposure contributed to platform performance this month as spreads for commonly held deals on the platform modestly tightened in aggregate performing roughly in line with spreads for the broader universe.

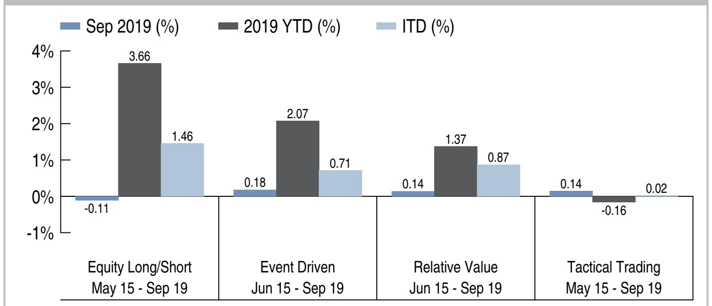
Macro managers generated gains during September, driven by trading in rates, equities, and currencies, despite losses in commodities. Managers benefitted from long exposure to equities in developed and emerging markets. In currencies, a long bias to the USD overall contributed positively to performance, notably versus JPY and EUR, though some managers realized losses from short exposure to commodity and emerging market currencies. Losses in commodities were driven by long exposure to gold. Emerging market managers generated gains during the month from long exposure to Argentine sovereign credit and Brazilian front-end rates, despite losses from short exposure to ZAR. Volatility trading managers realized losses during the month, hurt by falling short term implied volatility in US and European equity markets.

CTAs were down in September, but remain in the positive territory for the year. Monthly losses were concentrated within fixed income and commodities while trading in equities generated somewhat offsetting gains.

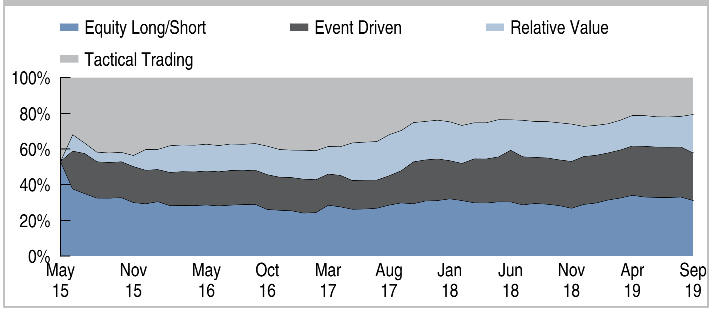
Monthly & Cumulative Net Returns[1]



Contribution to Return by Sector[2]



Historical Sector Allocations[3]



Performance & Characteristics[1]

	Cumulative (%)			Annualized (%)					Max.	MSCI World USD		Barclays Agg		Sharpe	Inception
	MTD	QTD	YTD	1Y	3Y	5Y	ITD[4]	Vol ITD	Drawdown (%)	Correlation	Beta	Correlation	Beta	Ratio[5]	Date
LACERA (A1)	**0.32**	**1.24**	**6.37**	2.78	3.60	N/A	2.44	3.05	-3.61	0.66	0.18	-0.09	-0.09	0.31	May 15
HFRX Global Hedge Fund Index	0.45	1.61	5.90	0.01	1.93	0.32	4.11	5.89	-25.21	0.63	0.27	0.07	0.12	0.28	Jan 98
MSCI World Index Hedged USD	2.21	1.27	17.37	1.84	9.54	N/A	5.79	11.46	-13.23	1.00	1.00	-0.12	-0.45	0.38	May 15
Bloomberg Barclays Aggregate Bond Index	-0.53	2.27	8.53	10.31	2.93	N/A	3.14	3.06	-3.28	-0.12	-0.03	1.00	1.00	0.54	May 15
3 Month Libor	0.18	0.56	1.88	2.57	1.93	N/A	1.48	0.24	N/A	N/A	N/A	N/A	N/A	N/A	May 15

For Existing Investors Only. Past performance does not guarantee future results, which may vary. Please refer to the Disclosures page for important information.

[1] This is the performance for Los Angeles County Employees Retirement Association (Class A, Series 1). Returns are net of underlying manager fees, Goldman Sachs incentive fees and Goldman Sachs management fees. Not all investors may be holders of this Class and this Class currently may not be available for purchase. Please refer to the offering documents of the Fund for a discussion of the differences among Classes that might impact performance. Returns are presented in USD. The figures published here are final and unaudited.

[2] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)*(1+r_2)*...*(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows: $[(1+r_1)*(1+r_2)*...*(1+r_n)]^{12/m}-1$.

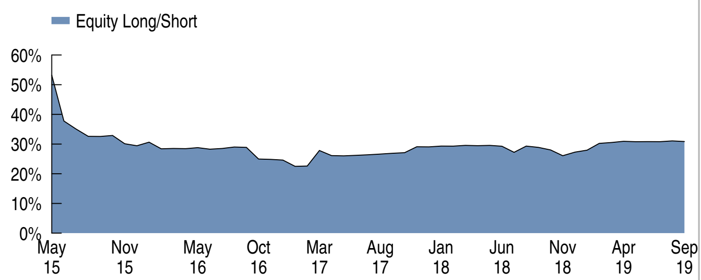
[3] Based on invested assets. The investment manager may change the allocations over time. The allocations noted should not be deemed representative of allocations in the future. All the allocations were done using the portfolio's valuations at month-end.

[4] Returns less than 12 months are cumulative, not annualized.

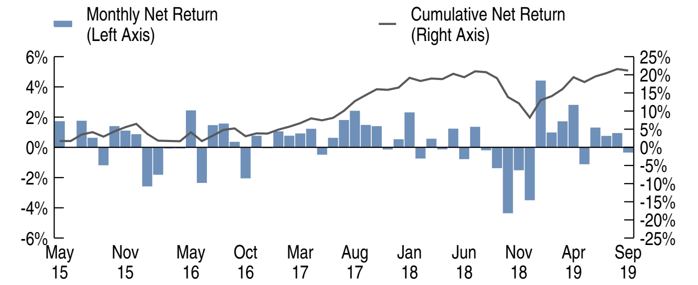
[5] The 3 Month Libor (USD) rate is used for this calculation.

Sector Level Returns — Equity Long/Short

Historical Sector Allocations[1]



Monthly & Cumulative Net Returns[2]

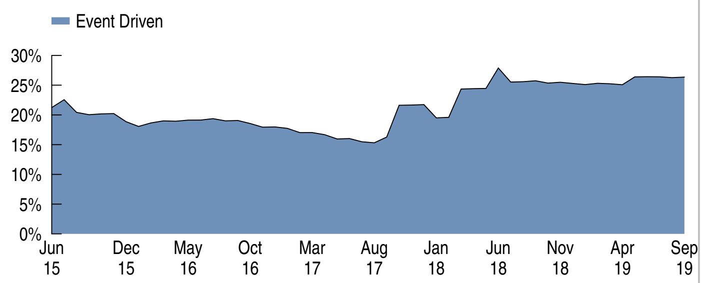


Performance & Characteristics[2,3]

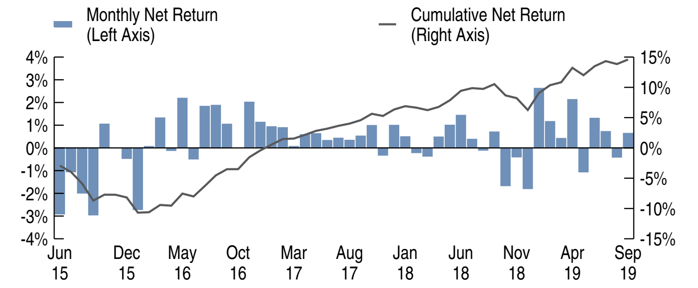
		Cumulative (%)			Annualized (%)					Max.	MSCI World USD		Barclays Agg		Sharpe	Inception	End
	Weight[1] (%)	MTD	QTD	YTD	1Y	3Y	5Y	ITD[4]	Vol ITD	Drawdown (%)	Correlation	Beta	Correlation	Beta	Ratio[5]	Date	Date
Performance	30.86	-0.35	1.36	11.97	1.77	4.82	N/A	4.44	5.59	-10.53	0.66	0.32	-0.05	-0.10	0.53	May 15	Sep 19
Contribution	N/A	-0.11	0.45	3.66	0.86	1.47	N/A	1.46	1.70	N/A	N/A	N/A	N/A	N/A	N/A	May 15	Sep 19

Sector Level Returns — Event Driven

Historical Sector Allocations[1]



Monthly & Cumulative Net Returns[2]



Performance & Characteristics[2,3]

		Cumulative (%)			Annualized (%)					Max.	MSCI World USD		Barclays Agg		Sharpe	Inception	End
	Weight[1] (%)	MTD	QTD	YTD	1Y	3Y	5Y	ITD[4]	Vol ITD	Drawdown (%)	Correlation	Beta	Correlation	Beta	Ratio[5]	Date	Date
Performance	26.36	0.66	0.97	7.85	3.67	5.90	N/A	3.19	4.39	-10.69	0.77	0.29	-0.15	-0.21	0.39	Jun 15	Sep 19
Contribution	N/A	0.18	0.26	2.07	1.02	1.30	N/A	0.71	0.98	N/A	N/A	N/A	N/A	N/A	N/A	Jun 15	Sep 19

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[1] Based on the end equity value of the Fund. Allocations as of September 2019. The investment manager may change the allocations over time. The allocations noted should not be deemed representative of allocations in the future.The returns presented above are net of manager management and incentive fees, but do not reflect the fees paid to GS Hedge Fund Strategies LLC.

[2] This is the performance for the Fund classification of Los Angeles County Employees Retirement Association. Returns are presented in USD. The figures published here are final and unaudited.

[3] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)*(1+r_2)*...*(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows: $[(1+r_1)*(1+r_2)*...*(1+r_n)]^{12/m}-1$.

