LIVE VIRTUAL BOARD MEETING

JULY 14, 2021 AT 9:00 AM

BOARD OF INVESTMENTS MEETING

TO VIEW VIA WEB

https://members.lacera.com/lmpublic/live_stream.xhtml

TO PROVIDE PUBLIC COMMENT

You may submit a request to speak during Public Comment or provide a written comment by emailing PublicComment@lacera.com. If you would like to remain anonymous at the meeting without stating your name, please let us know.

Attention: Public comment requests must be submitted via email to PublicComment@lacera.com.

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION
300 N. LAKE AVENUE, SUITE 650, PASADENA, CA

AGENDA

A REGULAR MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, PASADENA, CALIFORNIA 91101

9:00 A.M., WEDNESDAY, JULY 14, 2021

This meeting will be conducted by teleconference under the Governor's Executive Order No. N-29-20.

Any person may view the meeting online at
https://members.lacera.com/lmpublic/live_stream.xhtml

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. APPROVAL OF MINUTES

A. Approval of the Minutes of the Regular Meeting of June 9, 2021

III. REPORT ON CLOSED SESSION ITEMS

IV. PUBLIC COMMENT

(Written Public Comment - You may submit written public comments by email to PublicComment@lacera.com. Correspondence will be made part of the official record of the meeting. Please submit your written public comments or documentation as soon as possible and up to the close of the meeting.

Verbal Public Comment - You may also request to address the Committee. A request to speak must be submitted via email to PublicComment@lacera.com. We will contact you with information and instructions as to how to access the meeting as a speaker. If you would like to remain anonymous at the meeting without stating your name, please let us know.)

V. CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated June 28, 2021)

VI. CHIEF INVESTMENT OFFICER'S REPORT
(Presentation dated July 14, 2021)

VII. CONSENT ITEMS

A. Recommendation as submitted by Patrick Jones, Chair, Real Assets Committee: That the Board approve the establishment of Co-Investment and Secondaries delegation of authority to the CIO for Real Assets following the parameters on slide 18 of the attached presentation.
(Memo dated June 24, 2021)

VIII. NON-CONSENT ITEMS

A. Recommendation as submitted by Scott Zdrazil, Senior Investment Officer: That the Board deliberate whether to nominate a candidate to the board of the United Nations-affiliated Principles for Responsible Investment.
(Memo dated June 25, 2021)

B. Recommendation as submitted by Joseph Kelly, Chair, Audit Committee: That the Board approve and adopt the revised Audit Committee Charter.
(Memo dated June 30, 2021)

IX. REPORTS

A. Board of Investments Offsite Planning Update
Jonathan Grabel, Chief Investment Officer
(Memo dated June 28, 2021)

B. 2021 Actuarial Risk Assessment Report
Santos H. Kreimann, Chief Executive Officer
Ted Granger, Interim Chief Financial Officer
Mark Olleman, Consulting Actuary
Nick Collier, Consulting Actuary
Craig Glyde, Consulting Actuary
(Memo Dated June 24, 2021)

C. Real Estate Process Workflow Findings – Update III
Esmeralda del Bosque, Senior Investment Officer
Cindy Rivera, Senior Investment Analyst
(For Information Only) (Memo dated June 25, 2021)

D. OPEB Master Trust – Strategic Asset Allocation Update
Jonathan Grabel, Chief Investment Officer
Jude Pérez, Principal Investment Officer
Esmeralda del Bosque, Senior Investment Officer
(For Information Only) (Memo dated June 23, 2021)

IX. REPORTS (Continued)

E. Global Investor Statement on Climate Change
Scott Zdrazil, Senior Investment Officer
Dale Johnson, Investment Officer
Crystal Milo, Senior Investment Analyst
(For Information Only) (Memo dated June 10, 2021)

F. Principles for Responsible Investment Voting Ballot
Scott Zdrazil, Senior Investment Officer
(For Information Only) (Memo dated June 25, 2021)

G. U.S. Securities and Exchange Commission Comment Letter Regarding Climate Change and ESG Disclosures
Scott Zdrazil, Senior Investment Officer
(For Information Only) (Memo dated June 25, 2021)

H. OPEB Master Trust - Investment Policy Statement Update
Jude Pérez, Principal Investment Officer
(For Information Only) (Memo dated June 17, 2021)

I. Polar Asset Management Update Regarding Criminal and SEC Actions Against Trader
Vache Mahseredjian, Principal Investment Officer
Chad Timko, Senior Investment Officer
Quoc Nguyen, Investment Officer
(For Information Only) (Memo dated July 6, 2021)

J. U.S. Supreme Court Decision in Goldman Sachs Group, Inc. v. Arkansas Teachers Retirement System
Michael D. Herrera, Senior Staff Counsel
(For Information Only) (Memo dated July 2, 2021)

K. Legal Projects
Christine Roseland, Senior Staff Counsel
(For Information Only) (Memo dated June 28, 2021)

L. Monthly Status Report on Legislation
Barry W. Lew, Legislative Affairs Officer
(For Information Only) (Memo dated June 25, 2021)

IX. REPORTS (Continued)

M. Monthly Education and Travel Reports for May 2021
Ted Granger, Interim Chief Financial Officer
(Public Memo dated June 24, 2021)
(Confidential Memo dated June 24, 2021 – Includes Anticipated Travel)
(For Information Only)

N. June 2021 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 June 25, 2021)

X. ITEMS FOR STAFF REVIEW

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

XII. 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. Webster Capital V, L.P. Recommendation
Christopher J. Wagner, Principal Investment Officer
Derek Kong, Investment Officer
(Memo dated June 21, 2021)

2. Bain Capital Real Estate Fund II
Amit Aggarwal, Investment Officer
Kevin Bassi, Senior Investment Analyst
(Memo dated June 29, 2021)

3. Smart Infrastructure Capital Partners Fund I, L.P.
James Rice, Principal Investment Officer
Daniel Joye, Investment Officer
(Memo dated June 25, 2021)

XII. EXECUTIVE SESSION (Continued)

4. KKR Diversified Core Infrastructure Fund, L.P.
James Rice, Principal Investment Officer
Daniel Joye, Investment Officer
Noah Damsky, Senior Investment Analyst
(Memo dated July 1, 2021)

B. Conference with Legal Counsel – Anticipated Litigation Significant Exposure to Litigation (Pursuant to Paragraph (2) of Subdivision (d) of California Government Code Section 54956.9)

1. One Case

C. Potential Threats to Public Services or Facilities (Pursuant to Subdivision (a) of California Government Code Section 54957) Consultation with: Chief Information Security Officer, Bob Schlotfelt, Principal Investment Officer, Jude Pérez, and Other LACERA Staff. (Presentation dated July 2021)

XIII. 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.

****Requests for reasonable modification or accommodation of the telephone public access and Public Comments procedures stated in this agenda from individuals with disabilities, consistent with the Americans with Disabilities Act of 1990, may call the Board Offices at (626) 564-6000, Ext. 4401/4402 from 8:30 a.m. to 5:00 p.m. Monday through Friday or email PublicComment@lacera.com, but no later than 48 hours prior to the time the meeting is to commence.***

MINUTES OF THE REGULAR MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, PASADENA, CALIFORNIA 91101

9:00 A.M., WEDNESDAY, JUNE 9, 2021

This meeting was conducted by teleconference under the Governor's Executive Order No. N-29-20.

PRESENT: Keith Knox, Chair (Attended meeting in-person)

Alan Bernstein, Secretary

David Green

Elizabeth Greenwood

Shawn Kehoe

Patrick Jones

Gina V. Sanchez (Attended meeting in-person)

Herman Santos

ABSENT: Joseph Kelly

STAFF ADVISORS AND PARTICIPANTS

Santos H. Kreimann, Chief Executive Officer

Jonathan Grabel, Chief Investment Officer

Steven P. Rice, Chief Counsel

Johanna Fontenot, Interim Chief Counsel

JJ Popowich, Assistant Executive Officer

Christine Roseland, Senior Staff Counsel

Jude Perez, Principal Investment Officer

STAFF ADVISORS AND PARTICIPANTS (Continued)

James Rice, Principal Investment Officer

Vache Mahseredjian, Principal Investment Officer

Esmeralda del Bosque, Senior Investment Officer

Chad Timko, Senior Investment Officer

Quoc Nguyen, Investment Officer

Daniel Joye, Investment Officer

Meketa Investment Group
Leandro Festino, Managing Principal
Timothy Filla, Managing Principal
Alina Yuan, Associate

Albourne
Mark White, Head of Real Assets
James Walsh, Partner
Steven Kennedy, Partner

Englander Knabe & Allen
Eric Rose, Partner
Kellie Hawkins, Senior Vice President

I. CALL TO ORDER

The meeting was called to order by Chair Knox at 9:10 a.m.

II. APPROVAL OF MINUTES

A. Approval of the Minutes of the Regular Meeting of May 19, 2021

Ms. Sanchez made a motion, Mr. Green seconded, to approve the minutes of the regular meeting of May 19, 2021. The motion passed (roll call) with Messrs. Green, Santos, Kehoe, Jones, Bernstein, Knox, Ms. Sanchez and Ms. Greenwood voting yes.

III. REPORT ON CLOSED SESSION ITEMS

There was nothing to report.

IV. PUBLIC COMMENT

Veronica Sance, Michael Guynn, Damien Goodmon, Maagic Collins and Amber Height addressed the Board regarding the Baldwin Hills Crenshaw Plaza. In addition, Patrice Fisher, Dorothy Herrera Settlage, Irene Herrera Stewart, Mabie Settlage and the Hyde Park Organizational Partnership for Empowerment provided a written comment.

V. CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated May 24, 2021)

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

VI. CHIEF INVESTMENT OFFICER'S REPORT
(Presentation dated June 9, 2021)

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

VII. CONSENT ITEMS

Ms. Sanchez made a motion, Mr. Santos seconded, to approve the following consent items. The motion passed (roll call) with Messrs. Green, Santos, Kehoe, Jones, Bernstein, Knox, Ms. Sanchez and Ms. Greenwood voting yes.

A. Recommendation as submitted by Herman Santos, Chair, Equity: Public/ Private Committee: That the Board approve the proposed private equity emerging manager program discretionary separate account manager search request for proposal minimum qualifications advanced by the Equity Committee. (Memo dated May 24, 2021)

VII. CONSENT ITEMS (Continued)

B. Recommendation as submitted by Herman Santos, Chair, Equity: Public/ Private Committee: That the Board approve the proposed Global Equity Emerging Manager Search Request for Proposal Minimum Qualifications advanced by the Equity Committee. (Memo dated May 25, 2021)

VIII. NON-CONSENT ITEMS

A. Recommendation that the Board approve attendance of Trustees at Duke University Executive Education Program Corporate Social Responsibility will be held on September 23 – 25, 2021 and approve reimbursement of all travel costs incurred in accordance with LACERA's Trustee Education and Trustee Travel Policies.
(Placed on the agenda at the request of Mr. Bernstein)
(Memo dated May 6, 2021)

Ms. Sanchez made a motion, Ms. Greenwood seconded, to approve attendance of Trustees at Duke University Executive Education Program Corporate Social Responsibility that will be held on September 23 – 25, 2021 and approve reimbursement of all travel costs incurred in accordance with LACERA's Trustee Education and Trustee Travel Policies. The motion passed (roll call) with Messrs. Green, Santos, Kehoe, Jones, Bernstein, Knox, Ms. Sanchez and Ms. Greenwood voting yes.

B. Recommendation that the Board approve attendance of Trustees at the 2021 Global Investors Annual Meeting on December 13 – 14, 2021in New York, NY and approve reimbursement of all travel costs incurred in accordance with LACERA's Trustee Education and Trustee Travel Policies.
(Placed on the agenda at the request of Mr. Santos)
(Memo dated May 23, 2021)

VIII. NON-CONSENT ITEMS (Continued)

Ms. Sanchez made a motion, Mr. Bernstein seconded, to approve attendance of Trustees at the 2021 Global Investors Annual Meeting on December 13 – 14, 2021in New York, NY and approve reimbursement of all travel costs incurred in accordance with LACERA's Trustee Education and Trustee Travel Policies. The motion passed (roll call) with Messrs. Green, Santos, Kehoe, Jones, Bernstein, Knox, Ms. Sanchez and Ms. Greenwood voting yes.

C. Recommendation as submitted by Jonathan Grabel, Chief Investment Officer, Jude Pérez, Principal Investment Officer, Esmeralda V. del Bosque, Senior Investment Officer: That the Board approve the Strategic Asset Allocation ("SAA") option B, on page 8 of Meketa Investment Group's presentation and within Chart 1 of this memorandum, for the OPEB Master Trust. (Memo dated June 1, 2021)

Messrs. Grabel, Perez and Ms. Del Bosque and Mr. Festino of Meketa

Investment Group provided a presentation and answered questions from the Board.

Mr. Santos made a motion, Ms. Sanchez seconded, to approve the Strategic Asset Allocation Option B, on page 8 of Meketa Investment Group's presentation and within Chart 1 of the memorandum, for the OPEB Master Trust. The motion passed (roll call) with Messrs. Green, Santos, Kehoe, Jones, Bernstein, Knox, Ms. Sanchez and Ms. Greenwood voting yes.

IX. REPORTS

A. Total Fund and OPEB Benchmark Review
Jonathan Grabel, Chief Investment Officer
Jude Pérez, Principal Investment Officer
Stephen McCourt, Managing Principal
Leandro Festino, Managing Principal
Timothy Filla, Managing Principal
Alina Yuan, Associate
(Memo dated May 28, 2021)

Messrs. Grabel and Perez and Mr. Filla and Ms. Yuan of Meketa Investment

Group provided a presentation and answered questions from the Board.

B. Asian Corporate Governance Association Voting Ballot
Scott Zdrazil, Senior Investment Officer
Crystal Milo, Senior Investment Analyst
(For Information Only) (Memo dated May 14, 2021)

This item was received and filed.

C. LACERA's Southern California DEI Conference
Amit Aggarwal, Investment Officer
Cheryl Lu, Investment Officer
(For Information Only) (Memo dated May 26, 2021)

This item was received and filed.

D. State Street – Settlements for Overage Charges
Jude Pérez, Principal Investment Officer
Esmeralda V. del Bosque, Senior Investment Officer
(For Information Only) (Memo dated May 27, 2021)

This item was received and filed.

E. OPEB Master Trust Terms Relating to Withdrawals and Investment Types
Johanna Fontenot, Interim Chief Counsel
Christine Roseland, Senior Staff Counsel
(For Information Only) (Memo dated May 28, 2021)

This item was received and filed.

IX. REPORTS (Continued)

F. LACERA Quarterly Performance Book
Meketa Fund Evaluation Report
Jude Perez, Principal Investment Officer
(For Information Only) (Memo dated May 28, 2021)

This item was received and filed.

G. OPEB Quarterly Performance Book
Meketa OPEB Fund Evaluation Report
Jude Perez, Principal Investment Officer
(For Information Only) (Memo dated May 28, 2021)

This item was received and filed.

H. Legal Projects
Christine Roseland, Senior Staff Counsel
(For Information Only) (Memo dated May 28, 2021)

This item was received and filed.

I. Monthly Status Report on Legislation
Barry W. Lew, Legislative Affairs Officer
(For Information Only) (Memo dated May 24, 2021)

This item was received and filed.

J. Monthly Education and Travel Reports for May 2021
Ted Granger, Interim Chief Financial Officer
(Public Memo dated May 20, 2021)
(Confidential Memo dated May 20, 2021 – Includes Anticipated Travel)
(For Information Only)

3rd Quarter Education and Travel Expenditure Reports
(Memo dated May 20, 2021)

This item was received and filed.

IX. REPORTS (Continued)

K. May 2021 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 May 26, 2021)

This item was received and filed.

X. ITEMS FOR STAFF REVIEW

There was nothing to report.

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

Chair Knox recognized, Carol Quinn, Cynthia Leshay, Melissa Mooc, Debra Rendon and Linda El-Farra as the unsung heroes of the month.

Mr. Grabel recognized Ron Senkandwa for volunteering to assist with the presentation at the Board of Investment meeting.

XII. 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. AM Asia Strategies Fund LP
Vache Mahseredjian, Principal Investment Officer
Chad Timko, Senior Investment Officer
Quoc Nguyen, Investment Officer
(Memo dated May 26, 2021)

Messrs. Mahseredjian, Timko, Nguyen and Messrs. Walsh, White and Kennedy from Albourne provided a presentation and answered questions from the Board.

XII. EXECUTIVE SESSION (Continued)

Mr. Santos made a motion, seconded by Ms. Sanchez, that the Board approve an investment of $100 million to AM Asia Strategies Fund LP managed by AM Squared General Partner Limited. This investment is a relative value multi-strategy hedge fund that includes a diverse group of investment strategies focused on Asia. The motion passed (roll call) with Messrs. Green, Santos, Kehoe, Jones, Bernstein, Knox and Ms. Sanchez and Ms. Greenwood voting yes.

2. AXIUM Infrastructure North America
James Rice, Principal Investment Officer
Daniel Joye, Investment Officer
(Memo dated May 21, 2021)

Messrs. Rice and Joye and Messrs. Walsh, White and Kennedy from Albourne provided a presentation and answered questions from the Board.

Mr. Santos made a motion, seconded by Ms. Sanchez, to approve a commitment of 200 million Canadian Dollars (approximately ~$165 million USD) to Axium's Canada open-ended fund and $250 million to Axium's U.S. open-ended fund. Combined fund commitments would total approximately ~$415 million USD. These funds target middle market contracted and/or regulated assets in energy infrastructure, transportation infrastructure, and social infrastructure in locations focused, respectively, in Canada and in the U.S. The motion passed (roll call) with Messrs. Green, Santos, Jones, Knox and Ms. Sanchez and Ms. Greenwood voting yes and Messrs. Kehoe and Bernstein voting no.

XII. EXECUTIVE SESSION (Continued)

3. Private Equity Investment Update
David Chu, Senior Investment Officer
Derek Kong, Investment Officer
(For Information Only) (Memo dated May 11, 2021)

The Board received an information only report providing notice that LACERA completed a co-investment commitment of up to £26 million (approximately ~$36 million USD) alongside Silver Lake Partners. The commitment is compliant with the private equity co-investment guidelines.

B. Conference with Legal Counsel – Anticipated Litigation Significant Exposure to Litigation (Pursuant to Paragraph (2) of Subdivision (d) of California Government Code Section 54956.9)

1. One Case

There was nothing to report.

XIII. ADJOURNMENT

There being no further business to come before the Board, the meeting was adjourned in memory of SEIU 721 President, Linda Dent and Firefighter Tory Carlon at 12:14 p.m.

ALAN BERNSTEIN, SECRETARY

KEITH KNOX, CHAIR

L//.CERA

June 28, 2021

TO: Each Trustee,
Board of Retirement
Board of Investments

FROM: Santos H. Kreimann SHK
Chief Executive Officer

SUBJECT: **CHIEF EXECUTIVE OFFICER'S REPORT – JUNE 2021**

The following reflects the Chief Executive Officer's Report for June 2021 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 our educational calendar.

<u>Our Ongoing COVID-19 Response & New Guidelines Related to Return to Work</u>

As a result of Governor Newsom's decision to fully open California's economy commencing on June 15, 2021, the agencies associated with the health and protection of employees and the public have also reviewed and revised their published protocols. This includes the Los Angeles County Department of Public Health, the Centers for Disease Control, Cal-OSHA, and the Pasadena Department of Public Health. LACERA's Executive Office, Legal, Human Resources, and the Business Continuity Team have monitored these publications and are continually reviewing these protocols to determine the best course of action for LACERA. First and foremost, our goal is to protect our Staff, Trustees, and Members as we plan for them to return to LACERA.

Although Cal-OSHA published guidelines no longer requiring vaccinated employees to wear masks under most conditions, or practice social distancing around other vaccinated employees, Cal-OSHA permits public agencies to maintain more stringent regulations. Los Angeles County has decided to maintain the stricter requirements for all staff until the details of how to manage these restrictions have been worked out in a way that protects the health of staff and the public. This includes the requirement for all staff to wear masks, whether they are vaccinated or not, and comply with physical distancing of at least six feet between staff.

Recent reports indicate that the Delta variant of COVID-19 is on the rise, with the Los Angeles Times reporting a 17% increase in COVID cases over the last 14 days. Additionally, the Times reports only about 58.1% of Californians have been at least partially vaccinated (latimes.com). It should also be noted that most new infections are among the unvaccinated, indicating the efficacy and benefits of being vaccinated.

Leading up to the Governor's announcement about re-opening California's economy and the subsequent reviews of COVID-19 protocols discussed above, LACERA continued to follow the Public Health guidelines, including requiring the practice of social distancing, wearing a mask, and limiting the number of staff members physically in our offices daily. Based on the most recent numbers, we are averaging approximately 13.5% of our staff in the office on any given day. Regular audits by our Health and Safety Team have reported near 100% compliance with our mask and social distancing requirements for staff members in the office. Our precautions have helped contribute to no confirmed positive COVID-19 results and only one reported incident of a staff member exposed over the last month.

Taking all of this into consideration, the Executive Office has determined our best option at this time is to maintain our current protocols. . We will continue requiring all staff to wear masks and continue to adhere to the physical distancing protocols when in the office. As we work to bring staff members back into the office, we will continually re-evaluate our protocols, including our mask and social distancing requirements. These protocols will continue until we define the protocols and procedures related to reporting and tracking those staff who have been vaccinated.

Meanwhile, the County has expanded the vaccination eligibility list to allow persons 12 and older to be vaccinated. We continue to support and encourage staff members to get themselves and their families vaccinated. LACERA has asked staff members who have been fully vaccinated to voluntarily report that information to Human Resources. However, as of the date of this memo, only 10% (41 staff members) reported being fully vaccinated.

New Cal-OSHA guidelines require that LACERA proactively educate staff members on the benefits and efficacy of vaccination. Human Resources, Business Continuity, and Communications are partnering to develop a new proactive vaccination education plan for LACERA staff. Our plan is to launch this new effort before the end of July. We hope this new campaign will encourage more staff members to get vaccinated.

Also, in an effort to comply with Cal-OSHA guidelines to allow staff members to interact more freely if they are vaccinated, we will be requiring all staff members to safely and securely report to Human Resources when they have been vaccinated. This will allow LACERA to have a better understanding of the safety of our staff members within the organization and help improve our ongoing safety protocols. We are currently working on the details on how we will safely and securely collect and verify that information and will provide an update to staff and the Trustees once we have finalized the procedures. It is important to remember that rolling out these programs requires LACERA to protect the confidential health information of our staff members. The goal is to rollout this program by mid-July.

Finally, for those staff members who may still get infected or who may have to care for family who may get infected, they are able to apply for Supplemental Paid Sick Leave for COVID-19 and vaccine related absences.

What Has LACERA Done to Prepare for the Return of the Majority of Staff to the Office?

The Executive Office has set a mid-September return to the office for most of our staff. Some staff members who have been consistently working at the office will continue with their assignments, and some, like those in our Member Service Center, will return earlier. However, most of our staff members will continue to work remotely through mid-September.

The Business Continuity Team and the Executive Office have been hard at work preparing for the safe return of our staff to the office. The Executive Office has met with each Division Manager to discuss their plan for the return of staff to their division. Each Division Manager will submit a copy of the Return-to-Work plan for their division to us for review prior to the mid-September planned return to work date.

As a follow up to this discussion, the Business Continuity Team and Systems have met with each Manager to walk through their division to discuss what precautions will be implemented to protect staff who are currently coming into the office, as well as to prepare for the time that all staff will come back to the office on a rotational basis. These preparations include HEPA air filters in each division, directional signage placed to direct traffic in and out of the division, as well as posters reminding staff to wipe down equipment in the common areas of the division used by multiple staff, and the occupancy restrictions for the common areas in the division. Systems communicated with each Division Manager to discuss any IT equipment needs that they may have for their staff when they return to the office, such as headsets and cameras. We have placed self-check thermometers in the elevator lobby of each LACERA floor for staff to voluntarily use. We have also requested that the Procurement staff order N95 masks to have on hand to meet the Cal-OSHA requirement of employers to provide these masks to those who are unvaccinated and at the work site.

We will continue to monitor any changes communicated by the public health agencies and Los Angeles County as we discuss our next actions related to staff's return to the work site at LACERA. Our discussions have and will continue to focus on those guidelines and requirements that make the most sense to LACERA while adhering to the required protocols and, at the same time, protecting our staff, Trustees, and Members.

Member Service Center Re-Opening

We have completed plans and are prepared for our July 6, 2021, limited re-opening of the Member Service Center (MSC). Throughout this month, final preparations were made to ensure a smooth re-opening. The management team reviewed procedures and protocols with the Business Continuity Team and made final adjustments. During the week of June 21st, all MSC staff were trained by the Business Continuity Team on the safety protocols and procedures. Staff members were in the office on a rotational basis to set up their workstations and were also provided with an ergonomic assessment due to the revised workstation configurations. You may recall in preparation for this we added protective barriers and independent monitors – one for staff to review a member's account and one for the member to view. This was a positive by-product of the safety protocols we put in as it will be easier for members to view information on the screen which can be adjusted for their comfort.