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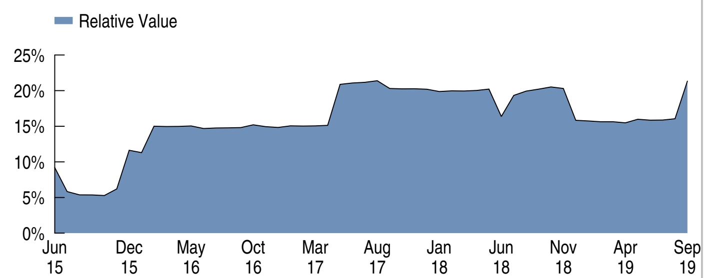
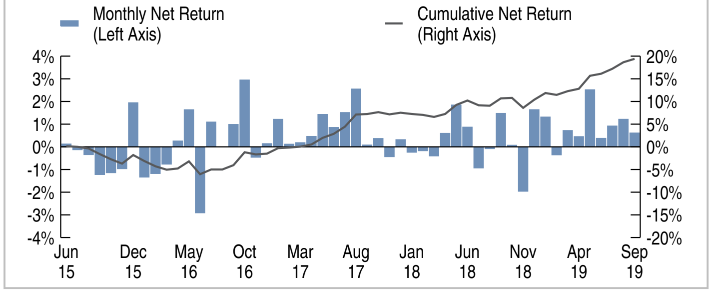
Sector Level Returns — Relative Value

Historical Sector Allocations[1]



Monthly & Cumulative Net Returns[2]

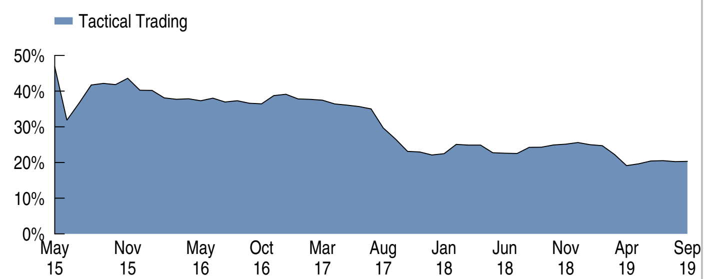


Performance & Characteristics[2,3]

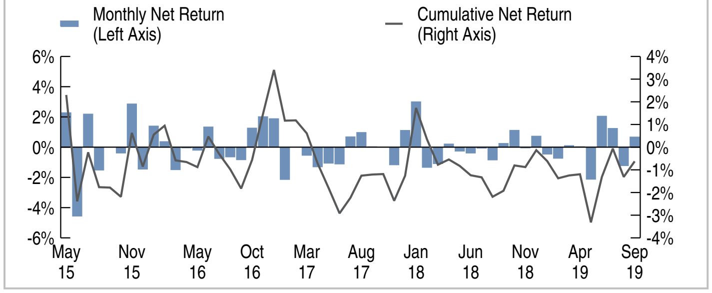
		Cumulative (%)			Annualized (%)					Max.	MSCI World USD		Barclays Agg		Sharpe	Inception	End
	Weight[1] (%)	MTD	QTD	YTD	1Y	3Y	5Y	ITD[4]	Vol ITD	Drawdown (%)	Correlation	Beta	Correlation	Beta	Ratio[5]	Date	Date
Performance	21.34	0.63	2.82	8.16	7.87	7.56	N/A	4.18	4.03	-6.17	-0.06	-0.02	0.04	0.05	0.66	Jun 15	Sep 19
Contribution	N/A	0.14	0.50	1.37	1.24	1.34	N/A	0.87	0.68	N/A	N/A	N/A	N/A	N/A	N/A	Jun 15	Sep 19

Sector Level Returns — Tactical Trading

Historical Sector Allocations[1]



Monthly & Cumulative Net Returns[2]



Performance & Characteristics[2,3]

		Cumulative (%)			Annualized (%)					Max.	MSCI World USD		Barclays Agg		Sharpe	Inception	End
	Weight[1] (%)	MTD	QTD	YTD	1Y	3Y	5Y	ITD[4]	Vol ITD	Drawdown (%)	Correlation	Beta	Correlation	Beta	Ratio[5]	Date	Date
Performance	20.32	0.70	0.70	-0.49	1.32	0.41	N/A	-0.14	4.90	-6.50	0.19	0.08	-0.08	-0.13	-0.33	May 15	Sep 19
Contribution	N/A	0.14	0.14	-0.16	0.30	0.10	N/A	0.02	1.69	N/A	N/A	N/A	N/A	N/A	N/A	May 15	Sep 19

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[5] The 3 Month Libor (USD) rate is used for this calculation.

Manager Level — Cumulative Manager Performance[1,2] (%)

Manager	Classification	Weight[3]	MTD Return	MTD Contrib.	QTD Return	QTD Contrib.	YTD Return	YTD Contrib.	Inception Date	End Date
Equity Long/Short										
Palestra Capital	United States	6.58	-1.06	-0.23	3.87	0.80	22.36	4.28	Jun 15	Sep 19
Rubric Capital	Global	5.83	1.48	0.27	4.90	0.88	28.71	4.65	Mar 17	Sep 19
Kintbury	Europe	4.89	-0.57	-0.09	5.22	0.79	4.52	0.76	May 15	Sep 19
Lakewood	Global	4.44	4.13	0.57	3.14	0.44	18.42	2.55	May 15	Sep 19
BosValen	Asia	3.61	-2.01	-0.24	1.10	0.13	0.13	0.02	Aug 18	Sep 19
Deep Basin Long-Short Fund	United States	2.00	-1.57	-0.10	-5.10	-0.35	0.17	0.02	Feb 19	Sep 19
Deep Basin Long-Short Fund	United States	1.93	-1.80	-0.11	-5.82	-0.39	-6.01	-0.47	Nov 17	Sep 19
PFM Therapeutics	Global	1.58	-7.54	-0.42	-15.77	-0.96	-4.71	-0.19	Jul 18	Sep 19
Overall		**30.86**	**-0.35**	**-0.11**	**1.36**	**0.45**	**11.97**	**3.66**	**May 15**	**Sep 19**
Event Driven										
Taconic Opportunity	Multi-Strategy	6.42	0.21	0.05	0.08	0.02	3.99	0.83	Mar 18	Sep 19
Manikay Class A3	Multi-Strategy	5.88	2.66	0.58	2.57	0.56	17.85	3.76	Jun 18	Sep 19
HG Vora	Multi-Strategy	5.63	-0.04	-0.01	0.12	0.03	7.93	1.74	Oct 17	Sep 19
Empyrean Capital Partners	Multi-Strategy	5.47	-0.43	-0.09	0.83	0.17	4.83	1.03	Jul 15	Sep 19
Palmetto Catastrophe Fund (Class H -NV)	Credit Opps - Dist	2.34	1.61	0.14	2.43	0.21	5.01	0.42	Jun 18	Sep 19
Palmetto Catastrophe Fund (Class H - SP)	Credit Opps - Dist	0.62	-0.67	-0.02	-0.63	-0.02	0.25	0.01	Jan 19	Sep 19
Warlander	Credit Opps - Dist	N/A	N/A	N/A	N/A	N/A	-6.63	-0.10	Feb 16	Mar 19
Overall		**26.36**	**0.66**	**0.18**	**0.97**	**0.26**	**7.85**	**2.07**	**Jun 15**	**Sep 19**
Relative Value										
Holocene	Equity Market Neutral	6.41	-0.13	-0.04	3.50	1.39	12.74	4.83	May 17	Sep 19
D.E. Shaw Valence Fund	Equity Market Neutral	5.89	1.67	0.46	3.41	1.08	6.14	2.06	Feb 16	Sep 19
Arrowstreet Global Long/Short Equity Fund	Equity Market Neutral	5.24	0.63	0.15	0.63	0.15	0.63	0.15	Sep 19	Sep 19
ExodusPoint	Multi-Strategy	3.80	0.31	0.06	0.82	0.18	4.07	0.96	Aug 18	Sep 19
Overall		**21.34**	**0.63**	**0.14**	**2.82**	**0.50**	**8.16**	**1.37**	**Jun 15**	**Sep 19**
Tactical Trading										
Bridgewater Pure Alpha Major Markets II	Macro	3.76	5.75	1.01	2.48	0.45	-12.34	-2.29	May 15	Sep 19
Stone Milliner Macro	Macro	3.66	-1.33	-0.25	1.44	0.25	2.07	0.38	Jan 18	Sep 19
Crabel	Managed Futures	3.05	-1.01	-0.15	3.39	0.49	5.13	0.77	Jul 15	Sep 19
Glen Point Global Macro	Macro	3.02	1.01	0.15	-7.58	-1.21	-5.39	-0.84	Oct 17	Sep 19
Emso Saguaro	Macro	2.69	1.63	0.21	0.30	0.04	5.52	0.65	Feb 18	Sep 19
Winton Diversified Futures Fund (US) L.P	Managed Futures	2.10	-2.70	-0.29	3.56	0.35	3.78	0.39	Sep 16	Sep 19
Edgestream (Sumatra/Nias)	Managed Futures	2.03	0.06	0.01	3.29	0.32	7.49	0.66	Jul 15	Sep 19
Dymon Asia Macro Fund	Macro	N/A	N/A	N/A	N/A	N/A	-2.51	-0.31	Jun 15	Mar 19
Atreaus (Class F)	Macro	N/A	N/A	N/A	N/A	N/A	1.49	0.14	Jun 17	Feb 19
Overall		**20.32**	**0.70**	**0.14**	**0.70**	**0.14**	**-0.49**	**-0.16**	**May 15**	**Sep 19**

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[2] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)*(1+r_2)*...*(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows: $[(1+r_1)*(1+r_2)*...*(1+r_n)]^{12/m}-1$. Manager contributions are made to the Sector level while Sector contributions are made to the fund level.
[3] Based on the end equity value of the Fund. Allocations as of September 2019. The investment manager may change the allocations over time. The allocations noted should not be deemed representative of allocations in the future. Historical sector performance and contributions reflect both active and terminated managers. Managers terminated prior to the current year are excluded. For ease of presentation, active and terminated managers are shown for the current year only.

Manager Level — Annualized Manager Performance[1,2] (%)

Manager	Classification	Weight[3]	1 Year Return	1 Year Contrib.	3 Year Return	3 Year Contrib.	5 Year Return	5 Year Contrib.	ITD[4] Return	ITD[4] Contrib.	Vol ITD	Inception Date	End Date
Equity Long/Short													
Palestra Capital	United States	6.58	10.96	2.19	11.05	2.25	N/A	N/A	11.64	2.23	8.33	Jun 15	Sep 19
Rubric Capital	Global	5.83	10.14	1.72	N/A	N/A	N/A	N/A	9.58	1.78	10.73	Mar 17	Sep 19
Kintbury	Europe	4.89	4.28	0.71	2.04	0.24	N/A	N/A	2.71	0.46	10.17	May 15	Sep 19
Lakewood	Global	4.44	6.64	0.98	5.31	0.94	N/A	N/A	5.08	0.94	10.77	May 15	Sep 19
BosValen	Asia	3.61	-6.14	-0.52	N/A	N/A	N/A	N/A	-7.59	-0.62	5.59	Aug 18	Sep 19
Deep Basin Long-Short Fund	United States	2.00	N/A	N/A	N/A	N/A	N/A	N/A	0.17	0.02	N/A	Feb 19	Sep 19
Deep Basin Long-Short Fund	United States	1.93	-0.57	-0.07	N/A	N/A	N/A	N/A	3.57	0.22	10.27	Nov 17	Sep 19
PFM Therapeutics	Global	1.58	-30.99	-2.50	N/A	N/A	N/A	N/A	-26.32	-2.08	21.35	Jul 18	Sep 19
Overall		**30.86**	**1.77**	**0.86**	**4.82**	**1.47**	**N/A**	**N/A**	**4.44**	**1.46**	**5.59**	**May 15**	**Sep 19**
Event Driven													
Taconic Opportunity	Multi-Strategy	6.42	4.21	0.87	N/A	N/A	N/A	N/A	5.44	1.06	2.03	Mar 18	Sep 19
Manikay Class A3	Multi-Strategy	5.88	9.49	2.51	N/A	N/A	N/A	N/A	9.03	2.10	11.33	Jun 18	Sep 19
HG Vora	Multi-Strategy	5.63	3.62	0.83	N/A	N/A	N/A	N/A	6.06	1.35	4.88	Oct 17	Sep 19
Empyrean Capital Partners	Multi-Strategy	5.47	0.45	0.10	5.90	1.47	N/A	N/A	4.84	1.20	4.06	Jul 15	Sep 19
Palmetto Catastrophe Fund (Class H -NV)	Credit Opps - Dist	2.34	-1.95	-0.41	N/A	N/A	N/A	N/A	-0.20	-0.15	4.98	Jun 18	Sep 19
Palmetto Catastrophe Fund (Class H - SP)	Credit Opps - Dist	0.62	N/A	N/A	N/A	N/A	N/A	N/A	0.25	0.01	N/A	Jan 19	Sep 19
Warlander	Credit Opps - Dist	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.73	-0.34	8.48	Feb 16	Mar 19
Overall		**26.36**	**3.67**	**1.02**	**5.90**	**1.30**	**N/A**	**N/A**	**3.19**	**0.71**	**4.39**	**Jun 15**	**Sep 19**
Relative Value													
Holocene	Equity Market Neutral	6.41	14.14	5.49	N/A	N/A	N/A	N/A	10.82	3.58	5.12	May 17	Sep 19
D.E. Shaw Valence Fund	Equity Market Neutral	5.89	4.02	1.64	11.04	3.21	N/A	N/A	11.11	3.26	4.76	Feb 16	Sep 19
Arrowstreet Global Long/Short Equity Fund	Equity Market Neutral	5.24	N/A	N/A	N/A	N/A	N/A	N/A	0.63	0.15	N/A	Sep 19	Sep 19
ExodusPoint	Multi-Strategy	3.80	3.66	0.86	N/A	N/A	N/A	N/A	3.58	0.82	1.24	Aug 18	Sep 19
Overall		**21.34**	**7.87**	**1.24**	**7.56**	**1.34**	**N/A**	**N/A**	**4.18**	**0.87**	**4.03**	**Jun 15**	**Sep 19**
Tactical Trading													
Bridgewater Pure Alpha Major Markets II	Macro	3.76	-3.45	-0.66	3.04	0.35	N/A	N/A	-0.94	-0.03	14.24	May 15	Sep 19
Stone Milliner Macro	Macro	3.66	0.17	0.10	N/A	N/A	N/A	N/A	2.19	0.40	4.01	Jan 18	Sep 19
Crabel	Managed Futures	3.05	6.10	0.86	3.61	0.48	N/A	N/A	4.59	0.55	8.64	Jul 15	Sep 19
Glen Point Global Macro	Macro	3.02	-1.54	-0.43	N/A	N/A	N/A	N/A	-5.20	-0.68	13.45	Oct 17	Sep 19
Emso Saguaro	Macro	2.69	3.84	0.47	N/A	N/A	N/A	N/A	-0.28	-0.02	4.94	Feb 18	Sep 19
Winton Diversified Futures Fund (US) L.P	Managed Futures	2.10	1.64	0.21	3.51	0.34	N/A	N/A	3.20	0.32	8.43	Sep 16	Sep 19
Edgestream (Sumatra/Nias)	Managed Futures	2.03	9.67	0.82	2.37	0.24	N/A	N/A	5.52	0.39	6.46	Jul 15	Sep 19
Dymon Asia Macro Fund	Macro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.41	-0.26	6.80	Jun 15	Mar 19
Atreaus (Class F)	Macro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.96	-0.27	5.26	Jun 17	Feb 19
Overall		**20.32**	**1.32**	**0.30**	**0.41**	**0.10**	**N/A**	**N/A**	**-0.14**	**0.02**	**4.90**	**May 15**	**Sep 19**

For Existing Investors Only. Past performance does not guarantee future results, which may vary. Please refer to the Disclosures page for important information.

[1] The returns presented above are net of manager management and incentive fees, but do not reflect the fees paid to GS Hedge Fund Strategies LLC.

[2] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)*(1+r_2)*...*(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows: $[(1+r_1)*(1+r_2)*...*(1+r_n)]^{12/m}-1$. Manager contributions are made to the Sector level while Sector contributions are made to the fund level.

[3] Based on the end equity value of the Fund. Allocations as of September 2019. The investment manager may change the allocations over time. The allocations noted should not be deemed representative of allocations in the future. Historical sector performance and contributions reflect both active and terminated managers. Managers terminated prior to the current year are excluded. For ease of presentation, active and terminated managers are shown for the current year only.

[4] Returns less than 12 months are cumulative, not annualized.

LACERA

Investment Guidelines Summary

Goldman Sachs Asset Management

Performance Objectives	Investment Guidelines	LACERA Portfolio	Measurement Period	In Compliance?	Date of Certification
•Target annualized return					
–Absolute: 3-month T-Bills + 500 bps from SI to 2/28/2019 & +250 bps onward	6.1%	3.6%	3 year rolling	No	9/30/2019
–Relative: HFRX Global Hedge Fund Index	1.9%	3.6%	3 year rolling	Yes	9/30/2019
•Target range of annualized volatility	3.0% – 8.0%	2.7%	3 year rolling	No	9/30/2019
•Sharpe ratio	0.4-0.8	0.7	3 year rolling	Yes	9/30/2019
•Beta to equity markets	0.2	0.2 [1]	3 year rolling	Yes	9/30/2019
•Beta to fixed income markets	0.2	0.0 [2]	3 year rolling	No	9/30/2019
Capital Allocation Constraints					
•Number of investment managers	15-35	23	Monthly	Yes	9/30/2019
	Equity Hedge: 10-50%	30.9%	Monthly	Yes	9/30/2019
	Event Driven: 10-50%	26.4%	Monthly	Yes	9/30/2019
•Target/compliance range of allocation to strategies (at market)	Directional/Tactical: 10-50%	20.3%	Monthly	Yes	9/30/2019
	Relative Value: 0-40%	21.3%	Monthly	Yes	9/30/2019
	Other Assets / Liabilities (cash): <5%	1.1%	Monthly	Yes	9/30/2019
•Maximum allocation to a single fund (at market)	10%	6.6%	Monthly	Yes	9/30/2019
•Maximum allocation to a single advisor (at market)	15%	6.6%	Monthly	Yes	9/30/2019
•Maximum percentage ownership of a single fund	30%	10.4%	Quarterly	Yes	9/30/2019
Downside Risk Case (See risk report)					
•Portfolio-level RoR Impact of Severe Case Loss (at market)	25%	20.8%	Monthly	Yes	9/30/2019
•Severe Case Loss in a single fund (at market)	<3% Capital at Risk	1.5%	Monthly	Yes	9/30/2019
•Severe Case Loss in a single advisor (at market)	<6% Capital at Risk	1.5%	Monthly	Yes	9/30/2019
Liquidity					
•Hard lockup period of 1 year or greater	<20%	1.6%	Monthly	Yes	9/30/2019
•Quarterly liquidity or better (excluding locks)	>75%	77.0%	Monthly	Yes	9/30/2019
•Percent of portfolio available within 1 year (excluding locks)	>65%	77.6%	Monthly	Yes	9/30/2019
•Hard lockup more than 2 years (not to exceed three years)	<10%	0.0%	Monthly	Yes	9/30/2019
Leverage					
•Strategy level leverage	Tactical Trading: 20x	5.2	Quarterly	Yes	9/30/2019
	Event Driven: 4x	1.5	Quarterly	Yes	9/30/2019
	Equity Long / Short: 4x	1.0	Quarterly	Yes	9/30/2019
	Relative Value: 8x	10.0	Quarterly	No	9/30/2019

As of September 2019. Investment guideline targets are subject to change and are current as of the date of this presentation. Investment guideline targets are objectives and do not provide any assurance as to future results.
Past performance does not guarantee future results, which may vary. Source: HFR Database © HFR, Inc. 2019 www.hedgefundresearch.com. Pertrac Indicies Database, www.msci.com, www.barcap.com.
1. Beta to equity markets represents the LACERA portfolio's beta to the MSCI World Index Hedged USD. 2. Beta to fixed income markets represents the LACERA portfolio's beta to the Barclays Aggregate Bond Index.

Additional Information

The information contained herein is non-public and proprietary in nature and may constitute trade secrets under California law, the disclosure of which could have adverse effects on Goldman Sachs or the Fund described herein and its investments. This information includes a detailed account of investment strategy based on proprietary methods and techniques of an financial analysis and valuation, which is used in Goldman Sachs' businesses. Goldman Sachs has taken reasonable efforts to preserve the confidential nature of this information and derives independent economic value from the fact that such methods and techniques are not widely known. The following confidential information was prepared by Goldman Sachs solely in connection with a proposed investment in the Fund described herein by LACERA and may not be disclosed, reproduced or used for any other purposes. The following confidential information may be excepted from public disclosure pursuant to Section 6254.15 of the California Government Code, or alternatively pursuant to Section 6254.26 of the California Government Code. Any information provided by or on behalf of the Fund must be returned upon request of Goldman Sachs. Please advise Goldman Sachs if LACERA is subject to any additional entity-specific (including, but not limited to, pursuant to internal policies) Freedom of Information Act or similar open records disclosure requirements before any disclosure pursuant to such requirements is made.

Confidentiality

No part of this material may, without GSAM's prior written consent, be (i) copied, photocopied or duplicated in any form, by any means, or (ii) distributed to any person that is not an employee, officer, director, or authorized agent of the recipient.

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There may be conflicts of interest relating to the Alternative Investment and its service providers, including Goldman Sachs and its affiliates. These activities and interests include potential multiple advisory, transactional and other interests in securities and instruments that may be purchased or sold by the Alternative Investment. These are considerations of which investors should be aware and additional information relating to these conflicts is set forth in the offering materials for the Alternative Investment.