In mid-June the CEO's Message sent to members via email and posted online announced the re-opening and shared some of the changes that will be implemented including:

- We will no longer offer walk-in appointments. However, you can easily set up a specific time to talk with a Retirement Benefits Specialist through our online appointment system.
- We have installed a secure drop-off mailbox so you can easily leave documents with us without waiting in line.
- We will continue offering our virtual counseling sessions, workshops, and seminars.

We have implemented a number of steps to help ensure the safety and health of our members and staff. All members visiting the MSC will be asked to self-affirm that they have no symptoms of COVID-19 prior to coming to the MSC. We have also installed a self-check thermometer at the MSC entry and will be asking members to self-check temperatures as part of their self-affirmation process. All members will be required to wear a face covering while in the MSC . Members who arrive without a face-covering will be offered one. Those refusing to wear one will be asked to schedule a virtual appointment. We have also limited each member to one family member who may accompany them. Members will be advised of these requirements during the appointment set-up process, in email confirmations, and in email reminders.

Recruitment Updates

Our Human Resources team is currently in the process of running several promotional exams and open and competitive exams to fill vacancies with the most qualified internal and external candidates. Finding the right candidates who will add value to the organization and help move us forward in meeting our goals is a top priority of our Human Resources Division. Here is an update on our current recruitment exams:

- Assistant Executive Officer (AEO): The first-round interviews are completed, and two candidates are recommended for final interview.
- Retirement Benefits Specialist (RBS) III: Candidates are completing the examination process.
- Senior Staff Counsel and Staff Counsel: Competitive applicants are encouraged to submit their resume.
- Senior Disability Retirement Specialist: Candidates are completing the examination process.
- Competitive candidates are encouraged to apply for the following recruitments. The recruiting period will remain open until a pool of qualified applications is received:

- Senior Accountant
- Media Artist
- Retirement Benefits Specialist I
- Procurement and Supply Clerk

We also have an on-going recruitment for Retirement Benefit Specialist I positions for our scheduled August 1, 2021, new hire CORE Benefits Training class. Unfortunately, response to this job offering was slower than we normally experienced in past recruitment efforts, and it has taken us longer than expected to get enough applicants to give us the best opportunity to reach our target numbers. Staff believes we have reached a large enough pool to begin the next phase and suspended the bulletin on June 29th. The delay in getting a large enough applicant pool will delay the start of our class to October 2021.

Labor Negotiations Update

LACERA selected Irma Rodriguez Moisa of Atkinson, Andelson, Loya, Ruud & Romo as Labor Negotiator. Ms. Moisa has 25 years of labor experience and has represented various public agencies during negotiations. LACERA started its pre-negotiation preparation in anticipation of successful negotiations with our labor partners at SEIU. We plan to schedule a closed session to seek direction from the Board Trustees on how to proceed with negotiations.

Retiree Healthcare – Plan B Verifications

In late April 2021, RHC staff reported a backlog in the scanning of Part B verifications. The Document Processing Center (DPC), upon having additional staffing, was able to scan in excess of 11,000 Part B verifications. Since clearing this backlog, RHC has successfully processed over 10,000 with a little more than 1,700 annual verifications remaining to be processed. In the 2019-2020 plan year, it was September 2020 before RHC was able to complete the processing of the verifications; just prior to the new 2021 Part B premium announcement being made in November 2020.

In total for the 2020-2021 plan year, RHC has received over 21,500 Part B verifications. Kudos to DPC staff for scanning the volume of incoming Part B verifications and to RHC staff for doing an outstanding job in getting them processed ahead of last year's timeline.

Blue Cross Blue Shield Settlement (BCBS) Notice Update

In April 2021, staff informed the Board of an impending Blue Cross Blue Shield Settlement Notice in which some of our retirees are receiving emails and/or postcards. On November 30, 2020, the Court preliminarily approved the BCBS Antitrust class settlement for subscribers. For purposes of the settlement, the Court appointed counsel for the class and appointed JND as the settlement administrator.

We are aware that the court ordered Anthem to produce class member data to JND, including premium or administrative fee data, coverage history, mailing addresses, and email addresses. The court ordered JND to complete the class notice according to the court-approved notice plan. JND is in possession of all final class member data pursuant to that court order. We were also informed that the provided information will only be used for purposes of effectuating the required settlement notice. Class counsel and JND have created a settlement website with links to documents related to the settlement, links to the online claim form, FAQs, and other information about the settlement at https://www.bcbssettlement.com. We note that the FAQs answer common questions such as who is a class member, the benefits of the settlement, how to file a claim, and what information is (and is not) needed to file a claim (https://www.bcbssettlement.com/faq).

Because the class is represented by class counsel, and to ensure everyone's legal rights are protected, we have been informed that Anthem is unable to provide us with any information relating to the settlement and are directing us to our own attorneys or to class counsel through JND for advice regarding the settlement. As a result, we placed a call into the settlement administrator, JND, to inquire whether or not there is an update on the original notification as we understand some members have received more than one notice, in addition to some other clarification questions we have. As of the memo date, we have not heard back at this time. Claims must be postmarked by November 5, 2021.

As more information is made available regarding the settlement, we will continue to update the Board.

SHK: jp
CEO report June 2021.doc

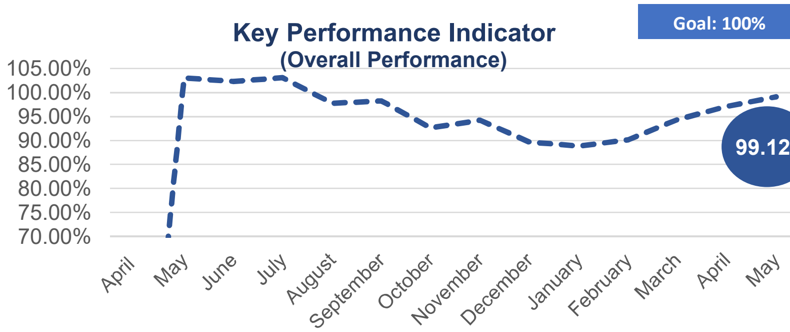
Attachments

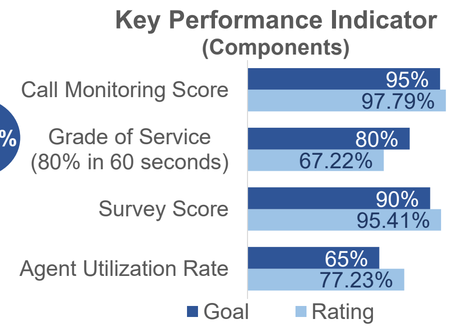
Striving for Excellence in Service

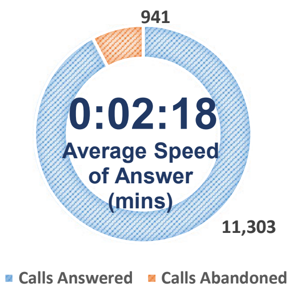
Service Metrics Reported on a Fiscal Year Basis (July 1) Through: May 2021

Outreach Attendance	Outreach Events	Outreach Satisfaction	Member Service Center	Member Services Calls
1,467	**32**	**N/A**	**N/A**	**12,244**
17,606 Year-to-Date	242 Year-to-Date	Change Since Last Mo	- Change Since Last Mo	14,669 3 Mo. Avg.

Member Services







Top Calls

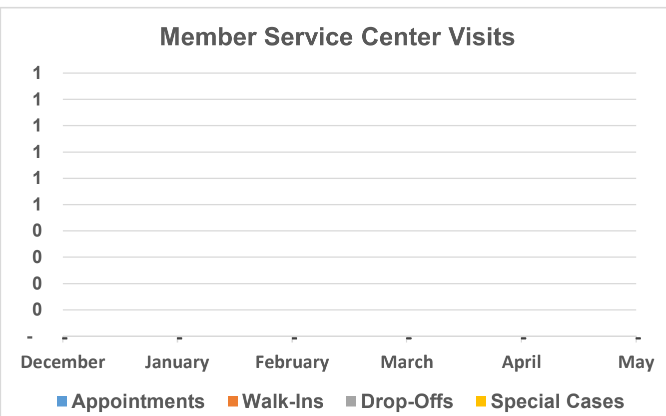
1. MyLACERA Portal Login Issues
2. Retirement Counseling: Process Overview
3. Retirement Counseling: Estimate

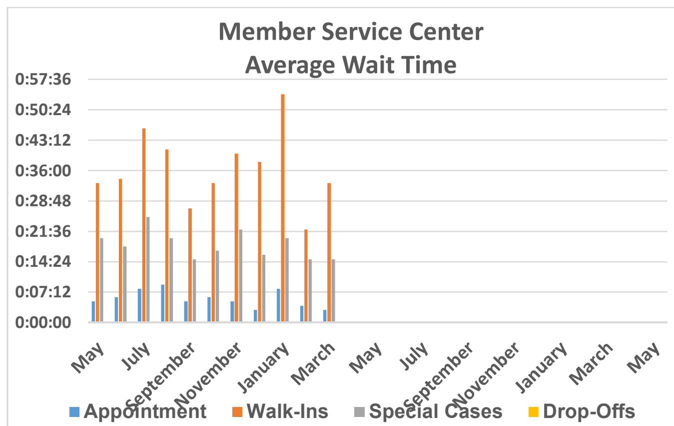
Emails 645

24:00 hours

Avg. Response Time (ART)

Secure Messages 675

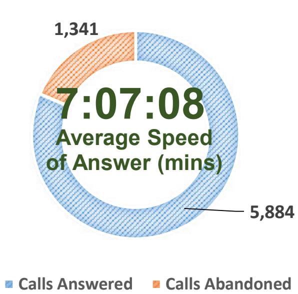




*Drop Off Wait Time: No Waiting

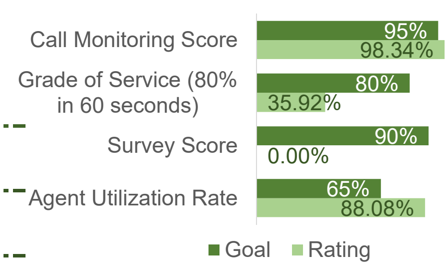
Retiree Healthcare

Total RHC Calls: 7,225



Top Calls

1. Medical/Dental Enrollments
2. Medical Benefits
3. Medicare Part B Reimbursements



Emails 522

10 Days

Avg. Response Time (ART)

Secure Messages 325

Striving for Excellence in Service (Continued)

Disability

Applications

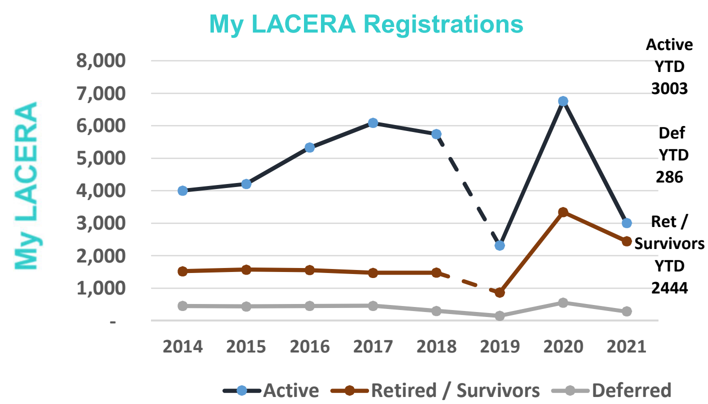
712
In Process As Of: 5/31/2021

717	Pending on: 4/30/2021
47	Received
627	Year-to-Date
0	Re-Opened
0	Year-to-Date
45	To Board - Initial
497	Year-to-Date
7	Closed
61	Year-to-Date

Appeals

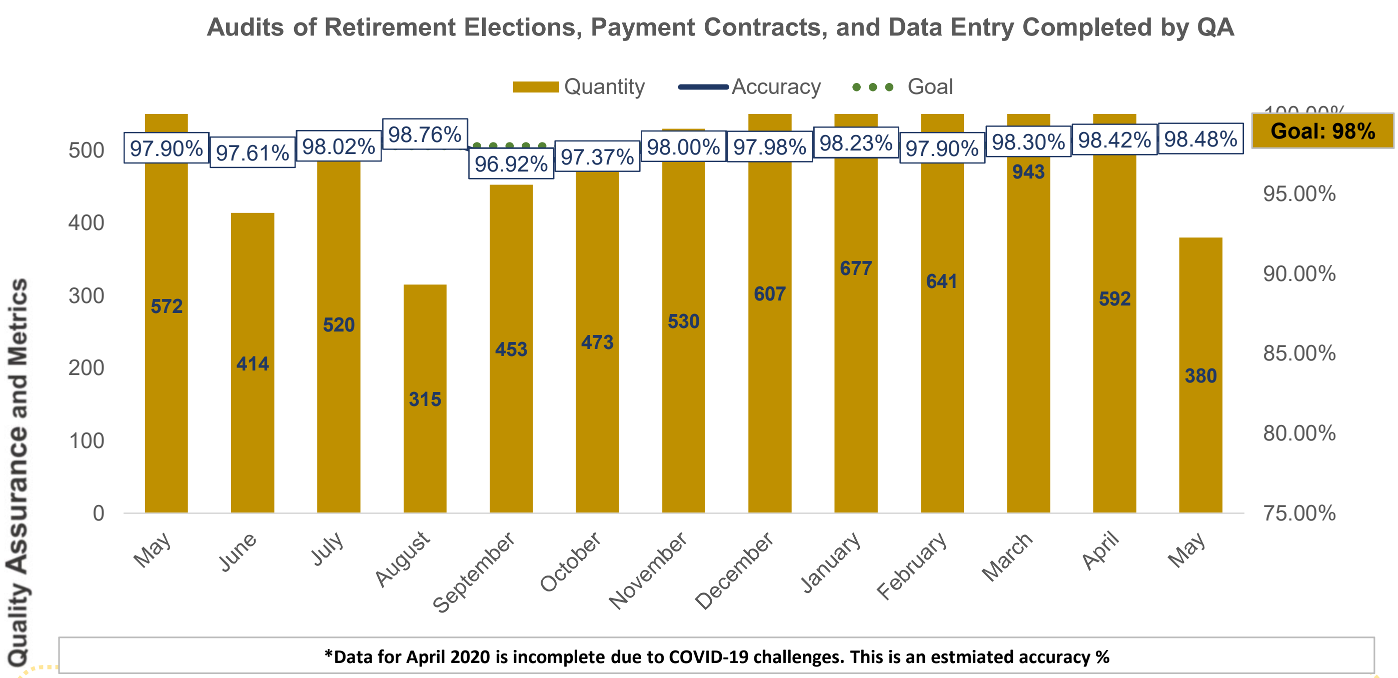
95
In Process As Of: 5/31/2021

94	Pending on: 4/30/2021
1	Received
13	Year-to-Date
0	Admin Closed/Rule 32
9	Year-to-Date
0	Referee Recommended
7	Year-to-Date
0	Revised/Reconsidered for Granting
1	Year-to-Date



COVID-19 NOTE
Some Member Services, Retiree Healthcare, and Quality Assurance statistics became unavailable for a short time beginning in April 2020 due to COVID-19 impacts. Most of the data contained herein is up to date and based on current production both virtually and in the office. However, some data points such as surverys are based on six month average for survey scores prior to the pandemic.

Striving for Excellence in Quality



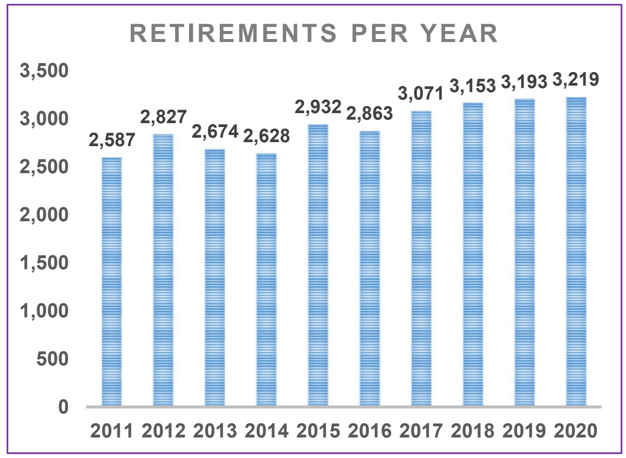
*Data for April 2020 is incomplete due to COVID-19 challenges. This is an estmiated accuracy %

May 2021
98.48%

Retirement Elections		Payment Contracts		Data Entry	
128	Samples	**162**	Samples	**90**	Samples
98.38%	Accuracy	**97.38%**	Accuracy	**99.67%**	Accuracy

Member Snapshot

	Members as of 06/14/2021				
	Plan	Active	Retired	Survivors	Total
General	Plan A	72	14,885	4,259	**19,216**
General	Plan B	19	660	68	**747**
General	Plan C	24	424	64	**512**
General	Plan D	38,347	18,090	1,681	**58,118**
General	Plan E	15,387	14,106	1,387	**30,880**
General	Plan G	32,305	102	9	**32,416**
General	**Total General**	**86,154**	**48,267**	**7,468**	**141,889**
Safety	Plan A	2	4,809	1,621	**6,432**
Safety	Plan B	8,704	6,888	346	**15,938**
Safety	Plan C	4,476	12	1	**4,489**
Safety	**Total Safety**	**13,182**	**11,709**	**1,968**	**26,859**
TOTAL MEMBERS		**99,336**	**59,976**	**9,436**	**168,748**
% by Category		**59%**	**36%**	**6%**	**100%**



Average Monthly Benefit Allowance Distribution June 23, 2021				
	General	Safety	Total	%
$0 to $3,999	29,735	1,700	31,435	52.50%
$4,000 to $7,999	13,347	3,466	16,813	28.08%
$8,000 to $11,999	3,644	4,259	7,903	13.20%
$12,000 to $15,999	996	1,770	2,766	4.62%
$16,000 to $19,999	328	347	675	1.13%
$20,000 to $23,999	100	111	211	0.35%
$24,000 to $27,999	24	27	51	0.09%
> $28,000	18	3	21	0.04%
Totals	**48,192**	**11,683**	**59,875**	**100%**

Average Monthly Benefit Allowance:	$ 4,605.00

Healthcare Program
(Mo. Ending: 05/31/2021)

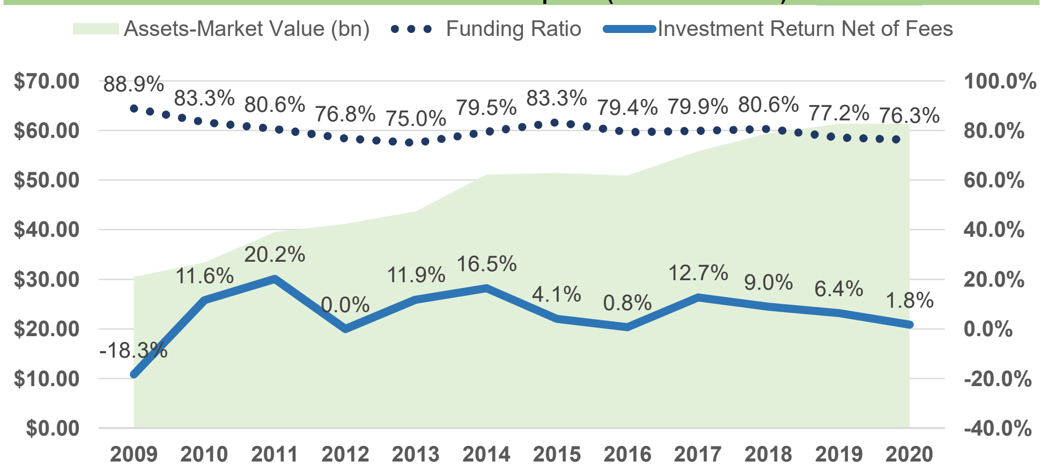
	Employer	Member
Medical	519.8	40.4
Dental	41.7	4.1
Part B	68.9	0
Total	**630.4**	**44.5**

Healthcare Enrollments
(Mo. Ending: 05/31/2021)

Medical	52,417
Dental	53,855
Part B	35,841
LTC	580
Total	**142,693**

Key Financial Metrics

Fiscal Year End Financial Update (as of 06/30/2020)



Funding Metrics
(as of 6/30/20)

Employer NC	10.89%
UAAL	14.85%
Assumed Rate	7.00%
Star Reserve	$614m
Total Assets	$58.5b

Contributions
(as of 6/30/20)

	Employer	Member
Annual Add	$1.8b	$659.3m
% of Payroll	24.64%	7.80%

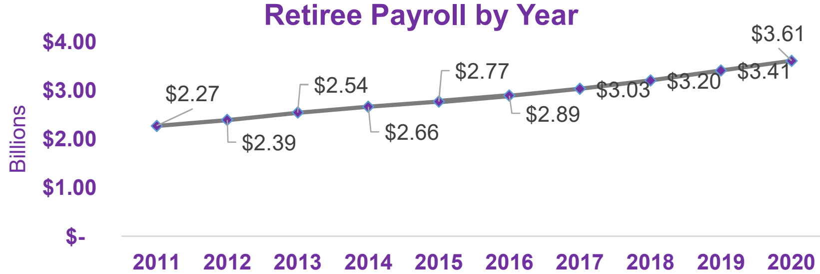
TOTAL FUND RETURN
(Net of Fees)
5 YR: 6.1% **10 YR:** 8.2%

Retired Members Payroll

(As of 05/31/2021)

Monthly Payroll	$332.45m
Payroll YTD	$3.5b
New Retired Payees Added	279
Seamless %	97.85%
New Seamless Payees Added	4,390
Seamless YTD	97.22%
By Check %	2.00%
By Direct Deposit %	98.00%

Retiree Payroll by Year



Date	Conference
July, 2021	
12-23	Government Finance Officers Association (GFOA) Annual Conference 2021 Virtual Conference
13-15	Pacific Pension Institute (PPI) North American Summer Roundtable Virtual
August, 2021	
22-24	NCPERS (National Conference on Public Employee Retirement Systems) Public Pension Funding Forum New York, NY
September, 2021	
17	CALAPRS (California Association of Public Retirement Systems) Round Table – Benefits Virtual *(subject to change in venue)*
21-24	AHIP (America's Health Insurance Plans) National Conferences on Medicare, Medicaid and Dual Eligibles Virtual
22-24	National Association of Securities Professionals (NASP) 32nd Annual Pension & Financial Services Conference Virtual
22-24	Council of Institutional Investors (CII) Fall Conference Virtual/Limited In-Person Attendance
23-25	Duke University Executive Education Program – Corporate Social Responsibility Durham, NC
26-28	NCPERS (National Conference on Public Employee Retirement Systems) FALL (Financial, Actuarial, Legislative & Legal) Conference Scottsdale, AZ
28 – October 1	CALAPRS (California Association of Public Retirement Systems) Principles of Pension Governance for Trustees Virtual *(subject to change in venue)*
October, 2021	
11-15	Investment Strategies & Portfolio Management *(prev. Pension Fund & Investment Mgmt.)* Wharton School, University of Pennsylvania
17-20	IFEBP (International Foundation of Employment Benefit Plans) Annual Employee Benefits Conference Denver, CO
17-20	Milken Institute Global Conference Los Angeles, CA
25-27	PREA (Pension Real Estate Association) Annual Institutional Investor Conference Chicago, IL

Chief Investment Officer Monthly Report

Board of Investments

July 14, 2021

Jonathan Grabel
Chief Investment Officer

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

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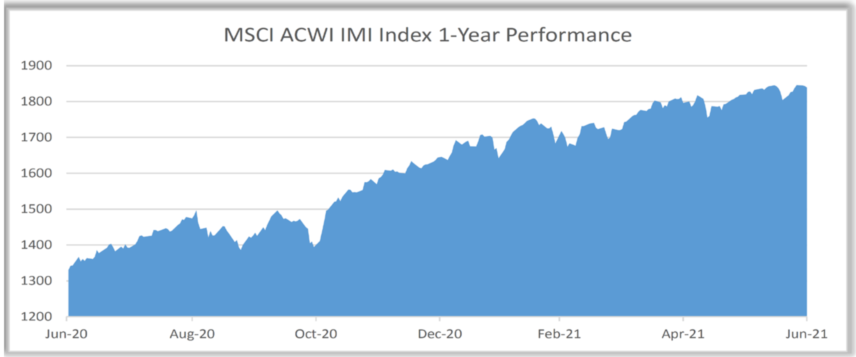
Market Environment

Global Market Performance as of June 30, 2021

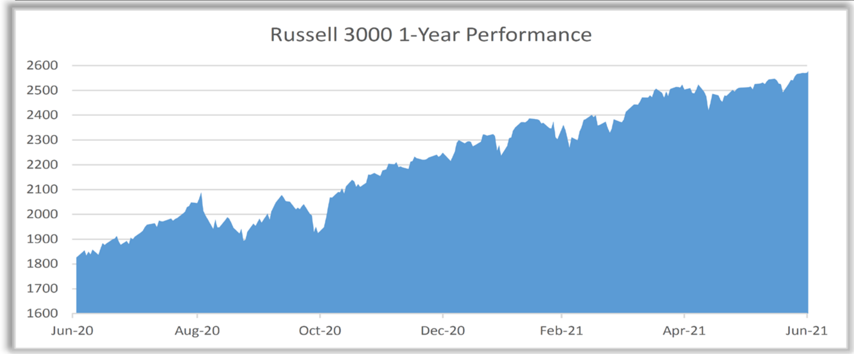
MSCI ACWI Index (Global Equity Market)*

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
1.2	7.2	12.7	40.9	14.2	14.5	9.9