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Hedge funds and other private investment funds (collectively, "Alternative Investments") are subject to less regulation than other types of pooled investment vehicles such as mutual funds. Alternative Investments may impose significant fees, including incentive fees that are based upon a percentage of the realized and unrealized gains and an individual's net returns may differ significantly from actual returns. Such fees may offset all or a significant portion of such Alternative Investment's trading profits. Alternative Investments are not required to provide periodic pricing or valuation information. Investors may have limited rights with respect to their investments, including limited voting rights and participation in the management of such Alternative Investments.

Alternative Investments often engage in leverage and other investment practices that are extremely speculative and involve a high degree of risk. Such practices may increase the volatility of performance and the risk of investment loss, **including the loss of the entire amount that is invested.** There may be conflicts of interest relating to the Alternative Investment and its service providers, including Goldman Sachs and its affiliates. Similarly, interests in an Alternative Investment are highly illiquid and generally are not transferable without the consent of the sponsor, and applicable securities and tax laws will limit transfers.

Index Benchmarks

Indices are unmanaged. The figures for the index reflect the reinvestment of all income or dividends, as applicable, but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices.

The indices referenced herein have been selected because they are well known, easily recognized by investors, and reflect those indices that the Investment Manager believes, in part based on industry practice, provide a suitable benchmark against which to evaluate the investment or broader market described herein. The exclusion of "failed" or closed hedge funds may mean that each index overstates the performance of hedge funds generally.

MSCI World Index

he MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The MSCI World Index consists of the following 23 developed market country indexes: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. The index is calculated without dividends, with net or with gross dividends reinvested, in both US dollars and local currencies. Source: PerTrac Indices Database, www.mscidata.com.

Barclays Aggregate Bond Index

The Barclays Capital U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis. Source: PerTrac Indices Database, www.barcap.com

HFRX Global Hedge Fund Index

The HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage. The strategies are asset weighted based on the distribution of assets in the hedge fund industry. Source: HFR Database © HFR, Inc. 2015, www.hedgefundresearch.com. Please note that HFRX performance indications are based on preliminary estimates.

General Disclosures

Past performance does not guarantee future results, which may vary. The value of investments and the income derived from investments will fluctuate and can go down as well as up. A loss of principal may occur.

Although certain information has been obtained from sources believed to be reliable, we do not guarantee its accuracy, completeness or fairness. We have relied upon and assumed without independent verification, the accuracy and completeness of all information available from public sources.

Goldman Sachs Hedge Fund Strategies LLC is a U.S. registered investment adviser, is part of Goldman Sachs Asset Management and is a wholly owned subsidiary of The Goldman Sachs Group, Inc.
References to indices, benchmarks or other measures of relative market performance over a specified period of time are provided for your information only and do not imply that the portfolio will achieve similar results. The index composition may not reflect the manner in which a portfolio is constructed. While an adviser seeks to design a portfolio which reflects appropriate risk and return features, portfolio characteristics may deviate from those of the benchmark.

The strategy may include the use of derivatives. Derivatives often involve a high degree of financial risk because a relatively small movement in the price of the underlying security or benchmark may result in a disproportionately large movement in the price of the derivative and are not suitable for all investors. No representation regarding the suitability of these instruments and strategies for a particular investor is made.

LACERA Direct Portfolio

Portfolio Fund Summary

LACERA Direct Portfolio Summary (September 30, 2019)

Investment Manager and Fund	Inception Date	QTD Opening Balance	QTD Subscriptions / (Redemptions)	QTD Gain / (Loss)	QTD Ending Balance	% of Direct HF Program (9/30/2019)	Direct Portfolio Returns[1] 3Q 2019	YTD	1 Year	3 Year	ITD[2]
Multi-Strategy											
AQR Liquid Enhanced Alternative Premia Fund, L.P.	4/1/2018	66,657,088	0	636,186	67,293,274	11.0%	0.95%	1.52%	-1.17%	N/A	-6.97%
Davidson Kempner Institutional Partners, L.P.	4/1/2018	114,543,330	10,000,000	956,350	125,499,680	20.5%	0.82%	5.17%	3.45%	N/A	3.89%
HBK Multi-Strategy Fund L.P.	5/1/2018	131,812,239	0	(383,360)	131,428,879	21.5%	-0.29%	2.82%	3.59%	N/A	3.60%
Multi-Strategy Total		**313,012,657**	**10,000,000**	**1,209,176**	**324,221,833**	**53.1%**	**0.37%**	**3.35%**	**2.49%**	**N/A**	**0.30%**
Relative Value											
PIMCO Tactical Opportunities Fund L.P.	11/1/2018	161,572,254	18,500,000	1,713,871	181,786,125	29.8%	1.00%	5.30%	N/A	N/A	4.22%
Capula Global Relative Value Fund L.P.	12/1/2018	104,012,650	0	902,884	104,915,534	17.2%	0.87%	4.77%	N/A	N/A	4.92%
Relative Value Total		**265,584,905**	**18,500,000**	**2,616,755**	**286,701,659**	**46.9%**	**0.95%**	**5.07%**	**N/A**	**N/A**	**4.67%**
Total Direct Portfolio		**578,597,562**	**28,500,000**	**3,825,931**	**610,923,492**	**100.0%**	**0.65%**	**4.13%**	**3.27%**	**N/A**	**0.81%**

[1] Does not include the impact of cash movements (subscriptions and redemptions) on portfolio returns. State Street Bank, LACERA's official book of record, calculated a one-year return of the direct portfolio of 3.38%.
State Street Bank includes the impact of cash movements in their performance calculation each month, in which the fund returns are lagged by one month, which accounts for the difference in performance.

[2] Funds with an inception date prior to October 1, 2018 have ITD returns that are annualized. Funds with an inception date after October 1, 2018 have ITD returns that are cumulative.

LACERA - DIRECT PORTFOLIO

Investment Guidelines Summary (as of September 30, 2019)

Performance Objectives	Investment Guidelines	LACERA Direct Portfolio	Measurement Period	In Compliance?
• Target annualized return				
– Absolute: 3-month T-Bills + 250 bps [1]	6.30%	0.8%	ITD	n/a
– Relative: HFRX Global Hedge Fund Index	-0.20%	0.8%	ITD	n/a
• Target range of annualized volatility	3.0% – 8.0%	n/a	3 year rolling	n/a
• Beta to equity markets referencing MSCI ACWI	< 0.2	n/a	3 year rolling	n/a
Capital Allocation Constraints				
• Number of investment managers	8 to 20	5	Quarterly	n/a
• Minimum allocation to a single fund (at market)	$5 million	$75 million	Quarterly	Yes
• Maximum percentage ownership of a single fund	35%	17%	Quarterly	Yes
• Maximum exposure to an investment manager across multiple funds	20% of Direct HF Portfolio (fully invested)	n/a	Quarterly	n/a
Downside Risk Case				
• Portfolio-level RoR Impact of Severe Case Loss (at market)	> -10%	n/a	Quarterly	n/a
Liquidity				
• Remaining lock up period of 1 year or greater	< 40%	17.9%	Quarterly	Yes
• Remaining lock up period of 2 year or greater	< 25%	6.0%	Quarterly	Yes
• Remaining lock up period of 3 year or greater	< 10%	0.0%	Quarterly	Yes
• Remaining lock up period of 5 year or greater	0%	0.0%	Quarterly	Yes
• Minimum invested as % of portfolio asset value in funds where full or partial liquidity is available within one quarter (excluding notification periods and after lock-up expires)	> 40%	70.2%	Quarterly	Yes
• Minimum invested in funds liquid within 1 year (excluding notification periods and after lock-up expires)	> 65%	82.1%	Quarterly	Yes
Leverage				
• Strategy level leverage	Macro / Tactical Trading: 20x	n/a	Quarterly	n/a
	Event Driven: 4x	n/a	Quarterly	n/a
	Equity Hedge: 4x	n/a	Quarterly	n/a
	Relative Value: 8x	12.9	Quarterly	n/a
	Multi-Strategy: 5x	5.5	Quarterly	n/a

1 Reflects hedge funds benchmark which is 90-Day U.S. T-Bills plus 250 basis points annually beginning March 1, 2019 and 90-Day U.S. T-Bills plus 500 basis points annually for periods prior to March 1, 2019.

Disclosures

In the interest of transparency, Investment Staff would like to document the following two personal relationships that exist between LACERA staff and hedge fund managers where LACERA is invested. Staff have openly disclosed these relationships to avoid any perception of conflict or bias.

Jonathan Grabel, LACERA's Chief Investment Officer, and Ashish Kishore, a Partner at Manikay Partners, LLC have a long-standing, personal friendship that dates back over 20 years. Manikay Partners runs a hedge fund held by LACERA in the fund of funds portfolio managed by Goldman Sachs Asset Management. The following details are provided to establish the independence of the institutional relationship between LACERA and Manikay Partners relative to the personal relationship between Messrs. Grabel and Kishore: (1) Mr. Grabel's relationship with Mr. Kishore pre-dates the employment of Mr. Grabel as CIO of LACERA in 2017 and LACERA's investment in Manikay pre-dates Mr. Grabel's employment at LACERA; (2) Goldman Sachs has had and maintains full discretion, within established guidelines, for selecting or terminating fund managers, including the Manikay Fund, in its portfolio; and (3) Mr. Grabel disclosed that he has no current or former financial relationship with Mr. Kishore and has had no communication about LACERA's investment with Manikay with him.

James Rice, Principal Investment Officer at LACERA, and Kathleen Salvaty, Vice President Legal at AQR, have a personal friendship that dates back five years. AQR runs the Liquid Enhanced Alternative Premia Fund held by LACERA in its direct hedge fund portfolio. The following details are provided to establish the independence of the institutional relationship between LACERA and AQR relative to the personal relationship between Mr. Rice and Ms. Salvaty: (1) Even though Mr. Rice's relationship with Ms. Salvaty pre-dates Staff's recommendation of AQR to its direct portfolio in December 2017 and initial investment in April 2018, Mr. Rice only became aware that Ms. Salvaty had been hired by and accepted a position with AQR in May 2018, after LACERA was already invested in the AQR Fund. Ms. Salvaty also became aware of Mr. Rice's business relationship with AQR at that same time and no ongoing communication about LACERA's investment with AQR has been occurring; (2) Mr. Rice did not introduce Ms. Salvaty to AQR and had no communication with the firm or her about her potential employment during the hiring process; and (3) Mr. Rice disclosed that he has no current or former financial relationship with Ms. Salvaty.

Glossary of Hedge Fund Terms

Hedge Fund Strategies

Overview

- Credit strategies
  - Directional and relative value investments in debt securities, credit derivatives and related instruments
  - Strategies include long-biased credit, long/short credit, structured credit and mortgage credit
  - Hedging investments include short credit index, individual short, credit default swap and sovereign credit investments
- Relative value strategies
  - Trades constructed to capitalize on perceived mispricings of one instrument relative to another or one maturity relative to another for a given instrument
  - Generally less dependent on market direction
  - Strategies include convertible arbitrage, statistical arbitrage, fixed income arbitrage and option volatility arbitrage
- Equities strategies
  - Purchases (buying long) and/or sales (selling short) of equities based on fundamental and/or quantitative analysis and other factors
  - Managers typically seek to capitalize on discrepancies between their assessment of security valuations and current market prices
  - Strategies include long-biased hedged equities, less-correlated hedged equities and activist
- Quantitative strategies
  - Utilizes a combination of researcher insights, statistical analysis and technology in seeking to parse data, identify alpha signals, construct efficient portfolios and execute with minimal transaction costs
  - Invests across liquid asset classes and instruments and seeks to generate an uncorrelated return stream
  - Directional quantitative strategies take directional positions in themes and across instruments
  - Non-directional quantitative strategies implement a beta neutral or low-net approach; may limit risk premia factor exposure

There can be no assurance that any fund will achieve its objectives or avoid losses.

Hedge Fund Strategies

Overview (continued)

- Event driven strategies
  - Investments that seek to exploit situations in which an announced or anticipated event creates inefficiencies in the pricing of securities
  - Potential events include mergers, acquisitions, recapitalizations, bankruptcies and litigation decisions
  - Strategies include risk arbitrage and diversified event driven
- Macro strategies
  - Investments based on analyses and forecasts of macroeconomic trends, including governmental and central bank policies, fiscal trends, trade imbalances, interest rate trends and inter-country relations
  - Strategies include discretionary and systematic
- Commodities strategies
  - Investments across global commodity markets based on an analysis of factors, including supply and demand, legislative and environmental policies, trends in growth rates and resource consumption, global monetary and trade policy, geopolitical events and technical factors
  - Strategies may be long/short directional, spread-oriented or volatility-oriented
  - Strategies include discretionary and systematic
- Portfolio hedging strategies
  - Investments designed to reduce a portfolio’s overall exposure to various systemic risks and intended to provide protection during broad market downturns
  - Strategies include dedicated short equity, synthetic short equity, dedicated short credit and tail risk protection

Hedge Fund Strategies

Overview

Equity	Credit	Relative value	Tactical trading	Hedging strategies
▪ Fundamental long/short › Long-biased › Neutral › Short-biased › Variable ▪ Activist ▪ Trading-oriented long/short ▪ Event driven › Merger arbitrage › Spin-offs › Recapitalizations › Special situations ▪ Regional focus ▪ Sector specialist	▪ Long/short ▪ Directional credit › Bank debt › Distressed securities › Mezzanine debt › Direct lending ▪ Structured credit › Residential mortgages (RMBS) › Commercial mortgages (CMBS) › Other Asset-Backed Securities (ABS)	▪ Convertible bond arbitrage ▪ Fixed income arbitrage ▪ Option volatility arbitrage ▪ Statistical arbitrage	▪ Global macro › Discretionary › Systematic ▪ Commodities › Relative value › Directional › Systematic ▪ Quantitative › Non-Directional › Directional	▪ Short equity ▪ Short credit ▪ Synthetic put convertible bond arbitrage ▪ Tail risk “protection” strategies

Risk Measure

Leverage

FOR ILLUSTRATIVE PURPOSES ONLY. NOT INTENDED TO PRESENT DATA RELATED TO ANY FUND.

The leverage of investments within a portfolio should be understood within the context of the portfolio's volatility or variance.

Leverage illustrations

- Buy equity shares on margin
  - Apple stock: $345
  - Initial margin: 20%
  - Leverage = ($345 / $69) = 5x
- Buy a futures contract on margin
  - S&P 500 Index: 1330
  - E-mini futures notional value: $66,500 ($50 * 1330)
  - Exchange margin: $3,500
  - Leverage = $66,500 / $3,500 = 19x
- Buy a credit default swap (CDS)
  - Purchase $100 million notional protection for 5 years on General Electric's senior debt costing 115 bps a year
  - Leverage = $100mm / ($1.15mm * 5) = 17x
- Borrow money to buy a bond
  - Term financing on commercial mortgage-backed security collateral. 2 year term, cost is LIBOR + 150 bps, haircuts (margin) are 25%.
  - 25% margin = 4x leverage

Goal	▪ Understand how leverage can magnify returns, both positive and negative ▪ Understand that levered investments may have higher volatility
Formula	$Leverage = \frac{Notional\ Exposure}{Capital\ Exposure}$
History	▪ Excessive use of leverage has been the source of many financial crises
Usefulness	▪ Some types of leverage are risk mitigating ▪ Should carefully examine levered investments to understand whether use of leverage is prudent
Limitations	▪ Various sources of leverage › Borrowing › Inherent to instrument ▪ Terminology can be confusing › Leverage versus exposure

Risk Measure

Liquidity

FOR ILLUSTRATIVE PURPOSES ONLY. NOT INTENDED TO PRESENT DATA RELATED TO ANY FUND.

The liquidity of investments within a portfolio should be understood within the context of the portfolio's volatility or variance.

Liquidity illustration

Investment	Liquidity
Equity	Daily, in many cases
Fixed Income	Daily, in many cases
Hedge Funds	▪ Varies from monthly liquidity to multi-year lockups ▪ Quarterly or semi-annual liquidity is common
Private Equity	5-10 year duration
Real Estate	Multi year

Goal	Understand ability to liquidate investments, especially during crises
Measures	Time needed to liquidate investment without incurring a material negative price impact as a result of the sale
History	▪ Liquidity typically "dries up" during financial crises ▪ Less liquid investments › May be more volatile than their return streams indicate › Have higher expected returns
Usefulness	▪ Liquidity indicates how quickly cash may be raised ▪ Liquidity informs the reliability of certain risk statistics when evaluating an investment
Limitations	Assessment influenced by the chosen representative market environment

The Gabriel Funds

Notes and Disclosures

In reviewing this presentation relating to San Gabriel Fund, L.P. (the “Gabriel”) or San Gabriel Fund 3, L.P. (“Gabriel 3” together with Gabriel, the “Gabriel Funds”), you should consider the following:

Gabriel commenced operations on October 1, 2011.

Gabriel 3 commenced investment operations on February 1, 2016.

To the extent this report includes the performance of the Gabriel Funds, such returns are calculated net of all fees and expenses.

Figures for 2011–2017, as applicable, are derived from books and records of the Gabriel Funds that have been audited by the Gabriel Funds’ independent public accountants.

Figures for 2018 are estimated based on unaudited books and records of the Gabriel Funds.

Target Returns, Forward Looking Estimates, and Risk Parameters

Notes and Disclosures

Target Returns, Forward Looking Estimates, and Risk Parameters: Target returns, forward looking estimates, and risk parameters are shown to illustrate the current risk/return profile of how the fund or investment is/will be managed. **<u>Target returns, forward looking estimates, and risk parameters do not forecast, predict, or project any fund, investment, or investor return.</u>** It does not reflect the actual or expected returns of any investor, investment, GCM fund, or strategy pursued by any GCM fund, and does not guarantee future results.

Target returns, forward looking estimates, and risk parameters:

- are based solely upon how the fund or investment is expected to be managed including, but not limited to, GCM Grosvenor's current view of the potential returns and risk parameters of the investment, investments in the GCM fund, or strategy pursued by a GCM fund;
- do not forecast, predict, or project the returns or risk parameters for any investor, investment, GCM fund, or any strategy pursued by any GCM fund; and
- are subject to numerous assumptions including, but not limited to, observed and historical market returns relevant to certain investments, asset classes, projected cash flows, projected future valuations of target assets and businesses, other relevant market dynamics (including interest rate and currency markets), anticipated contingencies, and regulatory issues.

Changes in the assumptions will have a material impact on the target returns, forward looking estimates, and risk parameters presented. Target returns and forward looking estimates are generally shown before fees, transactions costs and taxes and do not account for the effects of inflation. Management fees, transaction costs, and potential expenses may not be considered and would reduce returns and affect parameters. **Target Returns And Risk Parameters May Not Materialize.**

Notes and Disclosures

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A summary of certain risks and special considerations relating to an investment in the GCM Fund(s) discussed in this presentation is set forth below. A more detailed summary of these risks is included in the relevant Part 2A for the GCM Grosvenor entity (available at: http://www.adviserinfo.sec.gov). **Regulatory Status**- neither the GCM Funds nor interests in the GCM Funds have been registered under any federal or state securities laws, including the Investment Company Act of 1940, and interests in GCM Funds are sold in reliance on exemptions from the registration requirements of such laws. Investors will not receive the protections of such laws. **Market Risks**- the risks that economic and market conditions and factors may materially adversely affect the value of a GCM Fund’s investments. **Illiquidity Risks**- Investors in GCM Funds have either very limited or no rights to redeem or transfer interests. Interests in GCM Funds will not be listed on an exchange and it is not expected that there will be a secondary market for interests. The limited liquidity of a GCM Fund depends on its ability to withdraw/redeem capital from the Underlying Funds in which it invests, which is often limited due to withdrawal/redemption restrictions. **Strategy Risks**- the risks associated with the possible failure of the asset allocation methodology, investment strategies, or techniques used by GCM Grosvenor or an Investment Manager. GCM Funds and Underlying Funds may use leverage, which increases the risks of volatility and loss. The fees and expenses charged by GCM Funds and Underlying Funds may offset the trading profits of such funds. **Valuation Risks**- the risks relating to GCM Grosvenor's’ reliance on Investment Managers to value the financial instruments in the Underlying Funds they manage. In addition, GCM Grosvenor may rely on its internal valuation models to calculate the value of a GCM Fund and these values may differ significantly from the eventual liquidation values. **Tax Risks**- the tax risks and special tax considerations arising from the operation of and investment in pooled investment vehicles. An Investment Product may take certain tax positions and/or use certain tax structures that may be disallowed or reversed, which could result in material tax expenses to such Investment Product. GCM Funds will not be able to prepare their returns in time for investors to file their returns without requesting an extension of time to file. **Institutional Risks**- the risks that a GCM Fund could incur losses due to failures of counterparties and other financial institutions. **Manager Risks**- the risks associated with investments with Investment Managers. **Structural and Operational Risks**- the risks arising from the organizational structure and operative terms of the relevant GCM Fund and the Underlying Funds. **Follow-On Investments**- the risk that an Investment Product underperforms due to GCM Grosvenor's decision to not make follow-on investments. **Cybersecurity Risks**- technology used by GCM Grosvenor could be compromised by unauthorized third parties. **Foreign Investment Risk**- the risks of investing in non-U.S. Investment Products and non-U.S. Dollar currencies. **Concentration Risk**- GCM Funds may make a limited number of investments that may result in wider fluctuations in value and the poor performance by a few of the investments could severely affect the total returns of such GCM Funds. **Controlling Interest Risks**- the risks of holding a controlling interest in an investment and the losses that may arise if the limited liability of such investment is disallowed. **Disposition Risks**- the disposition of an investment may require representations about the investment and any contingent liabilities may need to be funded by investors. In addition, GCM Grosvenor, its related persons, and the Investment Managers are subject to certain actual and potential conflicts of interest in making investment decisions for the GCM Funds and Underlying Funds, as the case may be. An investment in an Underlying Fund may be subject to similar and/or substantial additional risks and an investor should carefully review an Underlying Fund’s risk disclosure document prior to investing.