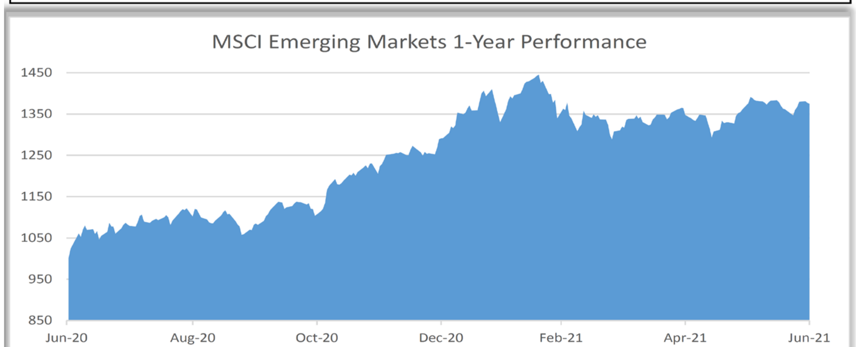
Russell 3000 Index (U.S. Equity Market)

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
2.5	8.2	15.1	44.2	18.7	17.9	14.7



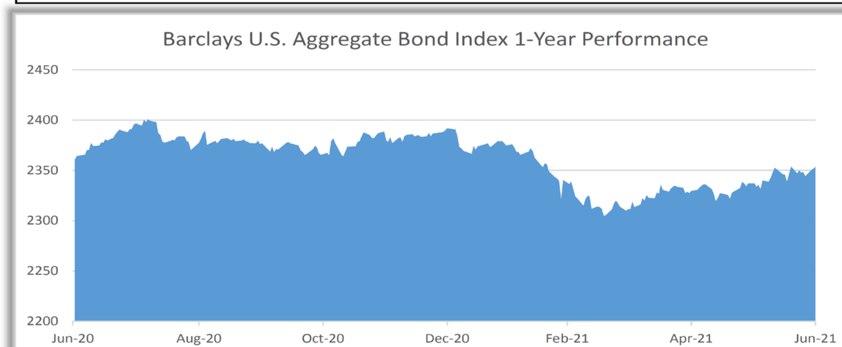
MSCI Emerging Market Index

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
0.2	5.0	7.4	40.9	11.3	13.0	4.3



Barclays U.S. Aggregate Bond Index**

Trailing Returns (%)			Annualized Returns (%)			
1-month	3-month	YTD	1Y	3Y	5Y	10Y
0.7	1.8	-1.6	-0.3	5.3	3.0	3.4

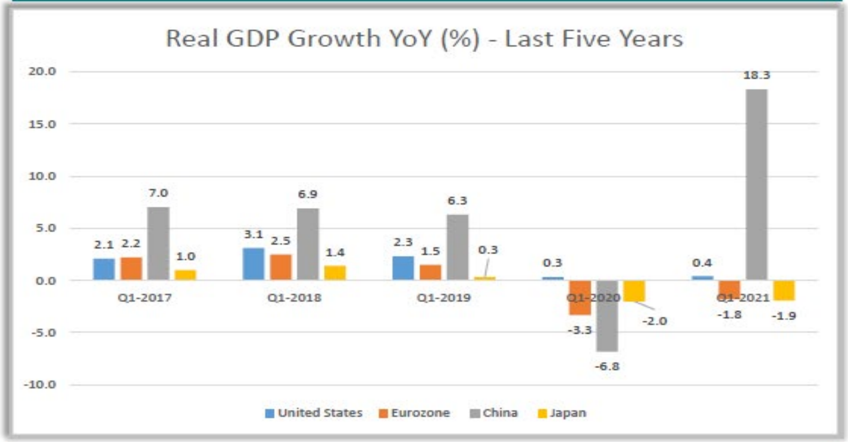


*Global Equity Policy Benchmark - MSCI ACWI IMI Index
**Investment Grade Bonds Policy Benchmark - Barclays U.S. Aggregate Bond Index

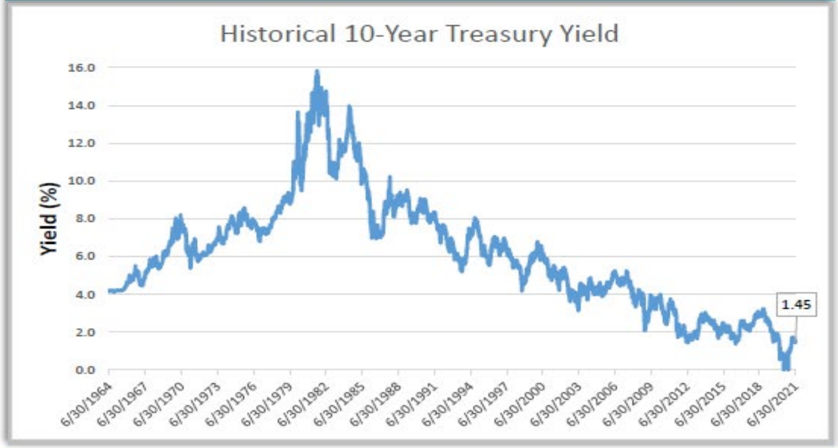
Source: Bloomberg

Key Macro Indicators*

GDP Growth of Major Economies[1]

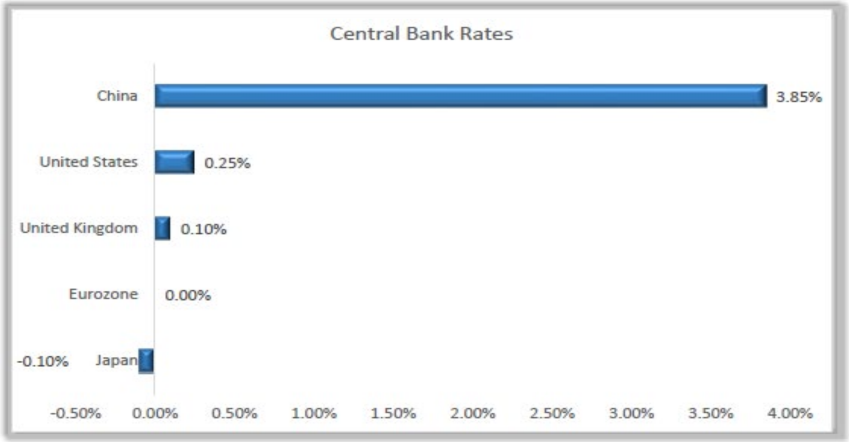


Historical Low for 10-Year Treasury Yield[2]



World Equity Valuation[3]

Central Bank Rates[4]
(as of 6/30/2021)

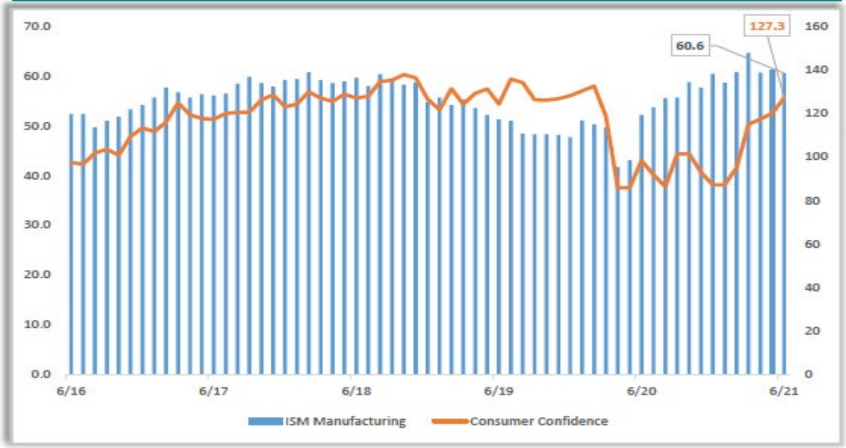


Sources: 1. Bloomberg 2. St. Louis Federal Reserve 3. FactSet 4. FactSet

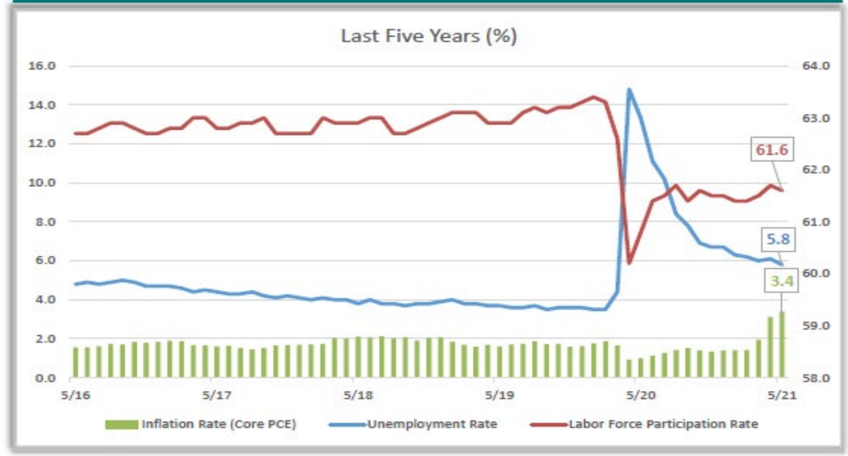
*The information on the "Key Macro Indicators" charts is the best available data as of 6/30/21 and may not reflect the current market and economic environment.

Key Macro Indicators*

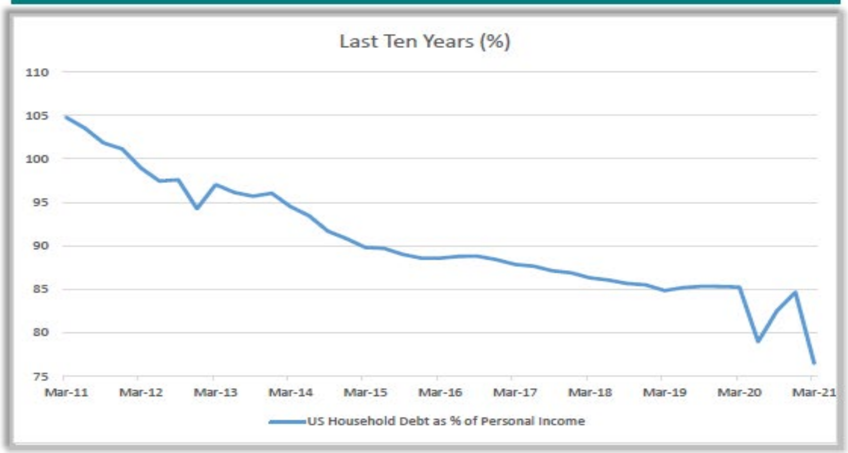
Consumer Confidence & ISM Manufacturing[1]



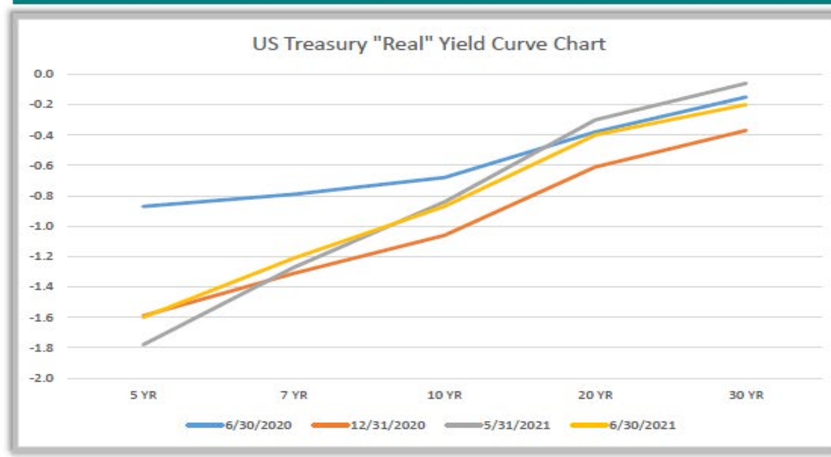
U.S. Inflation, Unemployment, & Labor Force Participation[2]



U.S. Household Debt as % of Personal Income[3]



U.S. Treasury "Real" Yield Curve[4]



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

*The information on the "Key Macro Indicators" charts is the best available data as of 6/30/21 and may not reflect the current market and economic environment.

Market Themes and Notable Items to Watch

Recent Themes

- COVID-19
  - More than 182 million cases, 3.9 million deaths, and 3 billion vaccines administered worldwide
  - Emergence and spread of coronavirus variants
  - Over 46.9% of U.S. population has been fully vaccinated against the coronavirus
- The U.S. 10-year treasury yield ended June at 1.45%, up from 0.93% at the end of 2020
- Global equities set new highs in June
- The U.S. Federal Reserve ("Fed") expects strong job creation going into the fall and increased its inflation forecast for 2021 to 3.4% from 2.4%
- The Fed now expects real gross domestic product to grow 7.0% in 2021, compared to a 6.5% forecast from its March meeting

What to Watch

- COVID-19
  - Economic and consumer behavior impacts as vaccination rates increase
- Global GDP growth rate
- Social equity and civil rights initiatives
- Unemployment and consumer spending
- Potential government infrastructure spending
- Inflation pressures and trends
- Geopolitical risks and trade arrangements
- Yield curve and credit spreads
- Central bank activity

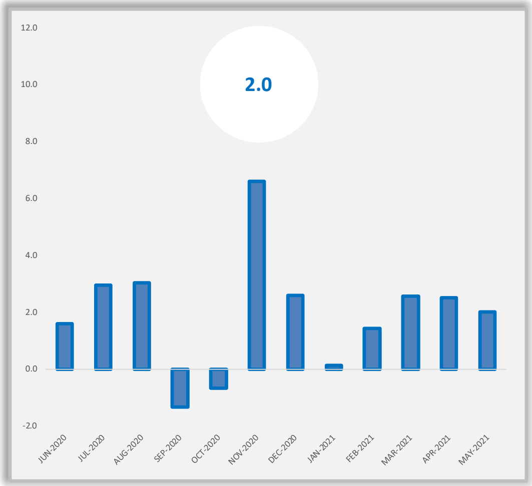
*Sources: Johns Hopkins University

Portfolio Performance & Risk Updates

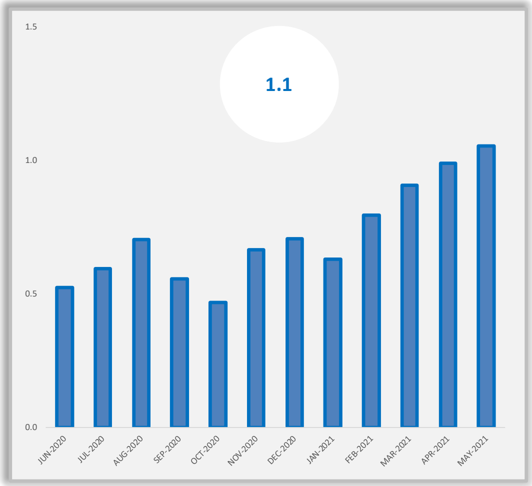
Total Fund Summary

as of May 2021

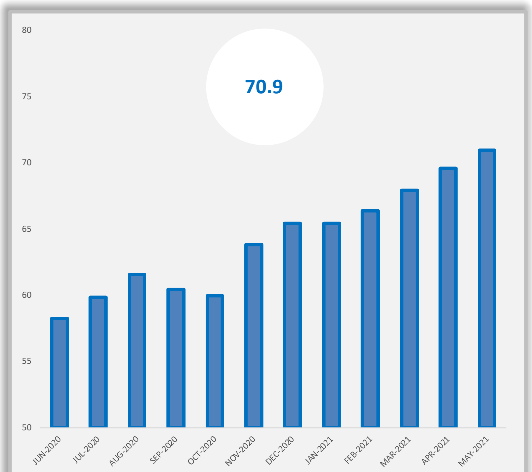
Monthly Return
(% net)



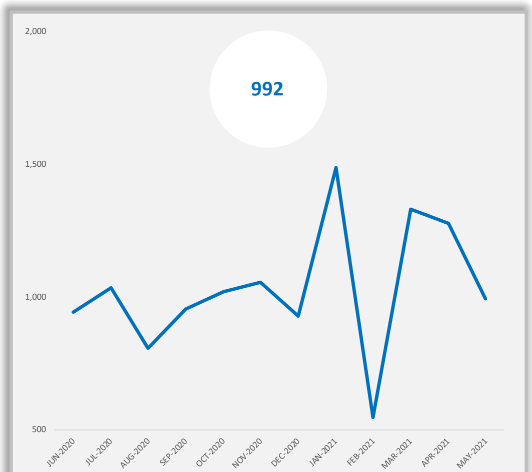
Sharpe Ratio
(3-Year Annualized)



Total Market Value
($ billions)

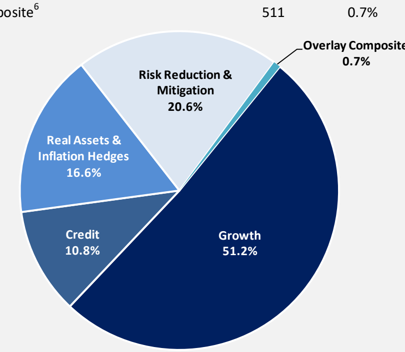


Cash
($ millions)



Asset Allocation

	Market Value[1] ($ millions)	% of Total	Final Target[2]
TOTAL FUND	**70,940**	**100.0%**	
Growth	**36,328**	**51.2%**	**47.0%**
Global Equity	26,071	36.8%	35.0%
Private Equity[3]	9,632	13.6%	10.0%
Opportunistic Real Estate[4]	626	0.9%	2.0%
Credit	**7,662**	**10.8%**	**12.0%**
High Yield	2,218	3.1%	3.0%
Bank Loans	2,625	3.7%	4.0%
Emerging Market Debt	889	1.3%	2.0%
Illiquid Credit[3,4,5]	1,930	2.7%	3.0%
Real Assets & Inflation Hedges	**11,798**	**16.6%**	**17.0%**
Core & Value Added Real Estate[4]	4,584	6.5%	7.0%
Natural Resources & Commodities	3,112	4.4%	4.0%
Infrastructure	2,087	2.9%	3.0%
Treasury Inflation-Protected Securities	2,014	2.8%	3.0%
Risk Reduction & Mitigation	**14,642**	**20.6%**	**24.0%**
Investment Grade Bonds	11,231	15.8%	19.0%
Diversified Hedge Fund Portfolio[5]	2,420	3.4%	4.0%
Cash	992	1.4%	1.0%
Overlay Composite[6]	511	0.7%	—



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 latest available and are adjusted for cash flows
5. Hedge Fund market values reflect a 1-month lag
6. Reflects net cash position for overlay investing

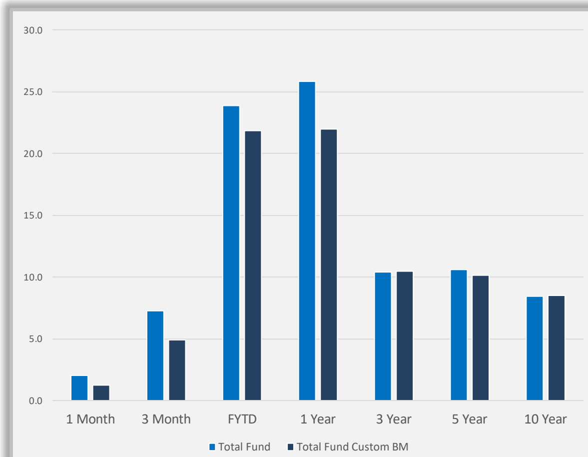
Historical Net Performance

as of May 2021

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	**70,940**	**100.0%**	**100.0%**	**2.0**	**7.3**	**23.9**	**25.8**	**10.4**	**10.6**	**8.4**
Total Fund Custom BM				*1.3*	*4.9*	*21.9*	*22.0*	*10.5*	*10.2*	*8.5*
7% Annual Hurdle Rate				*0.57*	*1.71*	*6.40*	*7.00*	*7.00*	*7.00*	*7.00*
Functional Composites[2]				**1 Month**	**3 Month**	**FYTD**	**1 Year**			
GROWTH	**36,328**	**51.2%**	**47.0%**	**3.0**	**11.9**	**40.4**	**43.7**			
Growth Custom BM				*1.7*	*8.3*	*41.4*	*40.5*			
CREDIT	**7,662**	**10.8%**	**12.0%**	**1.0**	**3.2**	**16.9**	**19.5**			
Credit Custom BM				*0.7*	*0.7*	*8.7*	*10.1*			
REAL ASSETS & INFLATION HEDGES	**11,798**	**16.6%**	**17.0%**	**2.0**	**6.2**	**15.4**	**15.3**			
Real Assets & Inflation Hedges Custom BM				*1.7*	*5.8*	*15.1*	*15.9*			
RISK REDUCTION & MITIGATION	**14,642**	**20.6%**	**24.0%**	**0.3**	**0.4**	**1.9**	**2.8**			
Risk Reduction & Mitigation Custom BM				*0.3*	*0.0*	*-0.4*	*0.1*			
OVERLAY COMPOSITE	**511**	**0.7%**	—							

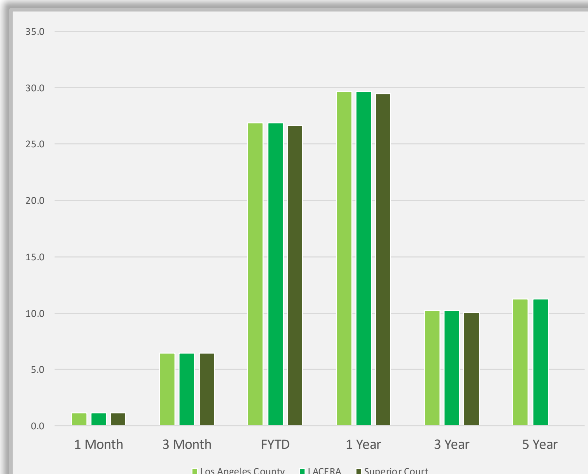
Historical Returns
(% net)



OPEB Master Trust Fund
(% net)

Sub-Trusts	Market Value ($ millions)[3]	Trust Ownership %	Final Target	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year
TOTAL OPEB MASTER TRUST	**2,153**								
Los Angeles County	2,087	96.9%	—	1.2	6.5	26.9	29.7	10.3	11.2
LACERA	8	0.4%	—	1.2	6.5	26.9	29.7	10.3	11.3
Superior Court	58	2.7%	—	1.2	6.4	26.7	29.5	10.1	—
Functional Composites				**1 Month**	**3 Month**	**FYTD**	**1 Year**	**3 Year**	
OPEB Growth	**1,085**	**50.4%**	**50.0%**	**1.5**	**8.6**	**39.4**	**43.9**	**13.8**	
Custom OPEB MT Growth Pool				*1.5*	*8.6*	*39.3*	*43.7*	*13.6*	
OPEB Credit	**419**	**19.5%**	**20.0%**	**0.8**	**1.2**	**10.3**	**11.0**	**—**	
Custom OPEB MT Credit Pool				*0.9*	*1.3*	*11.4*	*12.5*	*—*	
OPEB Real Assets & Inflation Hedges	**439**	**20.4%**	**20.0%**	**1.4**	**9.6**	**28.1**	**30.3**	**—**	
Custom OPEB MT RA & IH Pool				*1.4*	*9.6*	*28.2*	*30.4*	*—*	
OPEB Risk Reduction & Mitigation	**208**	**9.7%**	**10.0%**	**0.3**	**-0.1**	**-0.8**	**-0.3**	**4.6**	
Custom OPEB MT RR & M Pool				*0.3*	*-0.1*	*-0.8*	*-0.3*	*4.4*	

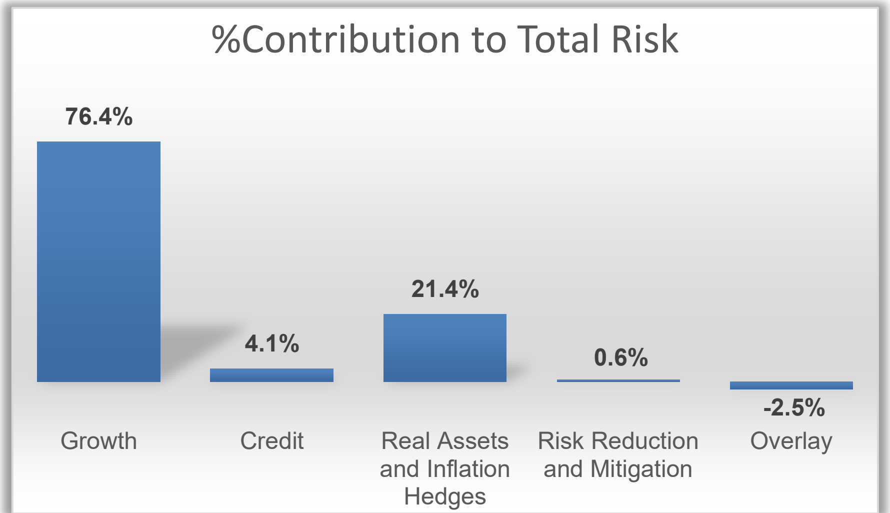
Historical Returns
(% net)