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Notes and Disclosures (continued)

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GCM Information may contain exposure information that GCM Grosvenor has estimated on a "look through" basis based upon: (i) the most recent, but not necessarily current, exposure information provided by Investment Managers, or (ii) a GCM Grosvenor estimate, which is inherently imprecise. GCM Grosvenor employs certain conventions and methodologies in providing GCM Information that may differ from those used by other investment managers. GCM Information does not make any recommendations regarding specific securities, investment strategies, industries or sectors. Risk management, diversification and due diligence processes seek to mitigate, but cannot eliminate risk, nor do they imply low risk. To the extent GCM Information contains "forward-looking" statements, such statements represent GCM Grosvenor's good-faith expectations concerning future actions, events or conditions, and can never be viewed as indications of whether particular actions, events or conditions will occur. All expressions of opinion are subject to change without notice in reaction to shifting marketing, economic, or other conditions. Additional information is available upon request.

This presentation may include information included in certain reports that are designed for the sole purpose of assisting GCM Grosvenor personnel in (i) monitoring the performance, risk characteristics, and other matters relating to the GCM Funds and (ii) evaluating, selecting and monitoring Investment Managers and the Underlying Funds ("Portfolio Management Reports"). Portfolio Management Reports are designed for GCM Grosvenor's internal use as analytical tools and are not intended to be promotional in nature. Portfolio Management Reports are not necessarily prepared in accordance with regulatory requirements or standards applicable to communications with investors or prospective investors in GCM Funds because, in many cases, compliance with such requirements or standards would compromise the usefulness of such reports as analytical tools. In certain cases, GCM Grosvenor provides Portfolio Management Reports to parties outside the GCM Grosvenor organization who wish to gain additional insight into GCM Grosvenor's investment process by examining the types of analytical tools GCM Grosvenor utilizes in implementing that process. Recipients of Portfolio Management Reports (or of information included therein) should understand that the sole purpose of providing these reports to them is to enable them to gain a better understanding of GCM Grosvenor's investment process.

FOR INFORMATION ONLY

December 20, 2019

TO: Each Trustee
Board of Retirement
Board of Investments

FROM: Ted Granger, CPA, CGMA, CRMA
Interim Chief Financial Officer

SUBJECT: **MONTHLY EDUCATION & TRAVEL REPORTS – NOVEMBER 2019**

Attached, for your review, are the Board and Staff Education & Travel Reports as of November 2019. These reports include travel (i.e., completed and canceled) during Fiscal Year 2019-2020.

REVIEWED AND APPROVED:

Santos H. Kreimann
Chief Executive Officer

TG/EW/krh

Attachments

c: J. Popowich
J. Grabel
S. Rice
K. Hines

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BOARD EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2019 - 2020
NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Alan Bernstein				
A	1	Edu - PPI 2019 Summer Roundtable - Chicago IL	07/10/2019 - 07/12/2019	Attended
B	-	Edu - NACD Southern California Chapter Luncheon - Los Angeles CA	09/10/2019 - 09/10/2019	Attended
	-	Edu - 2019 Pension Bridge Alternatives - Beverly Hills CA	10/28/2019 - 10/29/2019	Attended
	-	Edu - KACALP Annual Conference - Los Angeles CA	10/29/2019 - 10/30/2019	Attended
	-	Edu - NACD Illuminating Data in the Boardroom - Los Angeles CA	10/30/2019 - 10/30/2019	Attended
Vivian Gray				
B	-	Edu - SACRS Public Pension Investment Management Program - Berkeley CA	07/22/2019 - 07/24/2019	Attended
	-	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
	-	Edu - Toigo Foundation 30th Anniversary - Los Angeles CA	11/19/2019 - 11/19/2019	Attended
James Harris				
B	-	Edu - CALAPRS Principles of Pension Governance - Malibu CA	08/26/2019 - 08/29/2019	Attended
	-	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Shawn Kehoe				
A	1	Edu - IAFCI Annual Training Conference & Exhibitor Show - Raleigh NC	08/26/2019 - 08/30/2019	Attended
B	-	Edu - KACALP Annual Conference - Los Angeles CA	10/29/2019 - 10/30/2019	Attended
X	-	Edu - National Association of Corporate Directors - Global Board Leaders' Summit - Washington D.C. MD	09/21/2019 - 09/24/2019	Canceled
Keith Knox				
X	-	Edu - CII's Trustee Training Course for California Public Fund Trustees - Berkeley CA*	10/04/2019 - 10/04/2019	Canceled
Wayne Moore				
A	1	Edu - PPI 2019 Summer Roundtable - Chicago IL	07/10/2019 - 07/12/2019	Attended
	2	Edu - 2019 Council of Institutional Investors (CII) Fall Conference - Minneapolis MN	09/16/2019 - 09/18/2019	Attended
	3	Edu - 2019 Pacific Pension Institute Executive Seminar and Asia Roundtable - Shanghai, China; Hong Kong, China	11/03/2019 - 11/08/2019	Attended
B	-	Edu - NAIC 2019 Annual Private Equity & Hedge Fund Conference - Los Angeles CA	10/23/2019 - 10/24/2019	Attended
Ronald Okum				
B	-	Edu - 2019 Pension Bridge Alternatives - Beverly Hills CA	10/28/2019 - 10/29/2019	Attended
	-	Edu - KACALP Annual Conference - Los Angeles CA	10/29/2019 - 10/30/2019	Attended
William Pryor				
X	-	Edu - NCPERS 2019 Public Safety Conference - New Orleans LA	10/27/2019 - 10/30/2019	Canceled
Les Robbins				
X	-	Edu - CRCEA Fall 2019 Conference - Rohnert Park CA*	10/28/2019 - 10/30/2019	Canceled

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BOARD EDUCATION AND TRAVEL REPORT

FOR FISCAL YEAR 2019 - 2020

NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Gina Sanchez				
A	1	Edu - Oxford Impact Measurement Program - Oxford, United Kingdom	07/15/2019 - 07/19/2019	Attended
	2	Edu - 2019 Council of Institutional Investors (CII) Fall Conference - Minneapolis MN	09/16/2019 - 09/18/2019	Attended
	3	Edu - National Association of Corporate Directors - Global Board Leaders' Summit - Washington D.C. MD	09/21/2019 - 09/24/2019	Attended
B	-	Edu - 2019 Western North American PRI Symposium - Los Angeles CA	10/24/2019 - 10/24/2019	Attended
	-	Edu - 2019 Pension Bridge Alternatives - Beverly Hills CA	10/28/2019 - 10/29/2019	Attended
	-	Edu - 2019 RFKennedy Human Rights Compass Conference - West Hollywood CA	10/29/2019 - 10/30/2019	Attended
	-	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Herman Santos				
A	1	Edu - 2019 Latin America Private Equity & Venture Capital Association Summit and Investor Roundtable and LAVCA Venture Investors Annual Meeting - New York NY	09/23/2019 - 09/26/2019	Attended
B	-	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
	-	Edu - Toigo Foundation 30th Anniversary - Los Angeles CA	11/19/2019 - 11/19/2019	Attended
X	-	Edu - INCA Investments Latin American Investments Conference - Buenos Aires, Argentina	10/16/2019 - 10/17/2019	Canceled
Gina Zapanta				
B	-	Edu - SACRS Public Pension Investment Management Program - Berkeley CA	07/22/2019 - 07/24/2019	Attended
	-	Edu - Network Ethnic Physician Organizations (NEPO) Summit - Pasadena CA	08/23/2019 - 08/24/2019	Attended
X	-	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Canceled

Category Legend:

A - Pre-Approved/Board Approved
B - Educational Conferences and Administrative Meetings in CA where total cost is no more than $2,000.
C - Second of two conferences and/or meetings counted as one conference per Section 705.00.A.1 of the Travel Policy
X - Canceled events for which expenses have been incurred
* - Cancellation due to the conference host cancelling the event

STAFF EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2019 - 2020
NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Administrative Services				
Dana Brooks	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Holly Henderson	1	Edu - GFOA Budgeting Best Practices: Budget Monitoring - Sacramento CA	09/16/2019 - 09/18/2019	Attended
Kimberly Hines	1	Edu - GFOA Budgeting Best Practices: Budget Monitoring - Sacramento CA	09/16/2019 - 09/18/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Benefits				
Sylvia Botros	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
Louis Gittens	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Dmitriy Khaytovich	1	Edu - CALAPRS Benefits Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Theodore King	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Linda Moss	1	Edu - 38th ISCEBS Employee Benefits Symposium - New Orleans CA	09/08/2019 - 09/11/2019	Attended
Sevan Simonian	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Communications				
Sarah Scott	1	Edu - Writing Compelling Digital Copy as part of the UX Conference - Chicago IL	09/12/2019 - 09/12/2019	Canceled
Disability Litigation Services				
Eugenia Der	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Attended
Jason Waller	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Canceled
Disability Retirement Services				
Stephanie Ashley	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Hernan Barrientos	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Redjan Bitri	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Tamara Caldwell	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Justin Chiu	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Ricki Contreras	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Attended
	2	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended

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STAFF EDUCATION AND TRAVEL REPORT