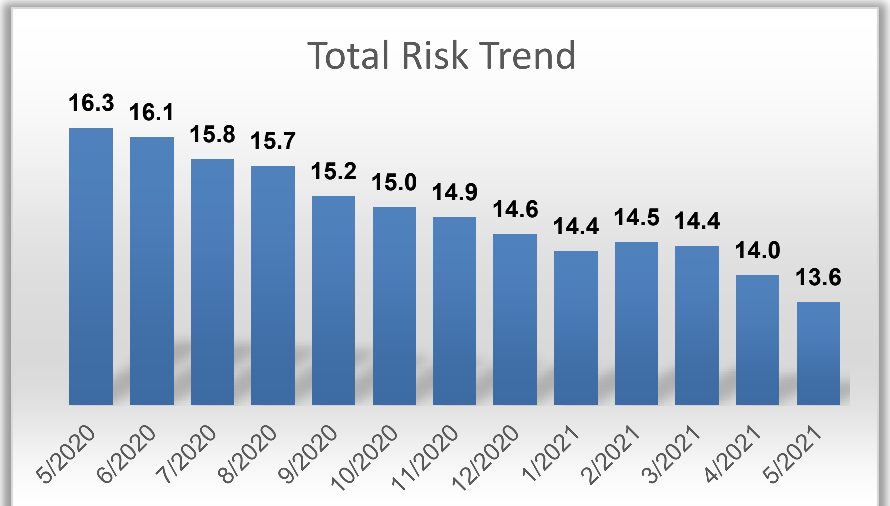


1. Final target weights effective as of 10/1/19
2. Functional composites were adopted on 4/1/19
3. Market value differences between the sub-trusts and functional composites are due to operational cash

Total Fund Forecast Risk*

as of May 2021





	%Weight	% Cont. to Total Risk	Standalone Total Risk	Standalone BMK Risk**
Total Fund			**13.6**	**14.1**
Growth	**50.9%**	**76.4%**	**20.7**	**20.4**
Global Equity	36.8%	52.8%	20.1	20.2
Private Equity	13.2%	22.3%	27.0	27.4
Opportunistic Real Estate	0.9%	1.3%	27.3	20.6
Credit	**10.8%**	**4.1%**	**5.9**	**4.9**
High Yield Bonds	3.1%	1.3%	7.0	5.9
Bank Loans	3.7%	1.0%	5.5	6.8
Illiquid Credit	2.8%	1.2%	7.7	3.6
Emerging Market Debt	1.3%	0.6%	9.8	9.0
Real Assets & Inflation Hedges	**16.9%**	**21.4%**	**19.2**	**29.7**
Core & VA Real Estate	6.5%	11.7%	33.4	20.6
Natural Resources & Commodities	4.6%	5.0%	17.7	97.8
Infrastructure	2.9%	4.3%	21.6	21.5
TIPS	2.8%	0.4%	4.8	4.8
Risk Reduction and Mitigation	**20.7%**	**0.6%**	**3.1**	**2.9**
Investment Grade Bonds	15.8%	0.3%	3.8	3.6
Diversified Hedge Funds	3.4%	0.3%	4.7	0.2
Cash	1.4%	0.0%	0.0	0.2
Overlay	**0.8%**	**-2.5%**	-	-

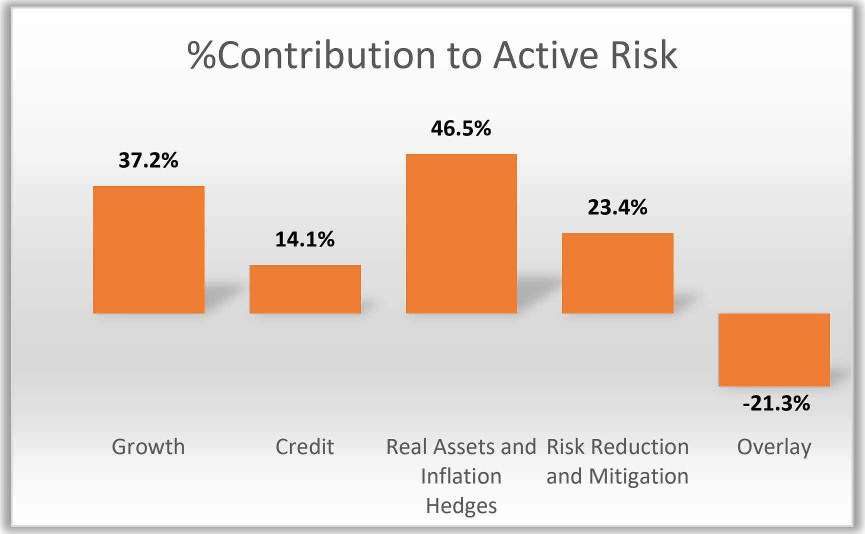
*Implementation of the MSCI Risk Platform is ongoing; reconciliation and refinement of the data is progressing and subject to change. Real estate and private equity data used is as of 12/31/2020

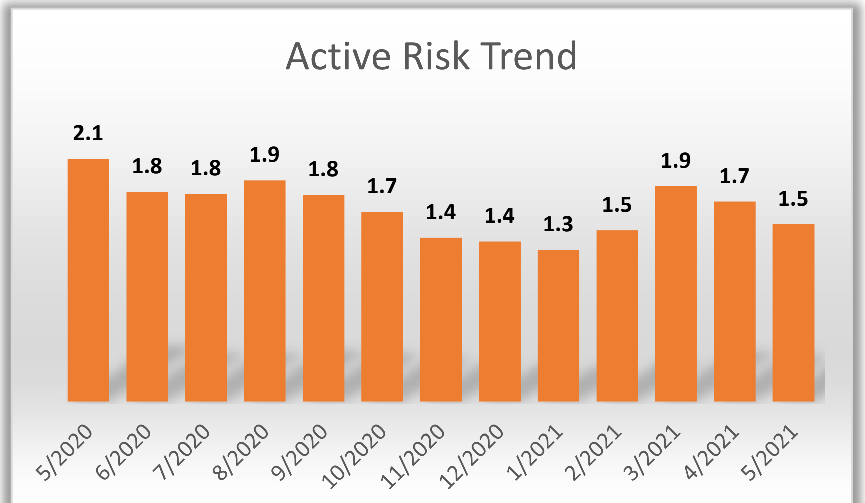
**BMK Risk stands for Benchmark Risk

SOURCE: MSCI BarraOne

Total Fund Forecast Active Risk*

as of May 2021





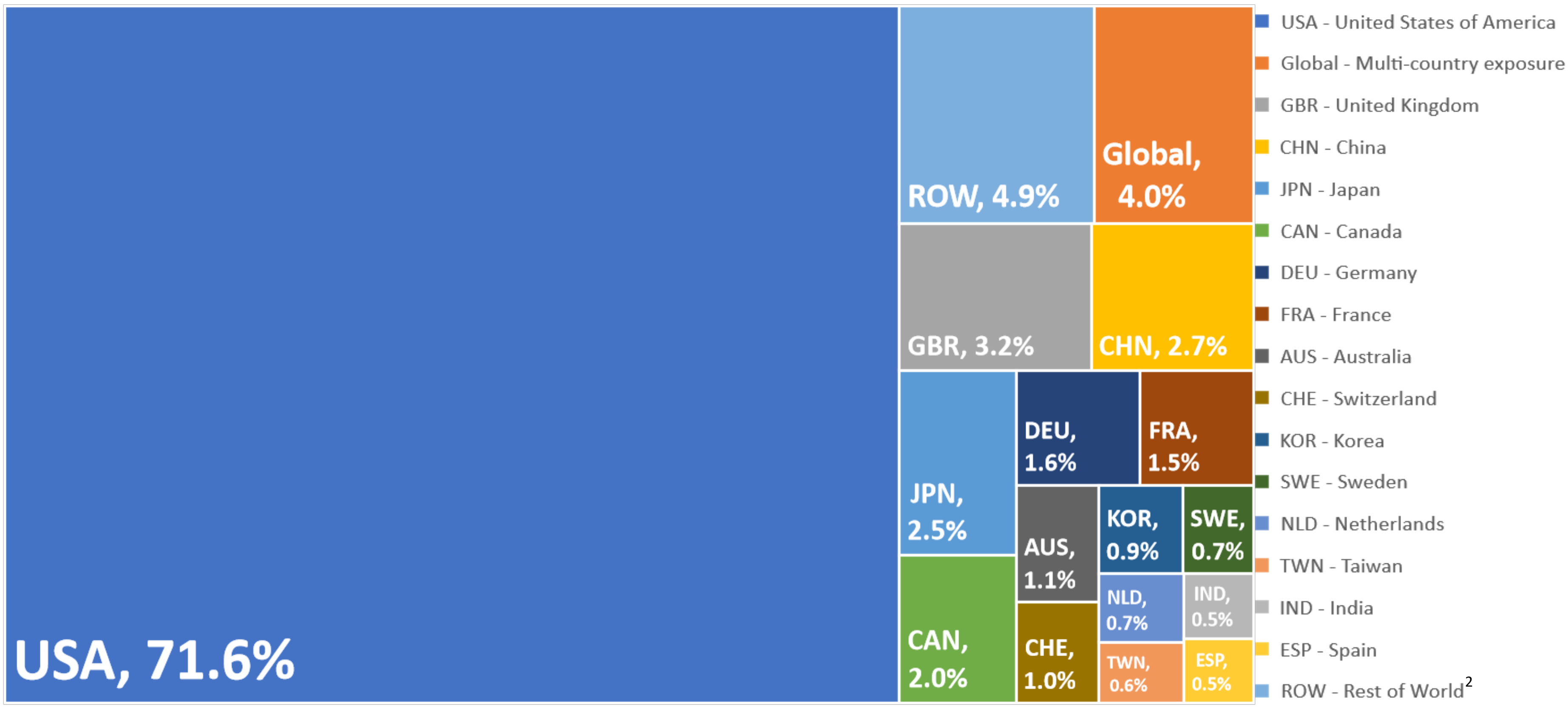
	%Weight	Active Weight%	Active Risk	Active Risk Allocation	Active Risk Selection
Total Fund			**1.54**	**0.33**	**1.21**
Growth	**50.9%**	**3.88%**	**0.57**	**0.25**	**0.32**
Global Equity	36.8%				
Private Equity	13.2%				
Opportunistic Real Estate	0.9%				
Credit	**10.8%**	**-1.20%**	**0.22**	**0.08**	**0.13**
High Yield Bonds	3.1%				
Bank Loans	3.7%				
Illiquid Credit	2.8%				
Emerging Market Debt	1.3%				
Real Assets & Inflation Hedges	**16.9%**	**-0.12%**	**0.72**	**0.00**	**0.72**
Core & VA Real Estate	6.5%				
Natural Resources & Commodities	4.6%				
Infrastructure	2.9%				
TIPS	2.8%				
Risk Reduction and Mitigation	**20.7%**	**-3.34%**	**0.36**	**0.32**	**0.04**
Investment Grade Bonds	15.8%				
Diversified Hedge Funds	3.4%				
Cash	1.4%				
Overlay	**0.8%**	**0.78%**	**-0.33**	**-0.33**	**0.00**

*Implementation of the MSCI Risk Platform is ongoing; reconciliation and refinement of the data is progressing and subject to change. Real estate and private equity data used is as of 12/31/2020

SOURCE: MSCI BarraOne

Geographic Exposures by AUM* - Total Fund

as of May 2021 ex-overlay



*AUM = assets under management

[1] *Implementation of the MSCI Risk Platform is ongoing; reconciliation and refinement of the data is progressing and subject to change. Real estate and private equity data used is as of 12/31/2020

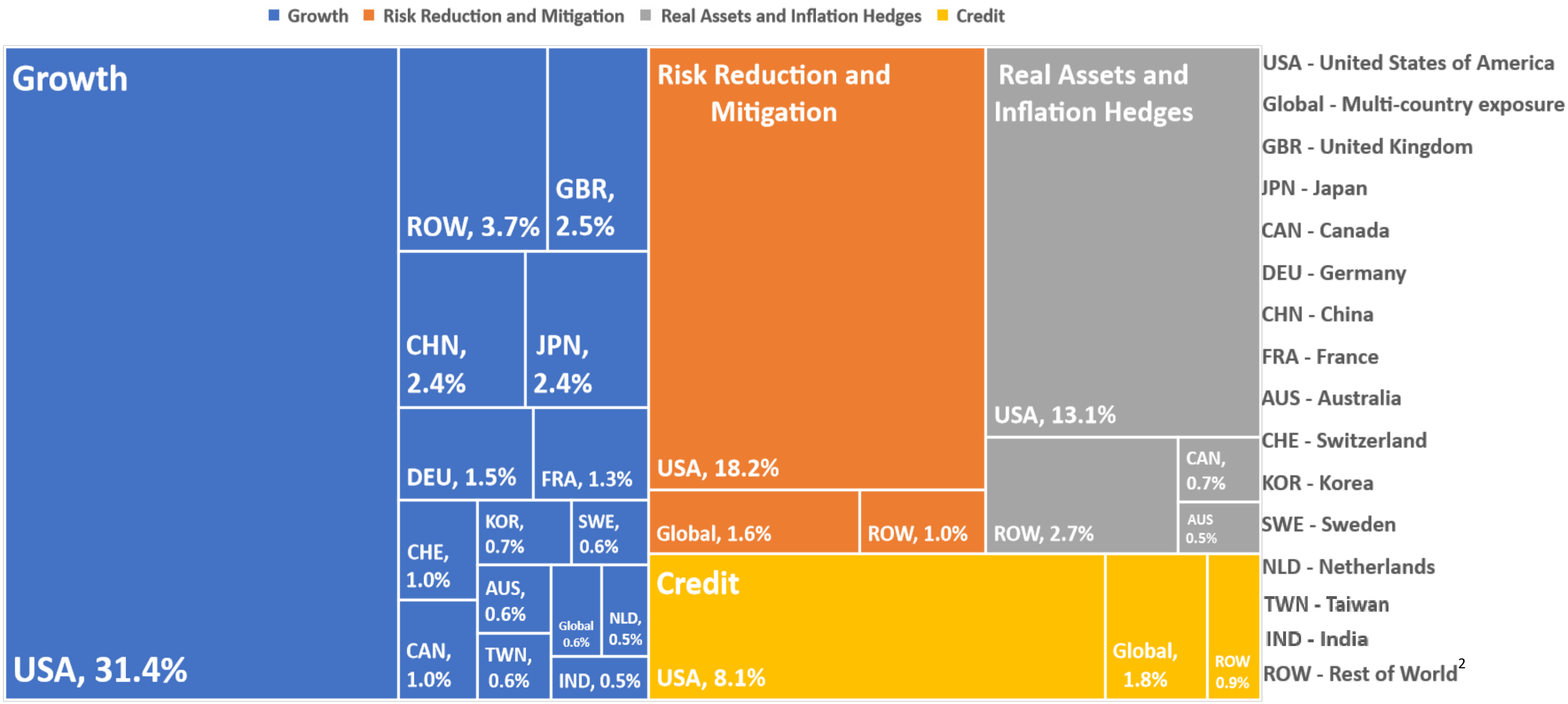
[2] "ROW - Rest of World" is sum of countries with weight below 0.5%

[3] Geographic exposure is based on the domicile country of a given security/asset

SOURCE: MSCI BarraOne

Geographic Exposures by AUM* - Asset Categories

as of May 2021 ex-overlay



*AUM = assets under management

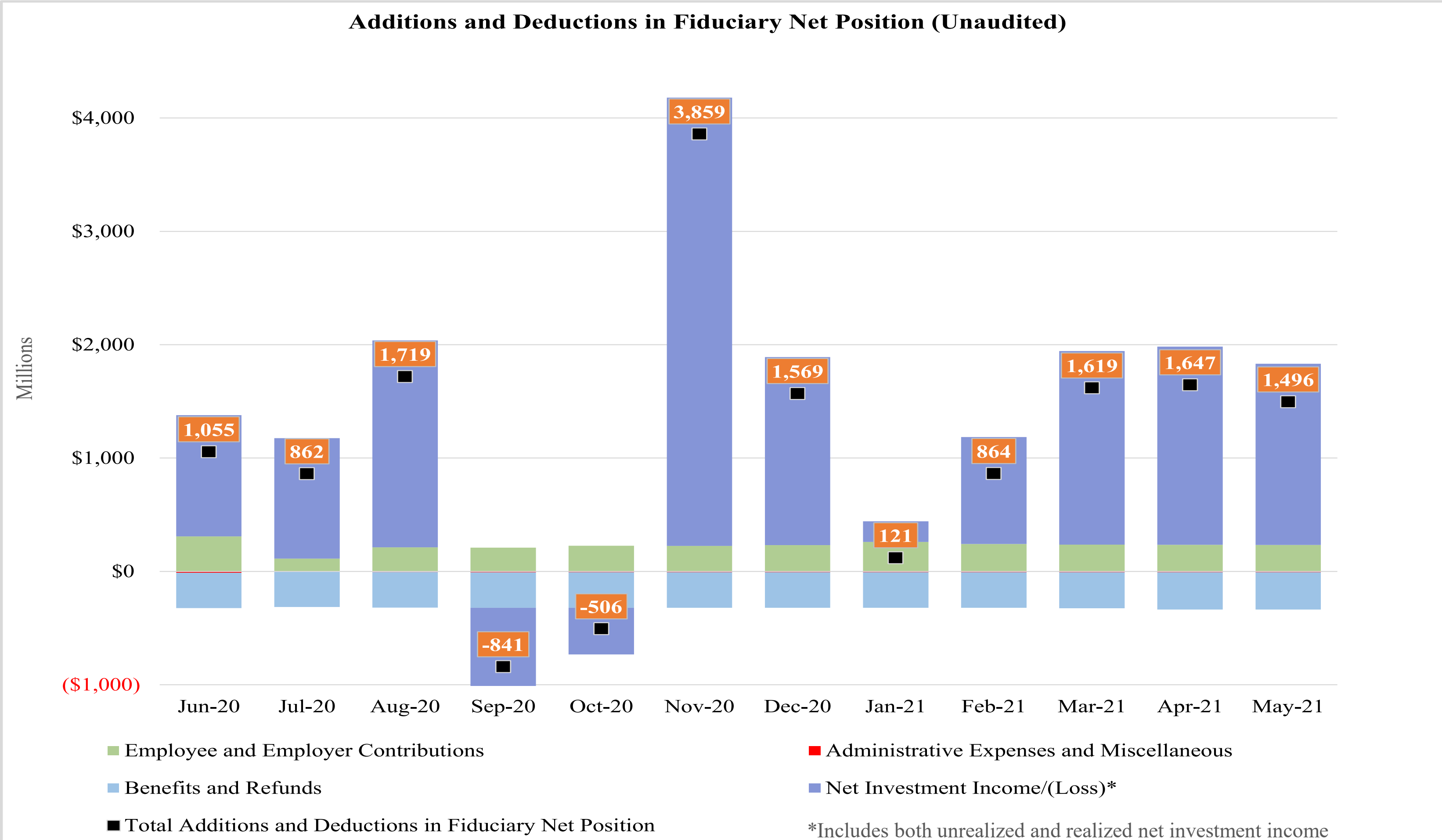
[1] *Implementation of the MSCI Risk Platform is ongoing; reconciliation and refinement of the data is progressing and subject to change. Real estate and private equity data used is as of 12/31/2020

[2] "ROW - Rest of World" is sum of countries with weight below 0.5%

[3] Geographic exposure is based on the domicile country of a given security/asset

SOURCE: MSCI BarraOne

Change In Fiduciary Net Position



Fiscal Year	Negative Months	Positive Months	Total Net Position Change $
FY-19	4	8	$1.9 billion
FY-20	5	7	-
FY-21	2	9	$12.4 billion

Portfolio Structural Updates

Portfolio Structural Updates

Portfolio Movements

Rebalancing Activity

$120 million Cash	→	Credit
$60 million Cash	→	Real Assets
$28 million Growth	→	Cash
$12 million Risk Mitigation	→	Cash

Hedges and Overlays

Program	May Return	May Gain/Loss	Inception* Gain/Loss
Currency Hedge**	-0.6%	$16.2 Million	$835.6 Million
Cash/Rebalance Overlay***	-0.2%	-$7.8 Million	-$64.0 Million

Current Search Activity

Status of Active Searches – Subject to Change

Name	RFP Issued	Due Diligence	BOI Review
Private Equity Advisor Services	●	●	Anticipated Summer 2021
Global Equity Emerging Manager Search	●		Anticipated Late 2021
Private Equity Emerging Manager Discretionary Separate Account Search	●		Anticipated Winter 2022

Quiet Period for Search Respondents

Private Equity Advisor Services

- ✓ Albourne America LLC
- ✓ StepStone Global LLC
- ✓ Wilshire Associates Inc

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

** LACERA's currency hedge program's 1-month return is calculated monthly whereas the monthly gain/loss amount for the same period is the net realized dollar amount at contract settlement over three monthly tranches
*** LACERA's overlay program's 1-month return includes interest earned on the cash that supports the futures contracts

Key Initiatives and Operational Updates

Notable Initiatives and Operational Updates

Key Initiative Updates

- Ongoing implementation and development of LACERA TIDE initiative
- New Strategic Asset Allocation implantation is ongoing
- Submitted SEC Comment Letter on Climate Risk Disclosures

Completed Actions

- The real estate administrator onboarding process has been completed
- The new performance system onboarding process has been completed
- The new risk system onboarding process has been completed

Operational Updates

- Completed the Annual Contract Compliance exercise for public markets
- Financial Analyst III search
  - Credit

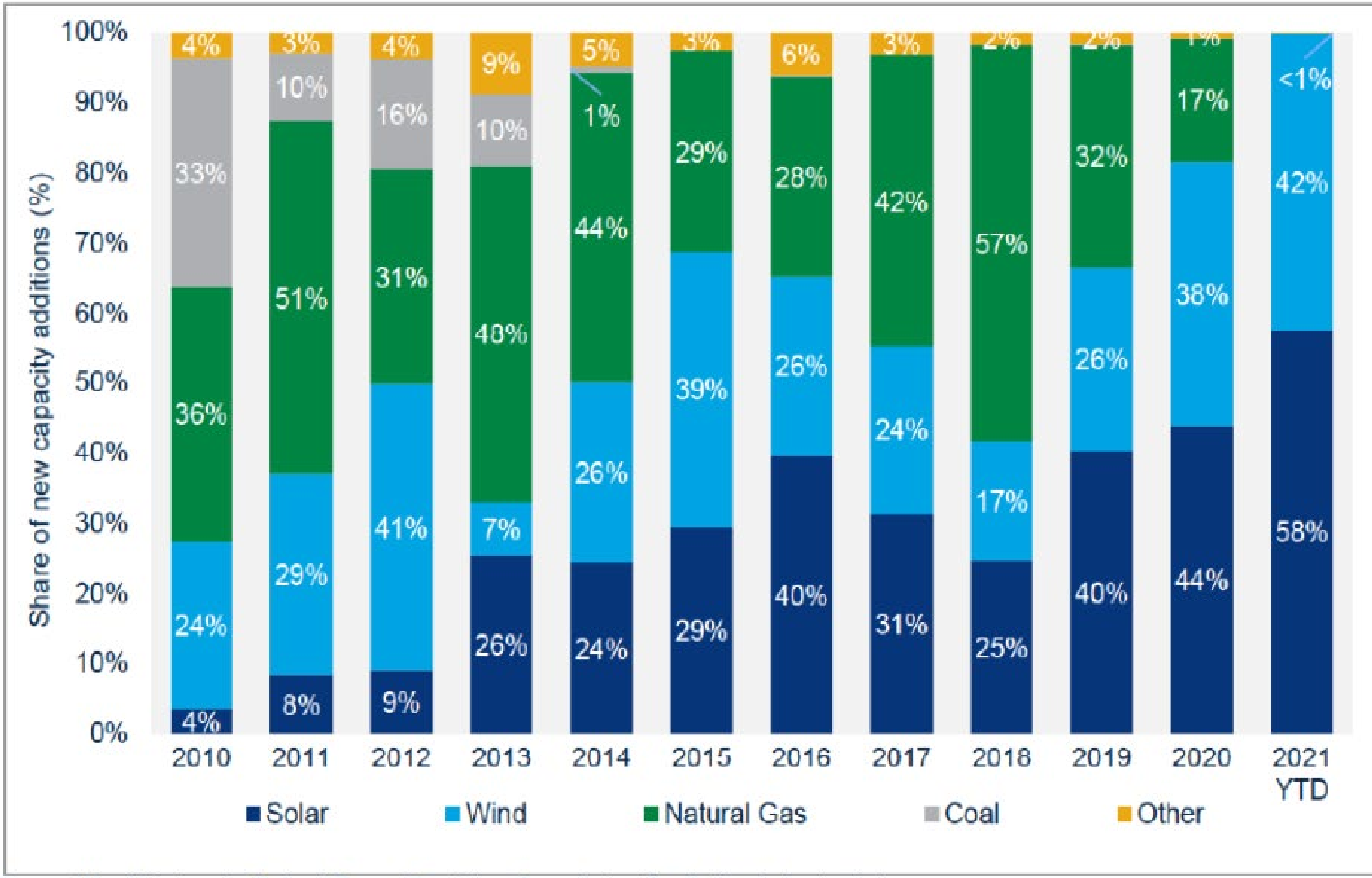
Manager/Consultant Updates

- BlackRock announced that Howard Levkowitz, a co-founder of Tennenbaum, acquired by BlackRock in 2018, will retire later this year
- State Street Global Advisors announced that Lynn Blake, CIO, Global Equity Beta Solutions (GEBS) will be retiring on September 30, 2021 and that John Tucker, COO Investments, will succeed Ms. Blake as CIO
- State Street Global Advisors announced a new Global Head of ESG and Sustainable Investing, Karen Wong, who started on June 14, 2021

Commentary

Staff Charts of the Month*

New U.S. Electricity-Generating Capacity Additions



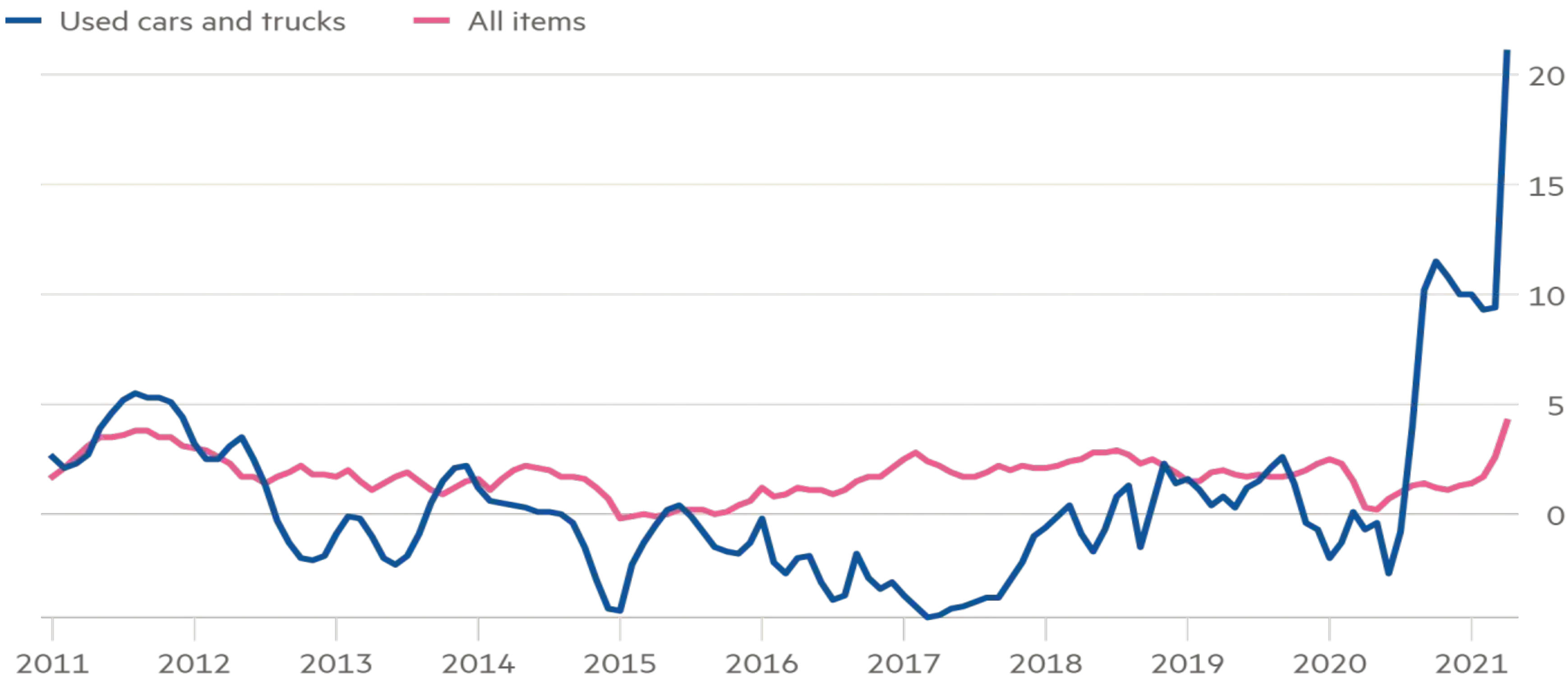
Source: Wood Mackenzie, Federal Energy Regulatory Commission (for all other technologies)

Staff Charts of the Month*

U.S. Car and Truck Prices – Inflationary Pressures

US car and truck prices are adding to inflationary pressures

Consumer price index (annual change, %)

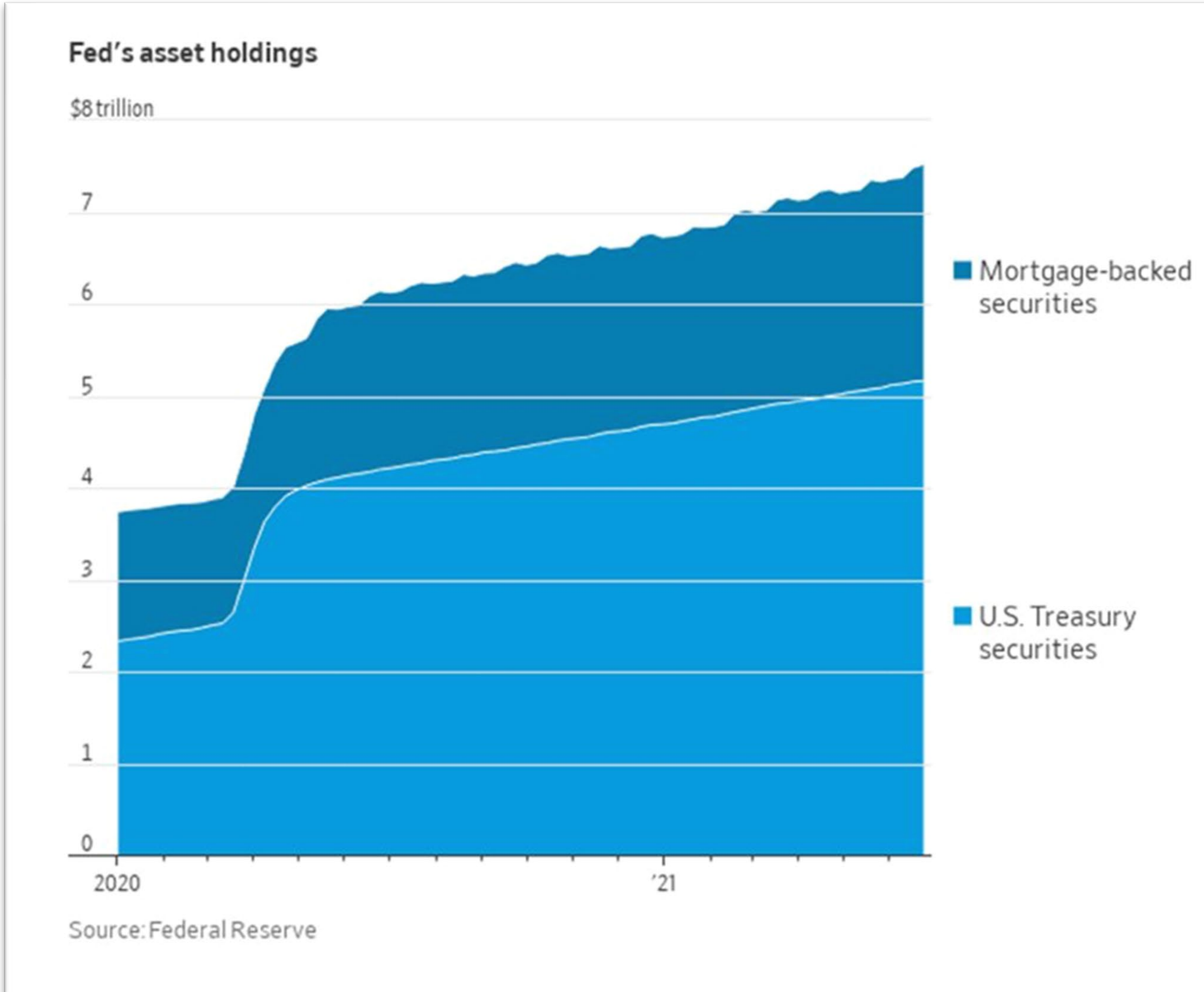


Seasonally adjusted
Source: US Bureau of Labor Statistics
© FT

Staff Charts of the Month*

U.S. - Federal Reserve Asset Holdings

Shows Fed's asset purchases pre- and post-pandemic



* Submitted by the Risk Reduction and Mitigation team

L//.CERA

June 24, 2021

TO: Trustees – Board of Investments

FROM: Real Assets Committee

James Rice, CFA JR
Principal Investment Officer

Daniel Joye DJ
Investment Officer

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **REAL ASSETS CO-INVESTMENT AND SECONDARIES RECOMMENDATION**

RECOMMENDATION

Approve the establishment of Co-Investment and Secondaries delegation of authority to the CIO for Real Assets following the parameters on slide 18 of the attached presentation.

BACKGROUND

At the June 9, 2021, Real Assets Committee (the "Committee") meeting, the establishment of Co-Investment and Secondaries delegation of authority to the CIO for Real Assets were presented (**Attachment)** and were advanced by the Committee. Slide 18 of the PowerPoint deck lists the parameters of the program under the delegation of authority to the CIO. The recommendation to the Committee had an annual capital deployment limit of $100 million. However, this amount was raised to $250 million by a committee motion which was approved and advanced. The slide with the parameters of the program on slide 18 has been revised to reflect a $250 million limit to the annual capital deployment t under this delegation of authority.

OPTIONS AVAILABLE TO THE BOARD

The Board may wish to approve, modify, or reject the recommendation.

DELIBERATIONS AND OPINIONS EXPRESSED BY THE COMMITTEE

The Committee unanimously approved the recommendation to advance the establishment of Co-Investment and Secondaries delegation of authority to the CIO for Real Assets following the parameters on slide 18.

A Committee member asked if ESG considerations on secondaries would be part of staff's evaluation. Staff responded that it would be and slide 14 in the **Attachment** was modified to reflect that.

A Committee member asked if these proposed parameters (before the motion was made to increase the annual capital deployment amount from $100 million to $250 million) are similar to the parameters in place for the private equity secondary and co-investment program. Staff responded that the guidelines for private equity are currently more expansive than the proposed paraments for real assets but that they were similar to the program for private equity in the first year the delegated authority was launched.

A motion was made to increase the annual capital deployment amount to $250 million from $100 million, with a Committee member expressing the expectation that staff would remain cautious even at the higher cap. Staff concurred that it would remain cautious and prudent at the higher limit.

RISK OF ACTION AND INACTION

If the Board approves the recommendation, LACERA will consider co-investment and secondaries transactions that could be completed under the parameters described in the **Attachment**. Any investments approved under this authority would require approval by the internal Real Asset Investments Group, approval by the CIO, review by the external consultant that appropriate diligence steps were followed (for Co-investments), and an external valuation review by one of LACERA's retained secondaries advisors (for secondaries).

Should the Board reject the recommendation, staff may consider other co-investment and secondaries transactions that could be completed within a time frame that would allow for approval by the Board of Investments at a future meeting but would be precluded from considering other opportunities that fit within the parameters that would require a more accelerated decision time frame.

CONCLUSION

The Committee unanimously approved the recommendation to advance the establishment of Co-Investment and Secondaries delegation of authority to the CIO for Real Assets following the parameters on slide 18 to the Board for approval. If the Board approves, LACERA will consider co-investment and secondaries transactions that could be completed under the parameters described in the **Attachment**.

Attachment

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JR:DJ:mm

ATTACHMENT

Real Assets
Proposed Co-Investment and Secondaries Implementation Process

Board of Investments

July 14, 2021

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Agenda

I. Background: Follow-up to the Real Asset Structure Review

II. Benefits & Other Considerations for Co-investments and Secondaries

III. Evaluation & Due Diligence Process

IV. Proposed Implementation Plan

I. Background: Follow-up to the Real Asset Structure Review

LACERA Real Assets Structural Plan Steps

Closed or Open Ended Funds	Generates future co-investment flow
Co-Investments and Secondaries	Larger internal staff oversees, brings in-house
Club/Syndicated Deals	With like-minded peers, ag, timber, oil and gas
Separately Managed Accounts	Use select managers for complementary investments
Direct Investments	Explore governance, compensation, legal needs

Adopted by Board November 2019

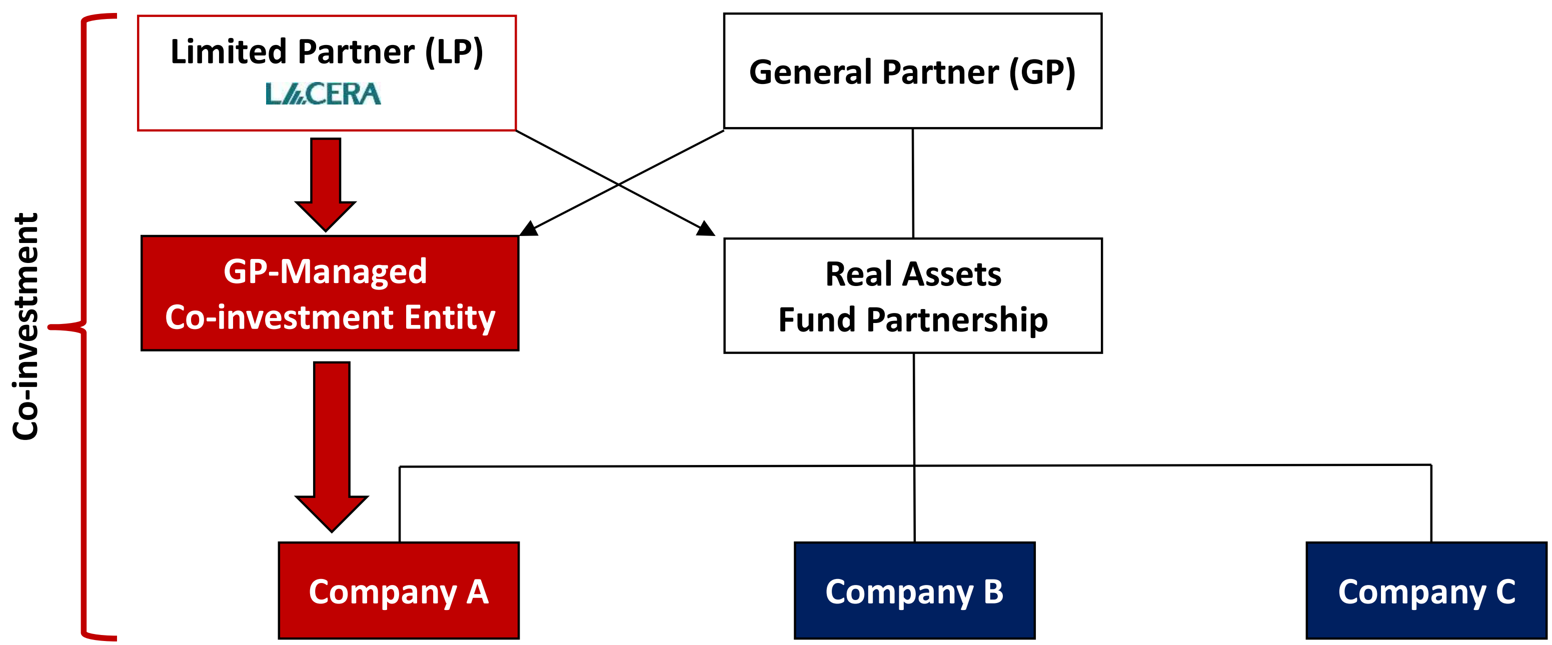
Board objective as referenced in the Structure Review:

Develop co-investments and secondaries to reduce fees and build an intentional and diversified portfolio.

Co-Investments Definition

Co-investments are typically minority investments made directly in portfolio companies by fund limited partners alongside a private fund partnership

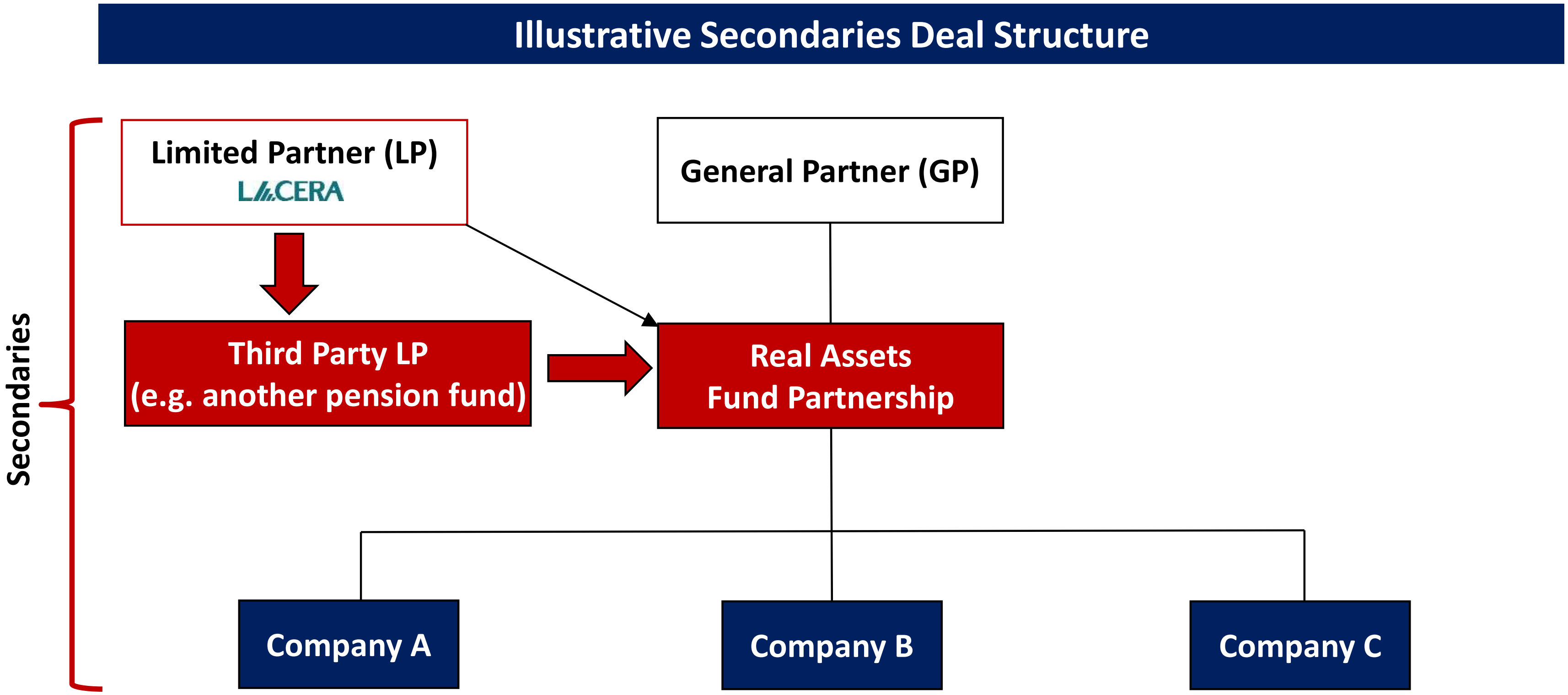
Illustrative Co-Investment Deal Structure



In this example, LACERA has exposure to "Company A" through its commitment to the private real assets fund AND further exposure through a co-investment

Secondaries Definition

Secondaries are the sale and purchase of a limited partners interest and obligations in a private fund partnership



In this example, LACERA buys another LP's stake in a Real Asset fund and/or replaces the LP for future undrawn commitments

(Note: A Secondaries purchase can also include the purchase of a co-investment interest.)

II. Benefits & Other Considerations for Co-investments and Secondaries

Co-investment Benefits for Real Assets

Merits	
Portfolio Construction & Diversification	• Balance portfolio to underweight sectors • Increase capital deployment speed with increased asset allocation for new real assets category • Target specific asset types less readily available in public markets or more difficult to implement in private markets, e.g., high cash-yielding/contracted core assets (especially in infrastructure)
Reducing Fee drag	• Advantageous economics, often at no fee/no carry with existing GP relationship
Moving from allocator to investor	• Enhanced execution capabilities and culture leads to better deal flow • Frequent opportunities for co-invest in Real Assets space • Access to attractive individual assets of managers with whom LACERA is not currently invested with • Ability to gain a deeper understanding of a manager's investment process

Currently Private Equity has an active delegated co-investment program. Real Estate's is inactive

Secondaries Benefits for Real Assets

Merits	
Enhanced Portfolio Construction	• Investing in an existing portfolio or company interest(s) with lesser or minimal blind pool risk • Ability to reduce the portfolio-level "j-curve" effect on LACERA's newer private portfolio with the addition of more mature funds later in investment period • Ability to strategically manage a portfolio's diversification and targeted sectors more discretely • Ability to diversify across vintage year investments for a newer program • Access to attractive funds of managers with whom LACERA is not currently invested
Buying at a discount	• Possibility of purchasing assets at a discount to current carrying value and a further discount to fair market value

Currently Private Equity has an active delegated secondaries program

Co-Investment & Secondaries Considerations for Real Assets

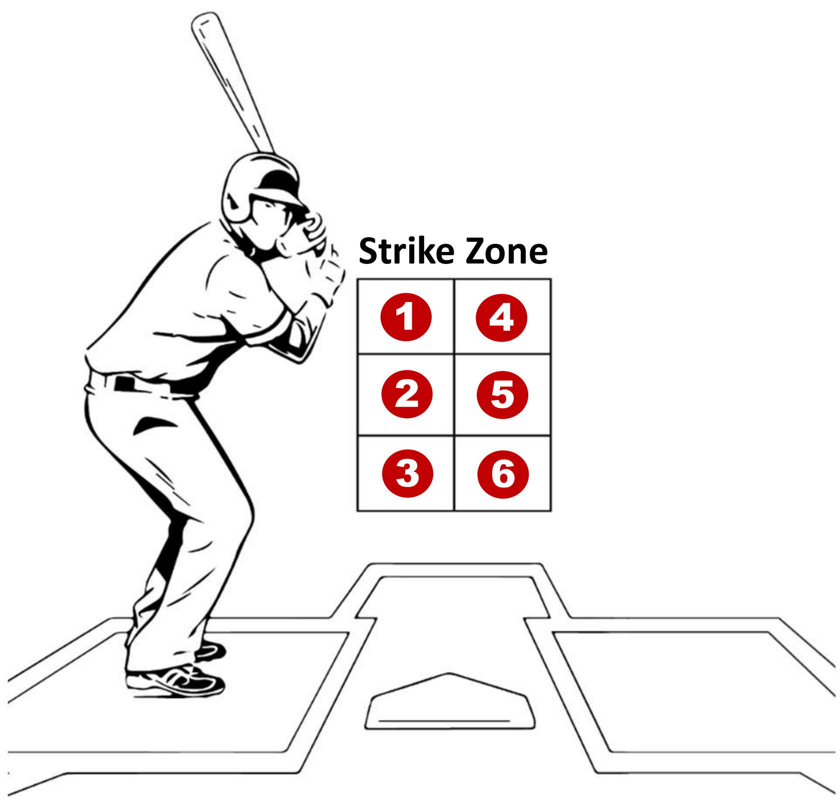
Considerations	
Compressed Decision Timeframe	• Deal timeline is often incompatible with the current structure that requires board approval • Proposed Delegation of authority to CIO for approval within specific parameters
Internal Resources	• Work process needed to address opportunities as they arise in marketplace → Growth in Real Assets (ex-Real Estate) staff from one to three plus PIO increases ability to manage co-invest/secondaries workflow
Deal Concentration	• Co-Investments will result in more concentrated positions in certain deals • → Proposed procedures will limit LACERA exposure to no more than 1/3 of asset position • →Initial proposed program limited to $50 million per co-investment transaction
Due Diligence can be costly	• Significant time and resource commitment to value and negotiate deal terms, e.g., engagement of outside advisors • Seller may not agree on price (mainly on secondaries)

III. Evaluation & Due Diligence Process

Co-Investment Evaluation Criteria

Proposed co-investment due diligence parameters designed to mitigate risks and ensure consistent decision making; only investments that fit LACERA's "Strike Zone" will be considered

1. Strong LACERA portfolio fit
2. Fit with general partner's investment strengths
3. Reasonable valuation and deal structure



4. Acceptable downside risk or protections
5. Positive macro tailwinds and/or manageable headwinds
6. Achievable company value creation strategy

Summary of Due Diligence Process for Co-investment

- Fit with LACERA' s portfolio
- Assessment of fit with the general partner’s investment strengths
- Reasonableness of valuation and proposed deal structure and terms
- Analysis of the general market environment
- Analysis of the investment merits and concerns
- Compliance with all regulatory and legal requirements
- Reference checks on the company management and the general partner investment principals
- Analysis of ESG and DEI considerations
- Sign-off by LACERA’s Internal Real Asset Investment Group
- Sign-off by CIO
- Third-party documentation that confirms LACERA’s due diligence process was followed in a satisfactory manner (currently being discussed with Albourne)