FOR FISCAL YEAR 2019 - 2020

NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Disability Retirement Services				
Amabelle Delin	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Attended
	2	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Shamila Freeman	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Danny Hang	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Russell Lurina	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Debra Martin	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Ruby Minjares	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Melena Sarkisian	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Attended
	2	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Maria Silva	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Attended
	2	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
	3	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Frida Skugrud	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Justin Stewart	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Kerri Wilson	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Michelle Yanes	1	Edu - Council of Self-Insured Public Agencies (COSIPA) Fall Educational Seminar (South) - Costa Mesa CA	10/17/2019 - 10/17/2019	Attended
Executive Offices				
John Popowich	1	Edu - GFOA Budgeting Best Practices: Budget Monitoring - Sacramento CA	09/16/2019 - 09/18/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Financial & Accounting Services				
Beulah Auten	1	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Canceled
Ana Chang	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
	2	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Attended

STAFF EDUCATION AND TRAVEL REPORT

FOR FISCAL YEAR 2019 - 2020

NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Financial & Accounting Services				
Esther Chang	1	Edu - Association of Government Accountants (AGA) 2019 Professional Development Training (PDT) - New Orleans LA	07/21/2019 - 07/24/2019	Attended
	2	Edu - CALAPRS Intermediate Retirement Plan Administration - San Jose CA	10/16/2019 - 10/18/2019	Canceled
Sabrina Chen	1	Edu - Great Plains (Dynamics) User Group Summit - Orlando FL	10/15/2019 - 10/18/2019	Attended
Margaret Chwa	1	Edu - CALAPRS Fall Accountants Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
Ted Granger	1	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Canceled
Michael Huang	1	Edu - Great Plains (Dynamics) User Group Summit - Orlando FL	10/15/2019 - 10/18/2019	Attended
Diana Huang	1	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Attended
Anh Huynh	1	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Attended
Chona Labtic-Austin	1	Edu - Association of Government Accountants (AGA) 2019 Professional Development Training (PDT) - New Orleans LA	07/21/2019 - 07/24/2019	Attended
	2	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Attended
Claro Lanting	1	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
Alyce Provencio	1	Edu - CALAPRS Fall Accountants Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
	2	Edu - CALAPRS Intermediate Retirement Plan Administration - San Jose CA	10/16/2019 - 10/18/2019	Attended
Gloria Rios	1	Edu - CALAPRS Fall Accountants Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
	2	Edu - CALAPRS Intermediate Retirement Plan Administration - San Jose CA	10/16/2019 - 10/18/2019	Attended
	3	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
Imelda Saldivar	1	Edu - CALAPRS Fall Accountants Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Canceled
	2	Edu - Great Plains (Dynamics) User Group Summit - Orlando FL	10/15/2019 - 10/18/2019	Canceled
	3	Edu - APP2P Fall Conference & Expo - Scottsdale AZ	10/15/2019 - 10/17/2019	Canceled
Felisa Valdepenas	1	Edu - Association of Government Accountants (AGA) 2019 Professional Development Training (PDT) - New Orleans LA	07/21/2019 - 07/24/2019	Attended
Srbui Vartanian	1	Edu - APP2P Fall Conference & Expo - Scottsdale AZ	10/15/2019 - 10/17/2019	Attended
Elda Villarroel	1	Edu - Great Plains (Dynamics) User Group Summit - Orlando FL	10/15/2019 - 10/18/2019	Attended
Edward Wong	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
Koreana Wong	1	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Canceled

STAFF EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2019 - 2020
NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Financial & Accounting Services				
Ervin Wu	1	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
Alice Yen	1	Edu - Public Pension Financial Forum (P2F2) 16th Annual Conference - Salt Lake City UT	10/20/2019 - 10/23/2019	Canceled
Mei Zhang	1	Edu - Great Plains (Dynamics) User Group Summit - Orlando FL	10/15/2019 - 10/18/2019	Attended
Human Resources				
Ana Ronquillo	1	Edu - SHRM Diversity and Inclusion Conference - New Orleans LA	10/28/2019 - 10/30/2019	Attended
Roberta Van Nortrick	1	Edu - Society of Corporate Compliance and Ethics (SCCE) Annual Meeting - Washington D.C. (National Harbor, MD)	09/15/2019 - 09/18/2019	Attended
	2	Edu - Organizational Development Conference - New Orleans LA	11/05/2019 - 11/06/2019	Attended
Internal Audit				
Nathan Amick	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
	2	Edu - Association of Public Pension Fund Auditors (APPFA) - Lake Tahoe CA	10/27/2019 - 10/30/2019	Attended
Richard Bendall	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
	2	Edu - Enterprise Risk Management (ERM) Pension Peer Group - Sacramento CA	09/22/2019 - 09/25/2019	Attended
Leisha Collins	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
	2	Edu - Association of Public Pension Fund Auditors (APPFA) - Lake Tahoe CA	10/27/2019 - 10/30/2019	Attended
	3	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Christina Logan	1	Edu - Association of Public Pension Fund Auditors (APPFA) - Lake Tahoe CA	10/27/2019 - 10/30/2019	Attended
Kristina Sun	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
Gabriel Tafoya	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
Summy Voong	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
Investments				
Didier Acevedo	1	Admin - Due Diligence of Illiquid Credit Finalist Managers - New York, NY and Chicago, IL	08/27/2019 - 08/29/2019	Attended
	2	Edu - 2019 Latin America Private Equity & Venture Capital Association Summit and Investor Roundtable and LAVCA Venture Investors Annual Meeting - New York NY	09/23/2019 - 09/26/2019	Attended

STAFF EDUCATION AND TRAVEL REPORT

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Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Investments				
Didier Acevedo	3	Admin - Attend Annual General Meetings (AGMs) hosted by Centerbridge, USV, Palladium, and attend Black Diamond's Limited Partner Advisory Committee (LPAC). - New York NY	11/06/2019 - 11/08/2019	Attended
Amit Aggarwal	1	Edu - Investors in Non-Listed Real Estate Vehicles (INREV) North America Conference. - New York NY	10/02/2019 - 10/02/2019	Attended
	2	Admin - Site inspections and meeting with perspective managers. - New York NY	10/03/2019 - 10/03/2019	Attended
	3	Admin - Due diligence with a potential manager, and attend the LP Advisory meetings and Annual meeting of two existing managers (Aermont and Carlyle Europe). - Longdon, England; Paris, France; Berlin, Germany	11/18/2019 - 11/22/2019	Attended
Kevin Bassi	1	Admin - Due Diligence of Clarion Partners - Seattle WA	10/17/2019 - 10/18/2019	Attended
Calvin Chang	1	Admin - Due diligence on a potential manager. - Chicago IL	11/04/2019 - 11/04/2019	Attended
Adam Cheng	1	Admin - Due diligence of Syndicated Bank Loan finalist managers (Credit Suisse and Barings) and visit with Brigade Capital Management. - New York, NY and Charlotte, NC	10/16/2019 - 10/17/2019	Attended
	2	Admin - Due diligence of Syndicated Bank Loan finalist manager, Voya. - Scottsdale AZ	10/21/2019 - 10/21/2019	Attended
David Chu	1	Admin - GGV Capital Limited Partner Advisory Committee Roundtable and Private Limited Partner Reception - San Francisco CA	07/25/2019 - 07/25/2019	Attended
	2	Admin - Due diligence on potential and existing managers (MBK Partners, BRV China, Joy Capital); and attend Lilly Asian Ventures annual investor meeting. - Singapore; Hong Kong; Shanghai, China	09/18/2019 - 09/27/2019	Attended
	3	Edu - SuperReturn Asia Conference. - Hong Kong, China	09/23/2019 - 09/26/2019	Attended
	4	Admin - GGV Annual General Meeting and meet with existing managers (AKKR, Lilly Asia Ventures). - Menlo Park CA	10/17/2019 - 10/18/2019	Attended
	5	Admin - Sinovation Limited Partner Advisory Committee (LPAC) and Annual General Meeting (AGM); and meet with prospective managers. - Shanghai and Beijing, China	11/04/2019 - 11/08/2019	Attended
Esmeralda Del Bosque	1	Edu - 2019 Alternative Investments Forum (AIF) Women Investor's Forum - New York NY	09/09/2019 - 09/10/2019	Attended
	2	Edu - Investment Operations Forum at CalSTRS - Sacramento CA	09/24/2019 - 09/24/2019	Attended
	3	Admin - Meeting with State Street - Sacramento CA	09/24/2019 - 09/24/2019	Attended
	4	Admin - Meeting with Meketa - Carlsbad CA	10/18/2019 - 10/18/2019	Attended
	5	Admin - Risk System RFP Search. - San Francisco CA	11/14/2019 - 11/14/2019	Canceled
Jon Grabel	1	Edu - Public CIO Forum - Detroit MI	09/17/2019 - 09/18/2019	Canceled
	2	Edu - Institutional Limited Partners Association (ILPA) 3rd Annual CIO Symposium - Cambridge MA	09/25/2019 - 09/25/2019	Attended
	3	Edu - Albourne 2019 Client Conference - Philadelphia PA	10/21/2019 - 10/23/2019	Canceled

STAFF EDUCATION AND TRAVEL REPORT

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NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Investments				
Jeff Jia	1	Admin - Due diligence of Syndicated Bank Loan finalist managers (Credit Suisse and Barings) and visit with Brigade Capital Management. - New York, NY and Charlotte, NC	10/16/2019 - 10/17/2019	Attended
	2	Admin - Due diligence of Syndicated Bank Loan finalist manager, Voya. - Scottsdale AZ	10/21/2019 - 10/21/2019	Attended
Dale Johnson	1	Admin - Due Diligence with Prospective Manager - Plano TX	08/20/2019 - 08/20/2019	Attended
	2	Edu - 2019 Council of Institutional Investors (CII) Fall Conference - Minneapolis MN	09/16/2019 - 09/18/2019	Attended
John Kim	1	Edu - Investment Operations Forum at CalSTRS - Sacramento CA	09/24/2019 - 09/24/2019	Attended
	2	Admin - Meeting with State Street - Sacramento CA	09/24/2019 - 09/24/2019	Attended
	3	Admin - Meeting with Meketa - Carlsbad CA	10/18/2019 - 10/18/2019	Attended
	4	Admin - Risk System RFP Search. - San Francisco CA	11/14/2019 - 11/14/2019	Canceled
Derek Kong	1	Admin - Due Diligence on potential managers and existing managers (Alchemy SOF, Triton, LivingBridge) - London, England; Paris, France; Amsterdam, Netherlands; Zurich, Switzerland	09/18/2019 - 09/26/2019	Attended
	2	Admin - Due diligence with potential managers and attend the LP Advisory meeting and Annual meeting of LivingBridge. - London, England and Paris, France	10/31/2019 - 11/08/2019	Attended
Vache Mahseredjian	1	Admin - Due Diligence of Illiquid Credit Finalist Managers - New York, NY and Chicago, IL	08/27/2019 - 08/29/2019	Attended
John Mcclelland	1	Edu - Pension Real Estate Association (PREA) Leadership Summit. - West Sacramento CA	09/10/2019 - 09/10/2019	Canceled
	2	Admin - Site inspections with DWS and Varsity. - Washington DC	10/15/2019 - 10/18/2019	Attended
	3	Edu - Pension Real Estate Association (PREA) 29th Annual Institutional Investor Conference. - Washington DC	10/16/2019 - 10/18/2019	Attended
Quoc Nguyen	1	Edu - Albourne 2019 Client Conference - Philadelphia PA	10/21/2019 - 10/23/2019	Attended
Cindy Rivera	1	Edu - 2019 Institutional Real Estate, Inc. (IREI) Springboard Conference - Ojai CA	10/01/2019 - 10/03/2019	Attended
Michael Romero	1	Admin - Gateway Empire Industrial site inspection. - Riverside CA	09/25/2019 - 09/25/2019	Attended
Trina Sanders	1	Admin - TPG Real Estate Parnter's Annual Investor Meeting. - New York NY	11/06/2019 - 11/07/2019	Canceled
	2	Admin - Heitman 2019 HAPI Investor Meeting, 2019 AEW Asia Advisory Board Meeting, meet with potential manager(s), and site inspections. - Hong Kong, Singapore, and Tokyo	11/14/2019 - 11/22/2019	Attended
Robert Santos	1	Admin - Due diligence of Syndicated Bank Loan finalist managers (Credit Suisse and Barings) and visit with Brigade Capital Management. - New York, NY and Charlotte, NC	10/16/2019 - 10/17/2019	Attended
	2	Admin - Due diligence of Syndicated Bank Loan finalist manager, Voya. - Scottsdale AZ	10/21/2019 - 10/21/2019	Attended