Summary of Due Diligence Process for Secondaries

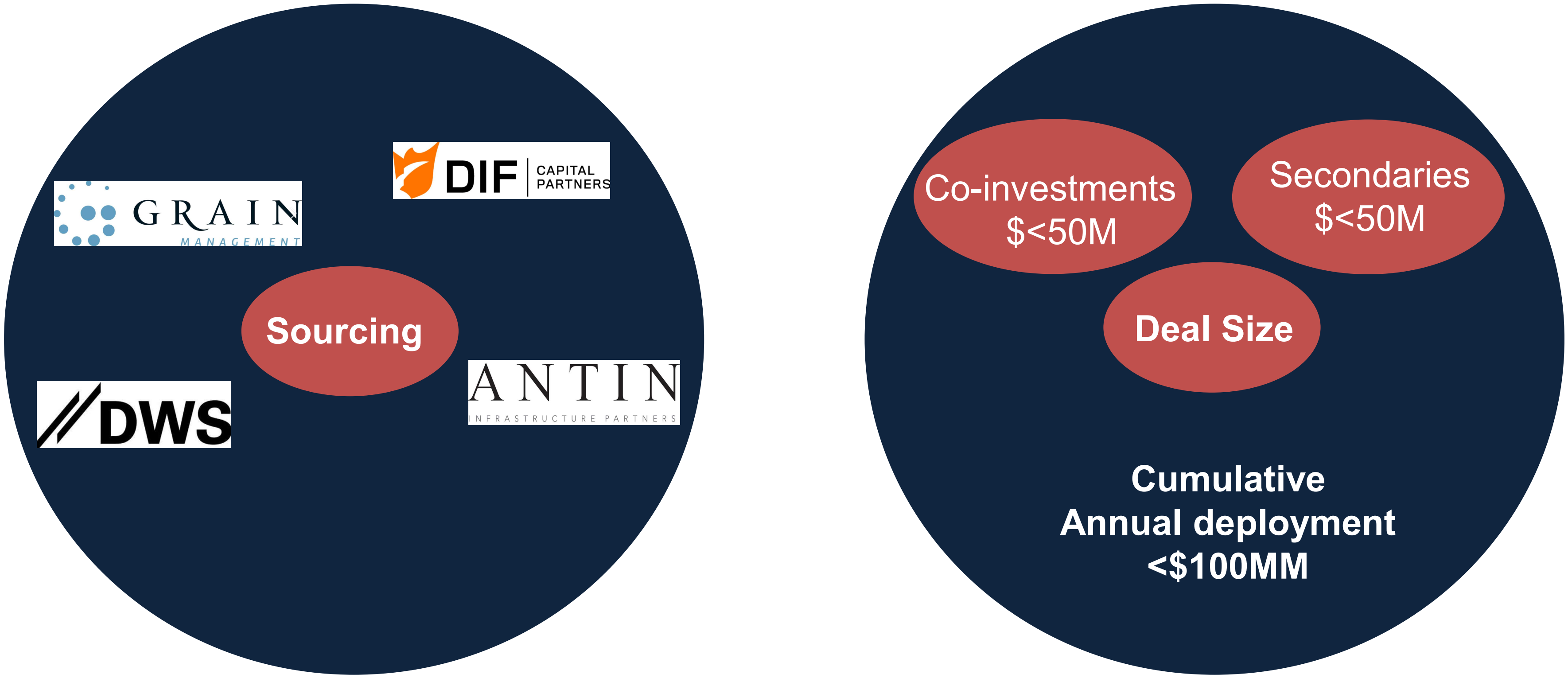
- Fit with LACERA' s portfolio
- Assessment of fit with the general partner's investment strengths
- Analysis of fund structure and terms
- Analysis of the general market environment
- Analysis of the investment merits and concerns
- Analysis of ESG and DEI considerations
- Full valuation analysis conducted by staff and Secondary Advisor to assess fair value of partnership
- Negotiate parameters for legal documents and engagement of outside council if necessary
- Sign-off by LACERA's Internal Real Asset Investment Group
- Sign-off by CIO

III. Proposed Implementation Plan for Delegated Authority

Parameters: Sectors and Geographies

Proposed guidelines for target co-investments & secondaries	Merits
• Clearly Defined Infrastructure Categories: Utilities, Power & Renewables, Telecom, Transportation and Social • Natural Resources: Mining, Agriculture & Timber	• High quality assets • Fit with private asset objectives
• Target economies: USA, Canada, Eurozone, UK, Australia and New Zealand	• Strong legal framework for asset owners

Parameters: Deal Size and Sourcing



Proposed guidelines for co-investments & secondaries deals	
Sourcing	• Current Board-approved managers
Deal Size	• Co-investments <$50M • Secondaries <$50M
Capital Deployment	• $100 million annual maximum cumulatively across co-investments and secondaries

Advance to Board: Proposed Delegated Co-Investment & Secondaries Authority

	Co-Investment Parameters	Secondaries Parameters
Sourcing	• Co-investments by Board-approved real asset GPs currently managing capital on behalf of LACERA	• A fund managed by a GP in which LACERA is an existing real assets investor
Investment Size	Up to $50 million	
Geography	USA, Canada, Eurozone , UK, Australia, and NZ	Global with Majority of Assets in developed markets
Deal Types	• Infrastructure • Natural Resources	• Infrastructure and Natural Resources • Fund must be at least 70% deployed, committed or reserved • Fund must have been managed by current team for at least 3 years
Deal Exposure	LACERA's ownership of co-investment asset or Fund not to exceed 1/3 of total under GP (combining co-invest & fund exposure)	
Annual Capital Deployment	$250 million maximum cumulatively across co-investments and secondaries[1]	
Advisory Confirmation	Third party (Albourne) confirms LACERA's due diligence was satisfactorily followed	Third party advisor confirms valuation
Monitoring Policy	• Prompt notification to Board in writing of CIO-approved co-investments or secondaries • Updates to BOI annually on capital deployed via co-investments & secondaries	

[1] This amount was initially $100 million in the recommendation proposed to the Real Assets Committee. The Committee made a motion and approved an increase in this amount to $250 million.

Advance to Board: Proposed Next Steps & Program Evolution

Gather Committee feedback and discuss further actions

	Proposed Initial Program	Next 1-3 years	Beyond
Sourcing	• Current managers	• Current Managers • Approved by any LACERA advisor	TBD
Geography	USA, Canada, Western Europe, UK, Australia, and New Zealand	OECD[1]	Global
Co-Investment size	$<50M	$<100M	TBD
Secondary Size	$<50M	$<100M	TBD
Deal types	Infrastructure Natural Resources	Infrastructure Natural Resources	Infrastructure Natural Resources
Annual Capital deployment	$250M[2]	$250M	TBD

[1] 38 Member countries of Organization for Economic Co-operation and Development representing 80% of world trade including geography of "Proposed Initial Program" plus Chile, Colombia, Costa Rica, additional Middle and Eastern European Eurozone countries, Japan, Korea, Israel, and Mexico.

[2] This amount was initially $100 million in the recommendation proposed to the Real Assets Committee. The Committee made a motion and approved an increase in this amount to $250 million.

Advance to Board

Real Assets	Establish Co-Investment and Secondaries Delegation of Authority to CIO for Real Assets following the parameters on slide 18

June 25, 2021

TO: Trustees – Board of Investments

FROM: Scott Zdrazil
Senior Investment Officer

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **PRINCIPLES FOR RESPONSIBLE INVESTMENT NOMINATIONS**

RECOMMENDATION

That the Board of Investments deliberate whether to nominate a candidate to the Board of the United Nations-affiliated Principles for Responsible Investment.

DISCUSSION

The Principles for Responsible Investment (PRI), to which LACERA is a signatory, has opened a nomination window for its 2021 annual board elections for four asset owner positions with a deadline of August 27, 2021.

Per LACERA's *Corporate Governance and Stewardship Principles*, the Board of Investments approves any formal nomination from LACERA for consideration to a governing board of a corporate governance association to which LACERA is affiliated.

The PRI Board is comprised of eleven individuals, including seven asset owner representatives who are elected to staggered three-year terms. Each board member is eligible to serve up to three consecutive, three-year terms. The four incumbent board members whose terms end in 2021 are each eligible for re-election. To date, two incumbents (Sharon Hendricks of CalSTRS and Laetitia Tankwe of Ircantec) have reportedly indicated their intent to run again.

The full list of current Board members and their terms are below:

Category	Director	Signatory	Signatory HQ country	Term
Chair	Martin Skancke	Independent	N/A	2021-2023
Directors elected by asset owner signatories	Mid-term election: vacant position for **one asset owner** representative			2021-2023
	Angela Emslie*	HESTA	Australia	2019-2021
	Eva Halvarsson	Second Swedish National Pension Fund (AP2)	Sweden	2020-2022
	Sharon Hendricks*	CalSTRS	US	2019-2021
	Renosi Mokate	Government Employees Pension Fund (GEPF)	South Africa	2021-2023
	Laetitia Tankwe*	Ircantec	France	2019-2021
	Xander den Uyl*	ABP	Netherlands	2019-2021
Directors elected by investment manager signatories	Wendy Cromwell*	Wellington Management	US	2019-2021
	Tycho Sneyers	LGT Capital Partners	UK	2021-2023
Director elected by service provider signatories	Michael Jantzi	Sustainalytics	Netherlands	2020-2022

The PRI is encouraging candidates:

- With governance skills and senior leadership experience;
- With demonstrated leadership in responsible investment; and
- From asset owner signatories (with their headquarters) in North America and Australasia.

LACERA became a PRI signatory in 2008, shortly after its 2006 founding. LACERA has made steady progress in its efforts to integrate the PRI's six principles for responsible investment, improving its annual PRI assessment to an A+ score for overall ESG strategy and governance. In recent years, LACERA has become active in a number of asset class and regional working groups to share and integrate leading ESG integration practices, including the Private Equity Advisory Committee and the Western North America Regional Advisory Committee. More recently, LACERA's Chief Investment Officer was appointed to PRI's Asset Owner Technical Advisory Committee, as was reported to the Board of Investments.

In the event that Trustees opt to not put forward a nominee in the elections this year, LACERA's steady progress to integrate ESG across the total fund and continued participation in PRI working groups are anticipated to further strengthen LACERA's prospect for putting forward a formidable candidate at a future date.

More information about PRI's governance and the nomination process is available online at: https://www.unpri.org/pri/governance/2021-pri-board-annual-elections.

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

LACERA

June 30, 2021

TO: Each Trustee,
Board of Investments

FROM: Audit Committee
Joseph Kelly, Chair
Shawn R. Kehoe, Vice-Chair
Vivian H. Gray, Secretary
Alan J. Bernstein
Keith Knox
Ronald A. Okum
Gina V. Sanchez

FOR: July 7, 2021 Board of Retirement Meeting
July 14, 2021 Board of Investments Meeting

SUBJECT: **Approval of the Revised Audit Committee Charter**

RECOMMENDATION

That the Board of Retirement and Board of Investments approve and adopt the revised Audit Committee Charter.

BACKGROUND

The Institute of Internal Auditors (IIA) recommends that an audit committee formally define its purpose, authority, and responsibilities in a charter. In addition, the IIA recommends periodic reviews of the charter to ensure the charter is aligned with industry best practices and organizational changes. LACERA's Audit Committee Charter (Charter) was established in 2004, and has been updated throughout the years, most recently in December 2020.

Internal Audit and the Audit Committee Chair proposed revisions to the Charter at the April 23, 2021 Audit Committee. Internal Audit proposed minor edits to the charter while the Chair proposed a more significant revision. The Chair's proposed revision was to:

Delete from section VII. (Responsibilities) A.1. **Internal Audit Activity**

> *Recommend to the Boards a budget to achieve the Plan plus a contingent budget for additional work related to audit findings or other unplanned work.*

Add Section VII. (Responsibilities) F. **Audit Committee and Internal Audit Budget**

> *LACERA will provide appropriate funding, as determined by the Audit Committee for compensation to the Financial Auditor, to any Professional Service Provider that the*

Audit Committee chooses to engage, and for payment of ordinary administrative expenses of the Audit Committee that are necessary or appropriate in carrying out its duties.

During the April 23, 2021 Audit Committee meeting, Committee members discussed the merits of having a dedicated budget contingency fund for the Committee versus the ability to obtain all necessary funding through the proposed new language. The Committee concluded unanimously that the new language provided the Audit Committee with the necessary funding and they agreed to striking the language that provided for the contingency. Furthermore, the revised language is consistent with the rulemaking promulgations from the Securities and Exchange Commission (SEC).

Attached are the materials presented to the Audit Committee regarding the proposed Charter revisions, including the red-lined and clean versions of the proposed Charter, for the Board's review.

IT IS THEREFORE RECOMMENDED THAT THE BOARD approve and adopt the revised Audit Committee Charter.

RPB:cl

Attachment:
Audit Committee Materials Regarding Audit Committee Charter Revisions

ATTACHMENTS

L//CERA

April 27, 2021

TO: Each Trustee,
Board of Retirement
Board of Investments

FROM: Audit Committee
Joseph Kelly, Chair
Shawn R. Kehoe, Vice Chair
Vivian H. Gray, Secretary
Alan J. Bernstein
Keith Knox
Ronald A. Okum
Gina V. Sanchez

FOR: May 5, 2021 Board of Retirement Meeting
May 19, 2021 Board of Investments Meeting

SUBJECT: Approval of the Revised Audit Committee Charter

RECOMMENDATION

That the Board of Retirement and Board of Investments approve and adopt the revised Audit Committee Charter.

BACKGROUND

The Institute of Internal Auditors (IIA) recommends that an audit committee formally define its purpose, authority, and responsibilities in a charter. In addition, the IIA recommends periodic reviews of the charter to ensure the charter is aligned with industry best practices and organizational changes. LACERA's Audit Committee Charter (Charter) was established in 2004, and has been updated throughout the years, most recently in December 2020.

At the February 19, 2021 Audit Committee meeting, staff recommended the Committee:

A. Review and approve the proposed Internal Audit FY 2022 Budget Request to be presented to the Boards for approval.
B. Provide direction to staff on the amount of contingency funding to be requested to fund the Audit Reserve Fund.

The Committee unanimously approved the proposed Internal Audit FY 2022 Budget Request to be presented to the Boards for approval. After discussion, the Committee voted to recommend to the Boards to fund the contingency budget in the amount of $250,000 but asked staff to bring the Charter to the April meeting for additional consideration.

Internal Audit and the Audit Committee Chair proposed revisions to the Charter at the April 23, 2021 Audit Committee. Internal Audit proposed minor edits to the charter while the Chair proposed a more significant revision. The Chair's proposed revision was to:

Delete from section VII. (Responsibilities) A.1. **Internal Audit Activity**

> *Recommend to the Boards a budget to achieve the Plan plus a contingent budget for additional work related to audit findings or other unplanned work.*

Add Section VII. (Responsibilities) F. **Audit Committee and Internal Audit Budget**

> *LACERA will provide appropriate funding, as determined by the Audit Committee for compensation and Internal Audit Budget for compensation to the Financial Service Provider that the Audit Committee chooses to engage, and for payment of ordinary administrative expenses of the Audit Committee that are necessary or appropriate in carrying out its duties.*

During the April 23, 2021 Audit Committee meeting, Committee members discussed the merits of having a dedicated budget contingency fund for the Committee versus the ability to obtain all necessary funding through the proposed new language. The Committee concluded unanimously that the new language provided the Audit Committee with the necessary funding and they agreed to striking the language that provided for the contingency.

Attached are the materials presented to the Audit Committee regarding the proposed Charter revisions, including the red-lined and clean versions of the proposed Charter, for the Board's review.

IT IS THEREFORE RECOMMENDED THAT THE BOARDS approve and adopt the revised Audit Committee Charter.

RPB:cl

Attachment:
Audit Committee materials regarding Audit Committee Charter revisions

ATTACHMENT

LACERA

April 15, 2021

TO: 2021 Audit Committee
Joseph Kelly, Chair
Shawn R. Kehoe, Vice Chair
Vivian H. Gray, Secretary
Alan J. Bernstein
Keith Knox
Ronald A. Okum
Gina V. Sanchez

Audit Committee Consultant
Robert H. Griffin

FROM: Richard P. Bendall RPB
Chief Audit Executive

Christina Logan CL
Principal Internal Auditor

FOR**:** April 23, 2021 Audit Committee Meeting

SUBJECT: Revisions to the Audit Committee Charter

RECOMMENDATION

a) Provide direction to staff on the proposed revisions to the Audit Committee Charter,
b) Upon approval, recommend to the Board of Retirement and Board of Investments to adopt the revised Audit Committee Charter.

BACKGROUND

The Institute of Internal Auditors (IIA) recommends that an audit committee formally define its purpose, authority, and responsibilities in a charter. In addition, the IIA recommends periodic reviews of the charter to ensure the charter is aligned with industry best practices and organizational changes.

LACERA's Audit Committee Charter (Charter) was established in 2004, and has been updated throughout the years, most recently in December 2020 (Attachment B). The IIA's current model charter is provided for your reference (Attachment C).

At the February Audit Committee meeting, it was requested that we bring the Charter to this meeting for additional discussion. We have attached a red-line version (Attachment D) and a clean version (Attachment E).

PROPOSED REVISIONS

The Audit Committee Chair is proposing the revisions below to the Charter. The Chair has provided a memo detailing the reasoning for his proposal (Attachment A).

VII. Responsibilities A. Internal Audit Activity – replacing the language with a new section under **VII. Responsibilities G. Budget.** The wording for the new section is derived from Deloitte's Sample Audit Committee Charter but tailored for LACERA.

PROPOSED EDITS

Internal Audit and the Audit Committee Chair are proposing the following minor edits to the Charter:

- **IV. Authority** - Remove the third paragraph since two of the three points were already under **VII. Responsibilities B. Professional Service Provider Activity.**
- **V. Audit Committee and Consultant** - Corrected the job title for the Los Angeles County Treasurer to be consistent with CERL and corrected a grammar error.
- **VI. Audit Committee Meetings** – Added to the fourth paragraph that materials are published to LACERA's website and removed from the sixth paragraph unnecessary language.
- **VII. Responsibilities B. Professional Service Providers** – Corrected "External Financial Auditor" to "Financial Auditor" to be consistent throughout the Charter and added the third point from **IV. Authority**.

RECOMMENDATION

We recommend the Audit Committee Provide direction to staff on the proposed revisions to the Audit Committee Charter, and upon approval, recommend to the Board of Retirement and Board of Investments to adopt the revised Audit Committee Charter.

Attachments

RPB:cl

ATTACHMENT A

April 16, 2021

TO: Audit Committee

FROM: Joseph Kelly, Chair JK

SUBJECT: Audit Committee Funding

This memorandum responds to a discussion at the February 19, 2021 Audit Committee meeting regarding Item V. B. a recommendation that the Audit Committee approve the Internal Audit Proposed Fiscal Year (FY) 2021-2022 Budget and a contingent budget for additional work related to audit findings or other unplanned work. Section VII. A. 1.C. of the Audit Committee Charter requires the Committee to recommend to the Boards a budget to achieve the audit plan, plus a contingent budget.

In the meeting, we discussed replacing the contingent budget language with a statement that LACERA would commit to provide the Committee the funding necessary for the Committee to conduct its mission. The reasons for this included the availability of unspent operating funds in Internal Audit's operating budget as a source to fund unplanned audits, the limitations in the use of the contingent budget to only one area of Committee responsibility (i.e., audit), and the potential that any contingent budget the Committee approved may be insufficient to fund the costs of unplanned audits. Discussion followed regarding the mechanisms through which LACERA would be able to incorporate such a commitment into its budgetary practices. In the end, the Committee approved a contingent budget in the amount of $250,000.

Discussion of an agency commitment to provide appropriate funding.

In presenting charter revisions for the Committee's consideration in calendar year 2020, staff had relied primarily on a sample charter promulgated by the Institute of Internal Auditors - Global (IIA) and a review of peer pension fund charters. The IIA sample charter was designed to illustrate common practices across multiple jurisdictions, including international jurisdictions, and, as such, the IIA cautioned that the generic nature of this document required customization. Like the charter the Audit Committee approved in December 2020, the IIA sample charter grants to the Audit Committee the authority to approve the appointment, compensation, and work of the Financial Auditor hired to audit financial statements and approve the appointment, compensation, and work of other Professional Service Providers to perform non-financial statement audits, reviews, or investigations. The IIA sample charter is silent on the budgetary impact to the organization of the granting of this authority to the Audit Committee. Yet, the charter the Audit Committee approved in December 2020, introduced the concept of a contingent budget and capped that contingent budget at $500,000.

Deloitte also publishes a *Sample Audit Committee Charter*[1] based on its observations of selected companies and the requirements of the Securities and Exchange Commission (SEC), the New York Stock Exchange (NYSE), and the National Association of Securities Dealers and Nasdaq. The *Sample Audit Committee Charter* delegates to the Audit Committee the same responsibilities regarding the appointment and compensation of the financial auditor and other professional service providers as does the IIA sample charter, but Deloitte addresses the budgetary impact of this delegation as follows: ***The issuer [company] will provide appropriate funding, as determined by the audit committee, for compensation to the independent auditor, to any advisers that the audit committee chooses to engage, and for payment of ordinary administrative expenses of the audit committee that are necessary or appropriate in carrying out its duties.*** [Rule 10A-3(b)(5) of the Exchange Act, NYSE Corporate Governance Rule 303A.06, and NASDAQ Corporate Governance Rule 5605(c)(3)].

This language Deloitte recommends regarding Audit Committee funding is sourced from the SEC. Specifically, effective April 25, 2003, the SEC, as directed by the Sarbanes-Oxley Act of 2002 (SOX), adopted a new rule related to audit committee requirements. These requirements related to the independence of audit committee members; the audit committee's responsibility to select and oversee the independent accountant; procedures for handling complaints regarding accounting practices; the authority of the audit committee to engage advisors; and funding for the independent auditor and any outside advisors engaged by the audit committee. LACERA does not issue securities that are listed on national securities exchanges and is therefore not subject to this rule. However, organizations that are not subject to the rule consider its provisions to be best practice and many adopt its provisions, nonetheless, and many of the provisions of this rule are found in the IIA's sample Audit Committee Charter.

In promulgating this rule, the SEC provided the following commentary regarding Audit Committee funding which I found particularly insightful and applicable to the question at hand.

> ***E. Funding***
>
> *An audit committee's effectiveness may be compromised if it is dependent on management's discretion to compensate the independent auditor or the advisors employed by the committee, especially when potential conflicts of interest with management may be apparent. Accordingly, as proposed, the final rule requires the issuer to provide for appropriate funding, as determined by the audit committee, in its capacity as a committee of the board of directors, for payment of compensation:*

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[1] https://www2.deloitte.com/content/dam/Deloitte/us/Documents/center-for-board-effectiveness/us-audit-committee-resource-guide-appendix-a.pdf

- *To any registered public accounting firm engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services for the listed issuer; and*
- *To any advisors employed by the audit committee.*

This requirement will further the standard relating to the audit committee's responsibility to appoint, compensate, retain and oversee the outside auditor. It also will add meaning to the standard relating to the audit committee's authority to engage independent advisors. Not only could an audit committee be hindered in its ability to perform its duties objectively by not having control over the ability to compensate these advisors, but the role of the advisors also could be compromised if they are required to rely on management for compensation. Thus, absent such a provision, both the audit committee and the advisors could be less willing to address disagreements or other issues with management.

Commenters supported this requirement. We also requested comment on whether there should be limits on the amount of compensation that could be requested by the audit committee. The overwhelming majority of commenters did not support compensation limits, arguing that to do otherwise would subvert the intent of the requirement. These commenters argued that audit committee members' own fiduciary duties to the issuer and natural oversight by the board of directors over the audit committee would address any concerns over abuse. The final rule does not set funding limits.

Some commenters believed it would be appropriate to supplement the funding requirements. While the Commission's proposal would address the compensation of advisors, it would not provide assurance that the audit committee itself can obtain the funding it needs to carry out its duties. Specifically, these commenters believed the final rule should also state that the issuer must provide appropriate funding for ordinary administrative expenses of the audit committee. We find merit in this suggestion. An audit committee's effectiveness may be compromised if it is dependent on management's discretion to pay for the committee's expenses, especially when potential conflicts of interest with management may be apparent. Accordingly, the final rule provides that, in addition to funding for advisors, the issuer must provide appropriate funding for ordinary administrative expenses of the audit committee that are necessary or appropriate in carrying out its duties.

The Government Finance Officers Association (GFOA), a well-respected public sector finance organization, includes the following in its recommendations regarding the establishment of audit committees by state and local governments[2]: ***The audit committee should be adequately funded and should be authorized to engage the services of financial experts, legal counsel, and other appropriate specialists, as***

[2] https://www.gfoa.org/materials/audit-committees

necessary to fulfill its responsibilities. However, the GFOA also notes that one should not interpret this recommended practice as limiting the full governing body from exercising ultimate authority.

Analysis of contingent budget with a cap, or an agency commitment to provide appropriate funding

By its very nature, the contingent budget with its current cap of $250,000 puts guiderails around the Audit Committee's spending authority. Some trustees may believe that is prudent given the fact that the organization's two governing boards, the Board of Retirement and Board of Investment, had never granted budgetary authority to any of its committees before they narrowly approved the granting of budgetary authority to this committee, and that any discretionary use of budgetary authority could be minimized through a very focused audit planning process. I concur that the audit planning process should be thorough and, if it is, would reduce the likelihood that the Audit Committee would need to retain advisory firms beyond those included in the plan. But, establishing guiderails could compromise, at a minimum, the perception that the Audit Committee can achieve its objectives. The Audit Committee in this organization is an important component in the system of internal controls designed to protect the organization's financial assets, which are approaching nearly $70 billion. Deviations in Committee responsibility and support from recommended best practice could compromise the effectiveness of that system of internal controls, certainly in perception if not also in practice. To put that $70 billion figure in perspective, it is greater than the market capitalization of each of the following well-known firms: Colgate-Palmolive, BMW, and Marsh & McClellan. This organization's 180,000 members deserve an internal control system that meets or exceeds that which the recommended practices would allow.

There are several mechanisms in place that should, individually and collectively, give comfort to each trustee that this Committee would act responsibly should the boards commit to provide it appropriate funding.

- Fiduciary duty - As commenters in the SEC rulemaking note, chief among these mechanisms are audit committee members' own fiduciary duties. I have served as a trustee for nearly ten years and although we may disagree from time to time on different issues, each one of us consistently holds high the fiduciary duty of loyalty and care.

- Number of Committee Members – at seven members, three from each board with the County Treasurer serving ex officio, each board is well represented. As well, the size of the group also allows for greater representation of differing opinions, which can be discussed and deliberated, enhancing the quality of decisions.

- Oversight – As commenters in the SECF rulemaking noted, natural oversight by the boards over the audit committee would address any concerns over abuse.

> This Committee's authorities are those which the boards grant to it. If despite consistent application of our fiduciary duties and quality of decision-making, we run amok in the application of the boards' commitment to provide appropriate funding, then we should expect the boards to engage with the Committee on their concerns.

Application of a commitment to provide appropriate funding

Santos Kreimann, Steven Rice, Richard Bendall and I met to discuss the impact of this language, should the Audit Committee adopt it, on LACERA's budget practices. Mr. Kreimann stated that if the Audit Committee engaged a firm related to a matter that had not been included in the Audit Plan, he would first look to the Audit Division's operating budget to determine if any projected savings were available to fund that expenditure, in whole or in part. Secondly, he would identify budgetary savings from the overall budget to transfer to the Audit Division operating budget to fund the additional services. If the projected savings were not sufficient, then, depending on the dollar amount of the deficiency, he may present a budget adjustment for additional appropriation to each board.

Conclusion and Recommendation

I consider the SEC rulemaking and GFOA to be best practice in this area, which leads me to conclude that the Audit Committee charter should include a statement that LACERA will provide appropriate funding to the Audit Committee, replacing reference to a contingent budget. Applying a limit or a cap to that broad organizational commitment could compromise this organization's comprehensive system of internal controls. Committee abuse of this commitment can be minimized if not curtailed in its entirety through consistent adherence by trustees to their fiduciary duties, the number of trustees on the committee which leaves each board well represented and allows for deliberation of differing opinions, and general oversight by the boards. In my analysis I weight the negative impact to our system of internal controls more heavily than I do the likelihood of Committee abuse of this commitment.

Given this, the Audit Committee Charter before your Committee includes the deletion of the requirement that the Committee recommend a contingent budget and includes the addition of the following language:

> LACERA will provide appropriate funding, as determined by the Audit Committee, for compensation to the Financial Auditor, to any Professional Service Provider that the Audit Committee chooses to engage, and for payment of ordinary administrative expenses of the Audit Committee that are necessary or appropriate in carrying out its duties.

Thank you for your consideration of this information and recommendation.

C: Santos Kreimann
Richard Bendall
Steven Rice
Johanna Fontenot
JJ Popowich

ATTACHMENT B

Los Angeles County Employees Retirement Association

Audit Committee Charter

December 2020

2020

AUDIT COMMITTEE CHARTER

Table of Contents

AUDIT COMMITTEE CHARTER

I. CHARTER

This Charter establishes the authority and responsibilities of the Audit Committee, as assigned by Los Angeles County Employees Retirement Association's (LACERA) Board of Retirement and Board of Investments (Boards). The Audit Committee Charter is a living document and should be reviewed at least every three years.

II. PURPOSE AND ASSIGNED FIDUCIARY OVERSIGHT DUTIES

In November 2003, LACERA's Boards established the LACERA Audit Committee.

The purpose of the Audit Committee is to assist the Boards in fulfilling their fiduciary oversight duties for the:

- **A.** Internal Audit Activity
- **B.** Professional Service Provider Activity
- **C.** Financial Reporting Process
- **D.** Values and Ethics, and
- **E.** Organizational Governance

III. PRINCIPLES OF THE AUDIT COMMITTEE

The Audit Committee will conduct itself in accordance with LACERA's Code of Ethical Conduct and the following core principles from the Institute of Internal Auditors' (IIA) Code of Ethics. The Audit Committee expects the Boards, Management, and staff will also adhere to these requirements.

Integrity – The Audit Committee Members will perform their work with honesty, diligence, and responsibility. The Audit Committee expects and will encourage transparency when fulfilling its duties. Communications between Committee Members, Management, staff, and/or Professional Service Providers will be open, direct, and complete. Subject to applicable laws and organizational limitations, Internal Audit will regularly provide the Audit Committee with updates on audit and consulting projects completed and related findings and follow-up.

Independence & Objectivity - The Audit Committee will perform its responsibilities in an independent manner and in compliance with fiduciary duty without exception. Audit Committee Members will disclose any conflicts of interest (actual or perceived) to the Committee.

Confidentiality – The Audit Committee Members will be prudent in the use and protection of information acquired during the course of its duties.

Competency - Audit Committee Members will receive formal orientation training on the purpose and mandate of the Committee and LACERA's objectives. Audit Committee Members are obligated to prepare for and participate in Committee meetings.

Professional Standards - The Audit Committee will ensure all related work will be handled with the highest professional standards consistent with auditing standards of practice and industry guidelines.

IV. AUTHORITY

The Audit Committee will have unrestricted access to Management and staff, and any relevant information it considers necessary to discharge its duties. All employees are directed to cooperate with the Committee and its requests. If access to requested information is denied due to legal or confidentiality reasons, the Audit Committee and/or CAE will follow a prescribed, Board approved mechanism for resolution of the matter.

The Audit Committee has the authority to conduct or authorize investigations into any matters within its scope of duties, including engaging independent counsel and/or other advisors it deems necessary.

The Audit Committee is empowered to:

1. Approve the appointment, compensation, and work of the Financial Auditor hired to audit LACERA's financial statements.
2. Approve the appointment, compensation, and work of other Professional Service Providers to perform non-financial statement audits, reviews, or investigations, subject to limitations due to confidentiality, legal standards, and/or where approval will clearly impair the purpose or methods of the audit.
3. Resolve any significant disagreements regarding risks, findings, and/or payment between Management and the Financial and/or Other Service Providers.

V. AUDIT COMMITTEE COMPOSITION AND CONSULTANT

The Audit Committee will consist of seven members: three elected annually from each Board and the ex-officio member of both Boards, the LA County's Treasurer and Tax Collector. If any elected Audit Committee member leaves Board service or resigns from the Audit Committee prior to the completion of their term, the Board of the departing member, will elect a new Audit Committee member at the next regularly scheduled Board meeting.

The Committee shall have the authority to approve the hiring of the Audit Committee Consultant as an advisor through a Request for Proposal process. The Audit Committee Consultant will be designated as the audit technical and financial expert, to advise the Committee on audit and financial matters. The Audit Committee Consultant's contract will be for three years.

At the first Committee meeting of each calendar year, the Committee shall elect a Chairman, Vice Chair and Secretary, each to serve for a term of one year or until his or her successor is duly elected and qualified, whichever is less. In the event of a vacancy in the office of Chair, the Vice Chair shall immediately assume the office of Chair for the remainder of the term. In the event of a vacancy in the office of Vice Chair or Secretary, the Committee shall elect one of its members to fill such vacancy for the remainder of the term, at its next regular meeting.

VI. AUDIT COMMITTEE MEETINGS

The Audit Committee will conduct regular meetings at least four times per year, with authority to convene additional meetings, as circumstances require. The time frame between Audit Committee meetings should not exceed four months.

All Committee Members are expected to attend each meeting.

All meetings of the Audit Committee shall be as noticed as joint meetings with the Board of Retirement and Board of Investments to allow for participation of all trustees in open and closed session Audit Committee discussions, provided that non-committee trustees may not make or second motions or vote and provided further that closed sessions to discuss the CAE's annual assessment and the Committee's recommendation to the Boards regarding the appointment, discipline, dismissal, and/or removal of the CAE shall be noticed for attendance by Committee members only.

Regular meeting notices and agendas will be posted at least 72 hours in advance of the regular meetings and will be made available to the public in accordance with the Ralph M. Brown Act (Government Code Sections 54950, et seq.). Public documents referred to in the agenda will be made available for review at the office of the staff secretary to the Committee. The Committee will invite members of Management, Internal Auditors, Financial Auditors, all other Professional Service Providers, and/or others to attend meetings and provide pertinent information, as necessary.

Special meetings of the Committee may be called in the manner provided by Government Code Section 54956(a). The Committee will have such other powers as provided in the Brown Act.

Robert's Rules of Order, except as otherwise provided herein, shall guide the Committee in its proceedings; however, the Chair of the Committee shall have the same rights to vote and participate in discussions as any other member of the Committee without relinquishing the chair. The order of business shall be as determined by formal action of the Committee. Four members of the seven-member Audit Committee, excluding the Audit Committee Consultant, constitute a quorum.

The Secretary of the Committee shall cause to be recorded in the minutes the time and place of each meeting of the Committee, the names of the members present, all official acts of the Committee, the votes given by members except when the action is unanimous, and when requested by a member, that member's dissent or approval with his or her reasons, and shall cause the minutes to be written forthwith and presented for approval at the next regular meeting.

VII. RESPONSIBILITIES

A. Internal Audit Activity

1. Internal Audit Strategy and Annual Plan
   a. Review and provide input on Internal Audit's annual risk assessment
   b. Review and approve Internal Audit's Annual Audit Plan (Plan) and resource plan, make recommendations concerning audit projects.
   c. Recommend to the Boards a budget to achieve the Plan plus a contingent budget for additional work related to audit findings or other unplanned work.
   d. Review and monitor Internal Audit's activity relative to its Plan. Review and approve all major changes to the Plan.
2. Internal Audit Engagement & Follow-Up
   a. Review and discuss engagement reports to take the following action(s):
      i. accept and file report,
      ii. instruct staff to forward report to Boards or Committees,
      iii. make recommendations to the Boards or Committees regarding actions as may be required based on audit findings and/or,
      iv. provide further instruction to staff.
   b. Monitor Internal Audit's recommendations to ensure Management has adequately and timely addressed the risk(s) identified, either through implementing a new policy, procedure, or process, or accepting the associated risk.
   c. Inquire whether any evidence of fraud has been identified during internal or external audit engagements, and evaluate what additional actions, if any, should be taken.
   d. Inquire whether any audit or non-audit engagements have been completed but not reported to the Audit Committee; if so, inquire whether any matters of significance arose from such work.
   e. Review and advise Management and the Boards on the results of any special investigations.

3. Standards Conformance
   a. Approve the Internal Audit Charter.
   b. Ensure the Internal Audit Division conforms with the IIA's International Standards for the Professional Practice of Internal Audit, particularly the independence of Internal Audit and its organizational structure.
   c. Ensure the Internal Audit Division has a quality assurance and improvement program (QAIP), and that the results of these periodic assessments are presented to the Audit Committee.
   d. Ensure the Internal Audit Division has an external quality assurance review every five years. Review the results of the external quality assurance review and monitor the implementation of related recommendations.

      Advise the Boards about any recommendations for the continuous improvement of the internal audit activity.

4. Chief Audit Executive (CAE)

   Since the CAE reports to the Chief Executive Officer (CEO) for administrative purposes, but to the Audit Committee for functional purposes, the Audit Committee will be responsible for the following:
   a. Make recommendations to both Boards regarding the appointment, discipline, dismissal, and/or removal of the CAE, which will be addressed by the Boards in a joint meeting. Both Boards will make the final decisions as to the appointment, discipline, dismissal, and/or removal of the CAE. The CEO has authority to administer minor discipline, which is limited to counseling memos and written warnings, with notice of such discipline to be provided to the Committee and the Boards at their next meetings. Consideration by the Boards and the Committee concerning the appointment, discipline, dismissal, and/ or removal of the CAE will be made in executive session under Government Code Section 54957(b).
   b. Perform the CAE's annual assessment with qualitative input from the CAE and CEO. The Committee's discussion regarding the CAE's annual performance evaluation will be made in executive session under Government Code Section 54957(b).
   c. Administer the CAE's annual salary adjustment using the Boards' established compensation structure.

B. Professional Service Provider Activity

The Audit Committee is responsible for the oversight of all work performed by professional service providers (Service Providers) for audits, reviews, or investigations, including the audit of LACERA's financial statements.

1. Approve the appointment and compensation of the External Financial Auditor, hired to perform an independent audit of LACERA's financial statements. Oversee the work of the Financial Auditor, including review of the Financial Auditor's proposed audit scope and approach, as well as coordination with Internal Audit and Management.

2. Approve the appointment and compensation of other Professional Service Providers, hired to perform non-financial statement audits, reviews or consulting, subject to limitations due to confidentiality, legal standards, and/or where approval will clearly impair the purpose or methods of the audit.

3. Review the Professional Service Providers, including the Financial Auditor, and Management the results of the work performed, any findings and recommendations, Management's responses, and actions taken to implement the audit recommendations.

C. Financial Reporting Process

The Audit Committee is responsible for the oversight of the independent audit of LACERA's financial statement, including but not limited to overseeing the resolution of audit findings in areas such as internal control, legal, regulatory compliance, and ethics.

1. Review significant accounting and reporting issues, including complex or unusual transactions and highly judgmental areas, recent professional and regulatory pronouncements, and understand their impact on the financial statements.

2. Review with Management and the Financial Auditors the results of the audit, including any difficulties encountered.

3. Review the annual financial statements, consider whether they are complete, consistent with information known to Committee members, and reflect appropriate accounting principles.

4. Review with Management and the Financial Auditors all matters required to be communicated to the Committee under *Generally Accepted Auditing Standards*.

D. Values and Ethics

1. Review and assess LACERA's Code of Ethical Conduct established by the Boards and Management.

2. Annually, review Management's process for communicating LACERA's Code of Ethical Conduct to Trustees, Management, and staff, and for monitoring compliance therewith.

3. Review reports received relating to conflicts of interest and ethics issues, and if appropriate, make a recommendation to the Boards.

E. Organizational Governance

To obtain reasonable assurance with respect to LACERA's governance process, the Audit Committee will review and provide advice on the governance process established and maintained, and the procedures in place to ensure they are operating as intended.

1. Risk Management
   a. Annually review LACERA's risk profile.
   b. Obtain from the CAE an annual report on Management's implementation and maintenance of an appropriate enterprise wide risk management process. Provide advice on the risk management processes established and maintained, and the procedures in place to ensure that they are operating as intended.
   c. Provide oversight on significant risk exposures and control issues, including fraud risks, governance issues, and other matters needed or requested by Management and the Boards.

2. Fraud
   a. Oversee Management's arrangements for the prevention and detection of fraud, including ensuring adequate time is spent discussing and raising awareness about fraud and the Hotline.
   b. Review a summary of Hotline reports, and if appropriate make a recommendation to the Boards.

3. System of Internal Controls
   a. Consider the effectiveness of LACERA's internal control system, including information technology security and control, as well as all other aspects of LACERA's operations.
   b. Understand the scope of Internal and External Auditors' review of internal control over financial reporting, and obtain reports on significant findings and recommendations, together with Management's responses.
   c. Review and provide advice on control of LACERA as a whole and its individual divisions.

4. System of Compliance
   a. Annually, review the effectiveness of Management's system of compliance with laws, regulations, policies, and procedures that are business critical.

b. As needed, review the observations and findings of any examinations by regulatory agencies.

c. Obtain regular updates from Management and LACERA's Legal Office regarding compliance matters.

d. At least annually, review reported activity to ensure issues of fraud, noncompliance, and/or inappropriate activities are being addressed.

F. Other Responsibilities

1. Report to the Boards as needed about the Audit Committee's activities, issues, and related recommendations.

2. Provide an open avenue of communication between Internal Audit, all Professional Service Providers, including the Financial Auditor, Management, and the Boards.

3. Perform other activities related to this Charter as requested by the Boards.

4. Review and assess the adequacy of the Committee's Charter at least every three years, requesting the Boards' approval for proposed changes.

VIII. APPROVAL

This Charter was reviewed by the Audit Committee on December 11, 2020 and approved by the Board of Investments and Board of Retirement on December 16, 2020. This Charter is thereby effective December 16, 2020 and is hereby signed by the following persons who have authority and responsibilities under this Charter.

Gina V Sanchez	1/13/2021
Gina Sanchez *Chair, Audit Committee*	**Date**
David Green	1/13/21
David Green *Chair, Board of Investments*	**Date**
Herman B. Santos	1/13/2021
Herman Santos *Chair, Board of Retirement*	**Date**

Signature: Gina V Sanchez
Gina V Sanchez (Jan 14, 2021 14:00 PST)

Email: gsanchez@lacera.com

Signature:
David Green (Jan 14, 2021 14:09 PST)

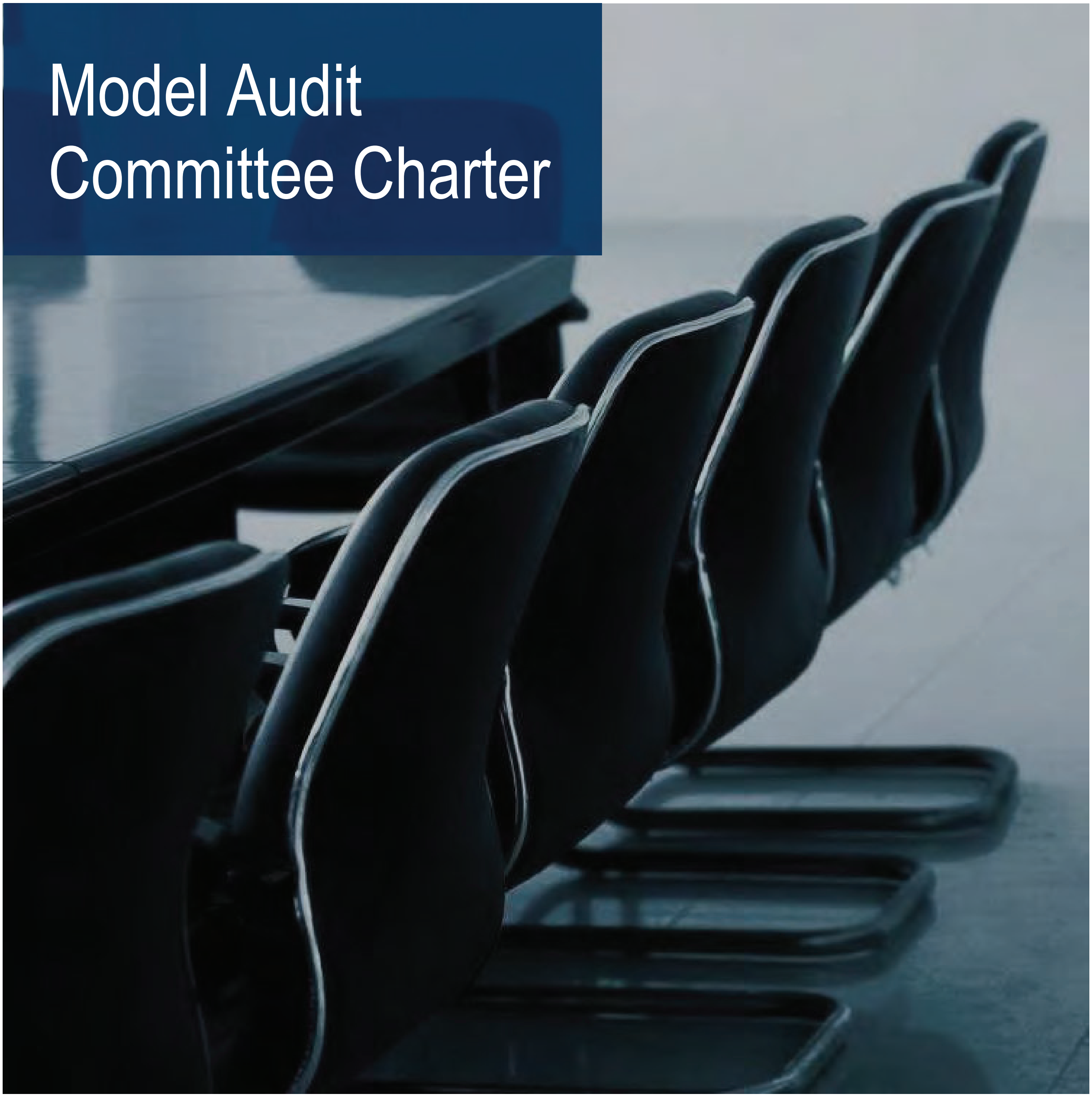
Email: davidgreen37@sbcglobal.net

Signature:
Herman Santos (Jan 20, 2021 14:13 PST)

Email: hermansantos49@gmail.com

ATTACHMENT C

Model Audit Committee Charter



Revised: March 2017

The Institute of Internal Auditors | Global

Contents

Preface

The Model Audit Committee Charter is designed to illustrate common or leading practices typically set out in an audit committee charter. The generic nature of this draft is intended to encourage customization.

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

In drafting an audit committee charter, care should be exercised to customize the charter, including replacing bracketed, blue text with language that accurately reflects the user's situation.

Organizational Principles

Introduction [Optional]

The audit committee plays an important role in providing oversight of the organization's governance, risk management, and internal control practices. This oversight mechanism also serves to provide confidence in the integrity of these practices. The audit committee performs its role by providing independent oversight to the governing body e.g. board.

Background [Optional]

The audit committee was established on [date]. At that time, the charter for the committee was established. The charter, which governs the work of the committee, was reviewed and updated on [date].

Purpose

The purpose of the audit committee is to provide a structured, systematic oversight of the organization's governance, risk management, and internal control practices. The committee assists the board and management by providing advice and guidance on the adequacy of the organization's initiatives for:

- Values and ethics.
- Governance structure.
- Risk management.
- Internal control framework.
- Oversight of the internal audit activity, external auditors, and other providers of assurance.
- Financial statements and public accountability reporting.

In broad terms, the audit committee reviews each of the items noted above and provides the board with independent advice and guidance regarding the adequacy and effectiveness of management's practices and potential improvements to those practices.

Mandate [Optional]

The mandate for the establishment of the audit committee was derived from [Insert text; the exact source of the mandate will vary among jurisdictions and depend on the location, government structure, type of public sector services, and relationship to other government entities. This section is typical for public sector organizations and may come in the form of laws, regulations, policies and procedures, or bylaws.].

Authority

The audit committee charter sets out the authority of the audit committee to carry out the responsibilities established for it by the board as articulated within the Audit Committee Charter.

In discharging its responsibilities, the audit committee will have unrestricted access to members of management, employees, and relevant information it considers necessary to discharge its duties. The committee also will have unrestricted access to records, data, and reports. If access to requested documents is denied due to legal or confidentiality reasons, the Audit Committee and/or CAE will follow a prescribed, board approved mechanism for resolution of the matter.

The audit committee is entitled to receive any explanatory information that it deems necessary to discharge its responsibilities. The organization's management and staff should cooperate with audit committee requests.

The audit committee may engage independent counsel and/or other advisors it deems necessary to carry out its duties.

The audit committee is empowered to:

- Appoint, compensate, and oversee all audit and non-audit services performed by auditors, including the work of any registered public accounting firm employed by the organization. **[Note: This requirement may not be applicable in the public sector if the external auditor is established by legislation; for example, an Auditor General.]**
- Resolve any disagreements between management and the external auditor regarding financial reporting and other matters.
- Preapprove all auditing and non-audit services performed by auditors.

Composition of the Audit Committee

The audit committee will consist of **[Insert number; at least three]** members that are independent of the organization. The members should collectively possess sufficient knowledge of audit, finance, specific industry knowledge, IT, law, governance, risk, and control. Because the responsibilities of the audit committee evolve in response to regulatory, economic, and reporting developments, it is important to periodically re-evaluate members' competencies and the overall balance of skills on the committee in response to emerging needs.

The Chair of the Audit Committee

The board will designate the chair of the audit committee and appointment committee members.

Terms of Office

The term of office for an audit committee member is **[Insert number; typically three to four]** years. Continuance of audit committee members will be reviewed annually. To ensure continuity within the audit committee, the appointment of members should be staggered. [Note: In some jurisdictions there are limits to the number of terms which independent members of the committee may serve, if this is the case such limits may be reflected in the charter.]

Quorum

The quorum for the audit committee will be a majority of the members.

Operational Principles

Audit Committee Values

The audit committee will conduct itself in accordance with the code of values and ethics of the organization and [Add reference to additional pertinent legislation/regulations/policies]. The audit committee expects that management and staff of the organization will adhere to these requirements.

Communications

The audit committee expects that all communication with management and staff of the organization as well as with any external assurance providers will be direct, open, and complete.

Work Plan

The audit committee chair will collaborate with senior management and the chief audit executive (CAE) to establish a work plan to ensure that the responsibilities of the audit committee are scheduled and will be carried out.

Meeting Agenda

The chair will establish agendas for audit committee meetings in consultation with audit committee members, senior management, and the CAE.

Information Requirements

The audit committee will establish and communicate its requirements for information, which will include the nature, extent, and timing of information. Information will be provided to the audit committee at least one week prior to each audit committee meeting.

Executive Sessions

The audit committee will schedule, and hold if necessary, a private session with the chief executive officer (CEO), the chief financial officer (CFO), the CAE, external assurance providers, and with any other officials that the audit committee may deem appropriate at each of its meetings.