STAFF EDUCATION AND TRAVEL REPORT

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Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Investments				
David Simpson	1	Admin - Vinci Partners Annual General Meeting and Limited Partner Advisory Committee. Due diligence with potential manager and meet with existing managers (Incline Equity, Sterling IP, Clarion, and One Rock). - New York, NY; Pittsburgh, PA; Westport, CT	09/25/2019 - 09/27/2019	Attended
	2	Admin - Due diligence on a potential manager and attend Annual General Meetings (AGM) and Limited Partner Advisory Committees (LPAC) hosted by One Rock, Sterling Investment Partners, and Siris Capital Group. - New York, NY and Westport, CT	11/11/2019 - 11/15/2019	Attended
Shelly Tilaye	1	Admin - Attend Annual General Meetings (AGMs) and Limited Partner Advisory Committee (LPACs) hosted by Juggernaut and Vista. Meet with existing manager, Atlantic Street, for an update. - Washington, D.C. and New York, NY	10/22/2019 - 10/25/2019	Attended
Chad Timko	1	Admin - Due Diligence with Prospective Manager - Plano TX	08/20/2019 - 08/20/2019	Attended
	2	Admin - Due Diligence of Illiquid Credit Finalist Managers - New York, NY and Chicago, IL	08/27/2019 - 08/29/2019	Attended
Edward Wright	1	Admin - Systematic Investment Strategies Symposium as a speaker. - New York NY	11/19/2019 - 11/19/2019	Attended
Scott Zdrazil	1	Admin - Council of Institutional Board and Committee meetings - Washington D.C.	07/31/2019 - 08/01/2019	Attended
	2	Admin - Principles for Responsible Investment Private Equity Advisory Committee Meeting - Paris, France	09/08/2019 - 09/09/2019	Attended
	3	Edu - Annual PRI in Person Conference - Paris, France	09/10/2019 - 09/12/2019	Attended
	4	Admin - Council of Institutional Investors (CII) Board of Directors Meeting - Minneapolis MN	09/16/2019 - 09/18/2019	Attended
	5	Admin - Participate with Council of Institutional Investors (CII) and Securities Exchange Commission (SEC) regarding anticipated rulemaking impacting proxy research and corporate governance regulation. - Washington DC	11/05/2019 - 11/07/2019	Attended
	6	Admin - Stanford Rock Center for Corporate Governance Institutional Investor fall forum. - New York NY	11/13/2019 - 11/14/2019	Attended
Legal Services				
Fern Billingy	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Frank Boyd	1	Edu - CALAPRS Course in Retirement Disability Administration - Oakland CA	09/19/2019 - 09/19/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Michael Herrera	1	Admin - NAPPA Executive Board Meeting - Jackson WY	10/03/2019 - 10/04/2019	Attended
Barry Lew	1	Admin - SACRS Legislative Committee - Sacramento CA	07/19/2019 - 07/19/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Christine Roseland	1	Edu - Association of Corporate Counsel (ACC) Annual Meeting - Phoenix AZ	10/27/2019 - 10/30/2019	Attended
Elaine Salon	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended

STAFF EDUCATION AND TRAVEL REPORT
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Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Member Services				
Carlos Barrios	1	Edu - 38th ISCEBS Employee Benefits Symposium - New Orleans CA	09/08/2019 - 09/11/2019	Attended
	2	Edu - 2019 National Preretirement Education Association (NPEA) Annual Conference - Naples FL	10/19/2019 - 10/23/2019	Attended
	3	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Jacqueline Boute	1	Edu - CALAPRS Benefits Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
Renee Copeland	1	Edu - CALAPRS Benefits Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
Beatriz Daryaie	1	Edu - CALAPRS Benefits Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
Armendina Lejano	1	Edu - CALAPRS Intermediate Retirement Plan Administration - San Jose CA	10/16/2019 - 10/18/2019	Attended
Alejandro Ochoa	1	Edu - CALAPRS Benefits Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
Persian Petrov	1	Edu - CALAPRS Benefits Roundtable - Oakland CA	09/20/2019 - 09/20/2019	Attended
Kelly Puga	1	Edu - 2019 National Preretirement Education Association (NPEA) Annual Conference - Naples FL	10/19/2019 - 10/23/2019	Attended
Jeff Shevlowitz	1	Edu - 38th ISCEBS Employee Benefits Symposium - New Orleans CA	09/08/2019 - 09/11/2019	Attended
QA & Metrics				
Mary Arenas	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Derwin Brown	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
	2	Edu - ASQ Audit Conference 2019 - Orlando FL	10/17/2019 - 10/18/2019	Attended
	3	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Calvin Chow	1	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
Arlene Owens	1	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Flora Zhu	1	Edu - ATD Certificate Program - Train the Trainer - Orlando FL	07/08/2019 - 07/10/2019	Attended

STAFF EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2019 - 2020
NOVEMBER 2019

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Retiree Healthcare				
Tionna Fredericks	1	Edu - IIA Institute of Internal Auditors 2019 International Conference - Anaheim CA	07/07/2019 - 07/10/2019	Attended
Leilani Ignacio	1	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
Kathy Migita	1	Edu - AHIP National Conferences on Medicare, Medicaid & Dual Eligibles - Washington, D.C.	09/23/2019 - 09/26/2019	Attended
	2	Admin - Annual Kaiser Due Diligence - Washington D.C. MD	09/27/2019 - 09/28/2019	Attended
	3	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
	4	Edu - NCPERS 2019 Public Safety Conference - New Orleans LA	10/27/2019 - 10/30/2019	Attended
	5	Admin - Kaiser Permanente - Diligence Meeting - Seattle WA	11/03/2019 - 11/05/2019	Attended
Keisha Munn	1	Edu - ICMI Contact Center Symposium - San Diego CA	11/18/2019 - 11/21/2019	Attended
Cassandra Smith	1	Edu - AHIP National Conferences on Medicare, Medicaid & Dual Eligibles - Washington, D.C.	09/23/2019 - 09/26/2019	Attended
	2	Admin - Annual Kaiser Due Diligence - Washington D.C. MD	09/27/2019 - 09/28/2019	Attended
	3	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
	4	Edu - NCPERS 2019 Public Safety Conference - New Orleans LA	10/27/2019 - 10/30/2019	Attended
	5	Admin - Kaiser Permanente - Diligence Meeting - Seattle WA	11/03/2019 - 11/05/2019	Attended
Letha Williams-Martin	1	Edu - ICMI Contact Center Symposium - San Diego CA	11/18/2019 - 11/21/2019	Attended
Systems				
James Brekk	1	Edu - IAFCI Annual Training Conference & Exhibitor Show - Raleigh NC	08/26/2019 - 08/30/2019	Attended
	2	Edu - Cyber Threat Intelligence Leadership Forum - Orlando FL	09/16/2019 - 09/17/2019	Attended
Roxana Castillo	1	Edu - IFEBP 65th Employee Benefits Conference - San Diego CA	10/20/2019 - 10/23/2019	Attended
	2	Edu - SACRS 2019 Fall Conference - Monterey CA	11/12/2019 - 11/15/2019	Attended
Irwin Devries	1	Admin - LACERA Co-location Lan Migration to new circuit - Mesa AZ	08/28/2019 - 08/28/2019	Attended
Francisco Jaranilla	1	Edu - Great Plains (Dynamics) User Group Summit - Orlando FL	10/15/2019 - 10/18/2019	Attended

Documents not attached are exempt from disclosure under the California Public Records Act and other legal authority.

For further information, contact:
LACERA
Attention: Public Records Act Requests
300 N. Lake Ave., Suite 620
Pasadena, CA 91101

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FOR INFORMATION ONLY

December 31, 2019

TO: Trustees, Board of Investments

FROM: Steven P. Rice SPR
Chief Counsel

FOR: January 8, 2020 Board of Investments Meeting

SUBJECT: Monthly Status Report on Board of Investments Legal Projects

Attached is the monthly report on the status of Board-directed investment-related projects handled by the Legal Division as of December 31, 2019.

Attachment

c: Santos H. Kreimann
Jonathan Grabel
JJ Popowich
Vache Mahseredjian
John McClelland
Christopher Wagner
Ted Wright
Jim Rice
Jude Perez
Christine Roseland
John Harrington
Cheryl Lu
Margo McCabe
Lisa Garcia

LACERA Legal Division
Board of Investments Projects
Monthly Status Report - Pending as of December 31, 2019

	Project/ Investment	Description	Amount	Board Approval Date	Completion Status	% Complete	Notes
PRIVATE EQUITY	Sterling Investment Partners IV, L.P.	Subscription	$125,000,000.00	November 20, 2019	In Progress	90%	Legal negotiations in process.
	MBK Partners Fund V, L.P.	Subscription	$150,000,000.00	December 11, 2019	Completed	100%	Completed.
	Wynnchurch Capital Partners V, L.P.	Subscription	$75,000,000.00	December 11, 2019	In Progress	90%	Legal documentation finalized.

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