Preparation and Attendance

Audit committee members are obligated to prepare for and participate in committee meetings.

Conflict(s) of Interest

Audit committee members should adhere to the organizations code of conduct and any values and ethics established by the organization. It is the responsibility of audit committee members to disclose any conflict of interest or appearance of a conflict of interest to the committee. If there is any question as to whether audit committee member(s) should recuse themselves from a vote, the committee should vote to determine whether the member should recuse himself or herself.

Orientation and Training

Audit committee members will receive formal orientation training on the purpose and mandate of the committee and on the organization's objectives. A process of continuing education will be established.

Operational Procedures

Meetings

The audit committee will meet at least **[Insert number; at least four is generally recommended]** times annually or more frequently as the committee deems necessary. The time frame between audit committee meetings should not exceed four months.

Minutes

Minutes will be prepared in accordance with applicable law, regulation, bylaw, policy, procedure, and/or other applicable requirements. Meeting minutes will be provided in draft format at least two weeks after the audit committee meeting.

Required Attendance

The CAE and **[Insert text; include the title of the person to whom the CAE reports and the title of the person responsible for managing the external audit relationship]** are required to attend all audit committee meetings.

Secretariat Services

The CAE (or another appropriate designee) will facilitate and coordinate meetings as well as provide ancillary support to the committee, as time and resources permit.

Remuneration of Committee Members

Committee members may be reimbursed for travel and committee-related expenses. **[If applicable, a policy should be established and outlined in the legal basis and/or a formal travel policy that applies to all committee members.]**

Payment rates and allowances for committee members' time and/or services are established formally in [Insert text regarding laws, regulations, or in written policy and procedures by the governing body].

Professional Indemnity Insurance: [Professional indemnity insurance arrangements that are suitable to both the member and the organization should be established. Insert text regarding agreed-upon arrangements].

Responsibilities

It is the responsibility of the audit committee to provide the board with independent, objective advice on the adequacy of management's arrangements with respect to the following aspects of the management of the organization:

Values and Ethics

To obtain reasonable assurance with respect to the organization's values and ethics practices, the audit committee will:

- Review and assess the policies, procedures, and practices established by the governing body to monitor conformance with its code of conduct and ethical policies by all managers and staff of the organization.
- Provide oversight of the mechanisms established by management to establish and maintain high ethical standards for all of the managers and staff of the organization.
- Review and provide advice on the systems and practices established by management to monitor compliance with laws, regulations, policies, and standards of ethical conduct and identify and deal with any legal or ethical violations.

Organizational Governance

To obtain reasonable assurance with respect to the organization's governance process, the audit committee will review and provide advice on the governance process established and maintained within the organization and the procedures in place to ensure that they are operating as intended.

Risk Management

To obtain reasonable assurance with respect to the organization's risk management practices, the audit committee will:

- Annually review the organization's risk profile.
- Obtain from the CAE an annual report on management's implementation and maintenance of an appropriate enterprise wide risk management process.

- Provide oversight on significant risk exposures and control issues, including fraud risks, governance issues, and other matters needed or requested by senior management and the board.
- Provide oversight of the adequacy of the combined assurance being provided.
- Review and provide advice on the risk management processes established and maintained by management and the procedures in place to ensure that they are operating as intended.

Fraud

To obtain reasonable assurance with respect to the organization's procedures for the prevention and detection of fraud, the audit committee will:

- Oversee management's arrangements for the prevention and deterrence of fraud.
- Ensure that appropriate action is taken against known perpetrators of fraud.
- Challenge management and internal and external auditors to ensure that the entity has appropriate antifraud programs and controls in place to identify potential fraud and ensure that investigations are undertaken if fraud is detected.

Control

To obtain reasonable assurance with respect to the adequacy and effectiveness of the organization's controls in responding to risks within the organization's governance, operations and information systems, the audit committee will:

- Consider the effectiveness of the organization's control framework, including information technology security and control.
- Review and provide advice on the control of the organization as a whole and its individual units.
- Receive reports on all matters of significance arising from work performed by other providers of financial and internal control assurance to senior management and the board.

Compliance

The audit committee will:

- Review the effectiveness of the system for monitoring compliance with laws and regulations and the results of management's investigation and follow-up (including disciplinary action) of any instances of noncompliance.
- Review the observations and conclusions of internal and external auditors and the findings of any regulatory agencies.

- Review the process for communicating the code of conduct to the organization's personnel and for monitoring compliance.
- Obtain regular updates from management and the organization's legal counsel regarding compliance matters.

Oversight of the Internal Audit Activity and Other Assurance Providers

Internal Audit Activity

To obtain reasonable assurance with respect to work of the internal audit activity, the audit committee will provide oversight related to:

Internal Audit Charter and Resources

- Review and approve the internal audit charter at least annually. The charter should be reviewed to ensure that it accurately reflects the internal audit activity's purpose, authority, and responsibility, consistent with the mandatory guidance of The IIA's International Professional Practices Framework and the scope and nature of assurance and consulting services, as well as changes in the financial, risk management, and governance processes of the organization and reflects developments in the professional practice of internal auditing.
- Advise the board about increases and decreases to the requested resources to achieve the internal audit plan. Evaluate whether any additional resources are needed permanently or should be provided through outsourcing.

CAE Performance

- Advise the board regarding the qualifications and recruitment, appointment, and removal of the CAE.
- Provide input to management related to evaluating the performance of the CAE.
- Recommend to management or the governing body the appropriate compensation of the CAE.

Internal Audit Strategy and Plan

- Review and provide input on the internal audit activity's strategic plan, objectives, performance measures, and outcomes.
- Review and approve proposed risk-based internal audit plan and make recommendations concerning internal audit projects.
- Review and approve the internal audit plan and engagement work program, including reviewing internal audit resources necessary to achieve the plan.
- Review the internal audit activity's performance relative to its audit plan.

Internal Audit Engagement and Follow Up

- Review internal audit reports and other communications to management.
- Review and track management's action plans to address the results of internal audit engagements.
- Review and advise management on the results of any special investigations.
- Inquire of the CAE whether any internal audit engagements or non-audit engagements have been completed but not reported to the committee; if so, inquire whether any matters of significance arose from such work.
- Inquire of the CAE whether any evidence of fraud has been identified during internal audit engagements and evaluate what additional actions, if any, should be taken.

Standards Conformance

- Inquire of the CAE about steps taken to ensure that the internal audit activity conforms with The IIA's *International Standards for the Professional Practice of Internal Auditing (Standards)*.
- Ensure that the internal audit activity has a quality assurance and improvement program and that the results of these periodic assessments are presented to the audit committee.
- Ensure that the internal audit activity has an external quality assurance review every five years.
- Review the results of the independent external quality assurance review and monitor the implementation of the internal audit activity's action plans to address any recommendations.
- Advise the board about any recommendations for the continuous improvement of the internal audit activity.

External Auditors

To obtain reasonable assurance with respect to work of the external assurance providers, the audit committee will meet with the external assurance providers during the planning phase of the engagement, the presentation of the audited financial statements, and the discussion of the results of engagements and recommendations for management.

The audit committee will:

- Review the external auditors' proposed audit scope and approach, including coordination of audit effort with the internal audit activity. **[Note: This may not be applicable in a public sector setting.]**
- Review the performance of the external auditors, and exercise final approval on the appointment or discharge of the auditors. **[Note: This may not be applicable in a public sector setting.]**

- Obtain statements from the external auditors about their relationships with the organization, including non-audit services performed in the past, and discuss the information with the external auditors to review and confirm their independence.
- Have regularly scheduled exclusive meetings with external auditors to discuss any sensitive matters.
- Monitor management's progress on action plans.

To obtain reasonable assurance that management has acted on the results and recommendations of internal and external audit engagements, the audit committee will regularly review reports on the progress of implementing approved management action plans and audit recommendations resulting from completed audit engagements.

Financial Statements and Public Accountability Reporting

The audit committee is responsible for oversight of the independent audit of the government entity's financial statements, including but not limited to overseeing the resolution of audit findings in areas such as internal control, legal, regulatory compliance, and ethics.

The audit committee will:

- Review with management and the external auditors the results of audit engagements, including any difficulties encountered.
- Review significant accounting and reporting issues, including complex or unusual transactions and highly judgmental areas, and recent professional and regulatory pronouncements, and understand their impact on the financial statements.
- Review the annual financial statements, and consider whether they are complete, consistent with information known to committee members, and reflect appropriate accounting principles.
- Review other sections of the annual report and related regulatory filings and consider the accuracy and completeness of the information before it is released.
- Review with management and the external auditors all matters required to be communicated to the audit committee under generally accepted external auditing standards.
- Understand strategies, assumptions and estimates that management has made in preparing financial statements, budgets, and investment plans.
- Understand how management develops interim financial information and the nature and extent of internal and external auditor involvement in the process.
- Review interim financial reports with management and external auditors before filing with regulators, and consider whether they are complete and consistent with the information known to committee members.

Other Responsibilities

In addition, the audit committee will:

- Perform other activities related to this charter as requested by the governing body.
- Institute and oversee special investigations as needed.
- Regularly evaluate its performance and that of its individual members. **[Note: Annual assessments are recommended.]**

Reporting on Audit Committee Performance

The audit committee will report to the board annually, summarizing the committee's activities and recommendations. The report may be delivered during an audit committee meeting attended by the board or during a regularly scheduled meeting of the board.

The report should include:

- A summary of the work the audit committee performed to fully discharge its responsibilities during the preceding year.
- A summary of management's progress in addressing the results of internal and external audit engagement reports.
- An overall assessment of management's risk, control, and compliance processes, including details of any significant emerging risks or legislative changes impacting the governing organization.
- Details of meetings, including the number of meetings held during the relevant period and the number of meetings each member attended.
- Provide information required, if any, by new or emerging corporate governance developments.
- The committee may report to the governing body at any time regarding any other matter it deems of sufficient importance.

Approval/Signatures

Chief Executive Officer ____ Date _____________

Audit Committee Chair ____ Date _____________

Chairman of the Board ____ Date _____________

About The IIA

The Institute of Internal Auditors (IIA) is the internal audit profession's most widely recognized advocate, educator, and provider of standards, guidance, and certifications. Established in 1941, The IIA today serves more than 190,000 members from more than 170 countries and territories. The association's global headquarters are in Lake Mary, Fla., USA. For more information, visit www.globaliia.org.

Disclaimer

The IIA publishes this document for informational and educational purposes and, as such, is only intended to be used as a guide. This guidance material is not intended to provide definitive answers to specific individual circumstances. The IIA recommends that you always seek independent expert advice relating directly to any specific situation. The IIA accepts no responsibility for anyone placing sole reliance on this guidance.

The Institute of Internal Auditors | Global

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ATTACHMENT D

LACERA
Los Angeles County Employees Retirement Association

Audit Committee Charter

April 2021

2021

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LACERA

AUDIT COMMITTEE CHARTER

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AUDIT COMMITTEE CHARTER

I. CHARTER

This Charter establishes the authority and responsibilities of the Audit Committee, as assigned by Los Angeles County Employees Retirement Association's (LACERA) Board of Retirement and Board of Investments (Boards). The Audit Committee Charter is a living document and should be reviewed at least every three years.

II. PURPOSE AND ASSIGNED FIDUCIARY OVERSIGHT DUTIES

In November 2003, LACERA's Boards established the LACERA Audit Committee.

The purpose of the Audit Committee is to assist the Boards in fulfilling their fiduciary oversight duties for the:

- **A.** Internal Audit Activity
- **B.** Professional Service Provider Activity
- **C.** Financial Reporting Process
- **D.** Values and Ethics, and
- **E.** Organizational Governance
- **F.** Audit Committee and Internal Audit Budget

III. PRINCIPLES OF THE AUDIT COMMITTEE

The Audit Committee will conduct itself in accordance with LACERA's Code of Ethical Conduct and the following core principles from the Institute of Internal Auditors' (IIA) Code of Ethics. The Audit Committee expects the Boards, Management, and staff will also adhere to these requirements.

Integrity – The Audit Committee Members will perform their work with honesty, diligence, and responsibility. The Audit Committee expects and will encourage transparency when fulfilling its duties. Communications between Committee Members, Management, staff, and/or Professional Service Providers will be open, direct, and complete. Subject to applicable laws and organizational limitations, Internal Audit will regularly provide the Audit Committee with updates on audit and consulting projects completed and related findings and follow-up.

Independence & Objectivity - The Audit Committee will perform its responsibilities in an independent manner and in compliance with fiduciary duty without exception. Audit Committee Members will disclose any conflicts of interest (actual or perceived) to the Committee.

Confidentiality – The Audit Committee Members will be prudent in the use and protection of information acquired during the course of its duties.

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Competency - Audit Committee Members will receive formal orientation training on the purpose and mandate of the Committee and LACERA's objectives. Audit Committee Members are obligated to prepare for and participate in Committee meetings.

Professional Standards - The Audit Committee will ensure all related work will be handled with the highest professional standards consistent with auditing standards of practice and industry guidelines.

IV. AUTHORITY

The Audit Committee will have unrestricted access to Management and staff, and anyrelevant information it considers necessary to discharge its duties. All employees are directed to cooperate with the Committee and its requests. If access to requested information is denied due to legal or confidentiality reasons, the Audit Committee and/or CAE will follow a prescribed, Board approved mechanism for resolution of the matter.

The Audit Committee has the authority to conduct or authorize investigations into any matters within its scope of duties, including engaging independent counsel and/or other advisors it deems necessary.

V. AUDIT COMMITTEE COMPOSITION AND CONSULTANT

The Audit Committee will consist of seven members: three elected annually from each Board and the ex-officio member of both Boards, the Los Angeles County Treasurer. If anyelected Audit Committee member leaves Board service or resigns from the Audit Committeeprior to the completion of his or her term, the Board of the departing member, will elect a new Audit Committee member at the next regularly scheduled Board meeting.

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Deleted: The Audit Committee is empowered to:¶
Approve the appointment, compensation, and work of the Financial Auditor hired to audit LACERA's financial statements.¶
Approve the appointment, compensation, and work of other Professional Service Providers to perform non-financial statement audits, reviews, or investigations, subject to limitations due to confidentiality, legal standards, and/or where approval will clearly impair the purpose or methods of the audit.¶
Resolve any significant disagreements regarding risks, findings, and/or payment between Management and the Financial and/or Other Service Providers.

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The Committee shall have the authority to approve the hiring of the Audit Committee Consultant as an advisor through a Request for Proposal process. The Audit Committee Consultant will be designated as the audit technical and financial expert, to advise the Committee on audit and financial matters. The Audit Committee Consultant's contract will be for three years.

At the first Committee meeting of each calendar year, the Committee shall elect a Chair, Vice Chair and Secretary, each to serve for a term of one year or until his or her successor is duly elected and qualified, whichever is less. In the event of a vacancy in the office of Chair, the Vice Chair shall immediately assume the office of Chair for the remainder of the term. Inthe event of a vacancy in the office of Vice Chair or Secretary, the Committee shall elect oneof its members to fill such vacancy for the remainder of the term, at its next regular meeting.

VI. AUDIT COMMITTEE MEETINGS

The Audit Committee will conduct regular meetings at least four times per year, withauthority to convene additional meetings, as circumstances require. The time frame betweenAudit Committee meetings should not exceed four months.

All Committee Members are expected to attend each meeting.

All meetings of the Audit Committee shall be as noticed as joint meetings with the Board of Retirement and Board of Investments to allow for participation of all trustees in open and closed session Audit Committee discussions, provided that non-committee trustees may not make or second motions or vote and provided further that closed sessions to discuss the CAE's annual assessment and the Committee's recommendation to the Boards regarding the appointment, discipline, dismissal, and/or removal of the CAE shall be noticed for attendance by Committee members only.

Regular meeting notices and agendas will be posted at least 72 hours in advance of the regular meetings and will be made available to the public in accordance with the Ralph M. Brown Act (Government Code Sections 54950, et seq.). Public documents referred to in the agenda will be made available for review at the office of the staff secretary to the Committee and also published on the LACERA website, lacera.com. The Committee will invite members of Management, Internal Auditors, Financial Auditors, all other Professional Service Providers, and/or others to attend meetings and provide pertinentinformation, as necessary.

Special meetings of the Committee may be called in the manner provided by Government Code Section 54956(a). The Committee will have such other powers as provided in the Brown Act.

Robert's Rules of Order, except as otherwise provided herein, shall guide the Committee in its proceedings; however, the Chair of the Committee shall have the same rights to vote and participate in discussions as any other member of the Committee without relinquishing the chair. The order of business shall be as determined by formal action of the Committee. Four members of the seven-member Audit Committee, constitute a quorum.

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The Secretary of the Committee shall cause to be recorded in the minutes the time and place of each meeting of the Committee, the names of the members present, all official acts of the Committee, the votes given by members except when the action is unanimous, and when requested by a member, that member's dissent or approval with his or her reasons, and shall cause the minutes to be written forthwith and presented for approval at the next regular meeting.

VII. RESPONSIBILITIES

A. Internal Audit Activity

1. Internal Audit Strategy and Annual Plan
   a. Review and provide input on Internal Audit's annual risk assessment
   b. Review and approve Internal Audit's Annual Audit Plan (Plan) and resource plan, make recommendations concerning audit projects.
   c. Review and monitor Internal Audit's activity relative to its Plan. Review and approve all major changes to the Plan.

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2. Internal Audit Engagement & Follow-Up
   a. Review and discuss engagement reports to take the following action(s):
      i. accept and file report,
      ii. instruct staff to forward report to Boards or Committees,
      iii. make recommendations to the Boards or Committees regarding actions as may be required based on audit findings and/or,
      iv. provide further instruction to staff.
   b. Monitor Internal Audit's recommendations to ensure Management has adequately and timely addressed the risk(s) identified, either through implementing a new policy, procedure, or process, or accepting the associated risk.
   c. Inquire whether any evidence of fraud has been identified during internal or external audit engagements, and evaluate what additional actions, if any, should be taken.
   d. Inquire whether any audit or non-audit engagements have been completed but not reported to the Audit Committee; if so, inquire whether any matters of significance arose from such work.
   e. Review and advise Management and the Boards on the results of any special investigations.

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3. Standards Conformance
   a. Approve the Internal Audit Charter.
   b. Ensure the Internal Audit Division conforms with the IIA's International Standards for the Professional Practice of Internal Audit, particularly the independence of Internal Audit and its organizational structure.
   c. Ensure the Internal Audit Division has a quality assurance and improvement program (QAIP), and that the results of these periodic assessments are presented to the Audit Committee.
   d. Ensure the Internal Audit Division has an external quality assurance review every five years. Review the results of the external quality assurance review and monitor the implementation of related recommendations.

      Advise the Boards about any recommendations for the continuous improvement of the internal audit activity.

4. Chief Audit Executive (CAE)

   Since the CAE reports to the Chief Executive Officer (CEO) for administrative purposes, but to the Audit Committee for functional purposes, the Audit Committee will be responsible for the following:
   a. Make recommendations to both Boards regarding the appointment, discipline, dismissal, and/or removal of the CAE, which will be addressed by the Boards in a joint meeting. Both Boards will make the final decisions as to the appointment, discipline, dismissal, and/or removal of the CAE. The CEO has authority to administer minor discipline, which is limited to counseling memos and written warnings, with notice of such discipline to be provided to the Committee and the Boards at their next meetings. Consideration by the Boards and the Committee concerning the appointment, discipline, dismissal, and/ or removal of the CAE will be made in executive session under Government Code Section 54957(b).
   b. Perform the CAE's annual assessment with qualitative input from the CAE and CEO. The Committee's discussion regarding the CAE's annual performance evaluation will be made in executive session under Government Code Section 54957(b).
   c. Administer the CAE's annual salary adjustment using the Boards' established compensation structure.

B. Professional Service Provider Activity

The Audit Committee is responsible for the oversight of all work performed by professional service providers (Service Providers) for audits, reviews, or investigations, including the audit of LACERA's financial statements.

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1. Approve the appointment and compensation of the Financial Auditor, hired to perform an independent audit of LACERA's financial statements. Oversee the workof the Financial Auditor, including review of the Financial Auditor's proposed audit scope and approach, as well as coordination with Internal Audit and Management.

2. Approve the appointment and compensation of other Professional Service Providers, hired to perform non-financial statement audits, reviews or consulting, subject to limitations due to confidentiality, legal standards, and/or where approval will clearly impair the purpose or methods of the audit.

3. Review the Professional Service Providers, including the Financial Auditor, and Management the results of the work performed, any findings and recommendations, Management's responses, and actions taken to implement the audit recommendations.
4. Resolve any significant disagreements regarding risks, findings and/or compensation between management and Professional Service Providers

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C. Financial Reporting Process

The Audit Committee is responsible for oversight of the independent audit of LACERA's financial statements, including but not limited to overseeing the resolution of audit findings in areas such as internal control, legal, regulatory compliance, and ethics.

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1. Review significant accounting and reporting issues, including complex or unusual transactions and highly judgmental areas, recent professional and regulatory pronouncements, and understand their impact on the financial statements.

2. Review with Management and the Financial Auditors the results of the audit, including any difficulties encountered.

3. Review the annual financial statements, consider whether they are complete, consistent with information known to Committee members, and reflect appropriate accounting principles.

4. Review with Management and the Financial Auditors all matters required to be communicated to the Committee under *Generally Accepted Auditing Standards*.

D. Values and Ethics

1. Review and assess LACERA's Code of Ethical Conduct established by the Boards and Management.

2. Annually, review Management's process for communicating LACERA's Code of Ethical Conduct to Trustees, Management, and staff, and for monitoring compliance therewith.

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3. Review reports received relating to conflicts of interest and ethics issues, and if appropriate, make a recommendation to the Boards.

E. Organizational Governance

To obtain reasonable assurance with respect to LACERA's governance process, the Audit Committee will review and provide advice on the governance process established and maintained, and the procedures in place to ensure they are operating as intended.

1. Risk Management
   a. Annually review LACERA's risk profile.
   b. Obtain from the CAE an annual report on Management's implementation and maintenance of an appropriate enterprise-wide risk management process. Provide advice on the risk management processes established and maintained, and the procedures in place to ensure that they are operating as intended.
   c. Provide oversight on significant risk exposures and control issues, including fraud risks, governance issues, and other matters needed or requested by Management and the Boards.
2. Fraud
   a. Oversee Management's arrangements for the prevention and detection of fraud, including ensuring adequate time is spent discussing and raising awareness about fraud and the Hotline.
   b. Review a summary of Hotline reports, and if appropriate make a recommendation to the Boards.
3. System of Internal Controls
   a. Consider the effectiveness of LACERA's internal control system, including information technology security and control, as well as all other aspects of LACERA's operations.
   b. Understand the scope of Internal and External Auditors' review of internal control over financial reporting, and obtain reports on significant findings and recommendations, together with Management's responses.
   c. Review and provide advice on control of LACERA as a whole and its individual divisions.
4. System of Compliance
   a. Annually, review the effectiveness of Management's system of compliance with laws, regulations, policies, and procedures that are business critical.

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b. As needed, review the observations and findings of any examinations by regulatory agencies.

c. Obtain regular updates from Management and LACERA's Legal Office regarding compliance matters.

d. At least annually, review reported activity to ensure issues of fraud, noncompliance, and/or inappropriate activities are being addressed.

F. Audit Committee and Internal Audit Budget

LACERA will provide appropriate funding, as determined by the Audit Committee, for compensation to the Financial Auditor, to any Professional Service Provider that the Audit Committee chooses to engage, and for payment of ordinary administrative expenses of the Audit Committee that are necessary or appropriate in carrying out its duties.

Commented [CL8]: New section proposed by Audit Committee Chair in his memo to address budget.

G. Other Responsibilities

1. Report to the Boards as needed about the Audit Committee's activities, issues, and related recommendations.

2. Provide an open avenue of communication between Internal Audit, all Professional Service Providers, including the Financial Auditor, Management, and the Boards.

3. Perform other activities related to this Charter as requested by the Boards.

4. Review and assess the adequacy of the Committee's Charter at least every three years, requesting the Boards' approval for proposed changes.

VIII. APPROVAL

This Charter was reviewed by the Audit Committee on April 23, 2021 and approved by the Board of Investments and Board of Retirement on May XX, 2021. This Charter is thereby effective May XX, 16, 2021 and is hereby signed by the following persons who have authority and responsibilities under this Charter.

______________________	5/XX/2021
Joseph Kelly *Chair, Audit Committee*	**Date**
______________________	5/XX/2021
Keith Knox *Chair, Board of Investments*	**Date**
______________________	5/XX/2021
Alan Bernstein *Chair, Board of Retirement*	**Date**

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ATTACHMENT E

Los Angeles County Employees Retirement Association

Audit Committee Charter

April 2021

2021

AUDIT COMMITTEE CHARTER

Table of Contents

AUDIT COMMITTEE CHARTER

I. CHARTER

This Charter establishes the authority and responsibilities of the Audit Committee, as assigned by Los Angeles County Employees Retirement Association's (LACERA) Board of Retirement and Board of Investments (Boards). The Audit Committee Charter is a living document and should be reviewed at least every three years.

II. PURPOSE AND ASSIGNED FIDUCIARY OVERSIGHT DUTIES

In November 2003, LACERA's Boards established the LACERA Audit Committee.

The purpose of the Audit Committee is to assist the Boards in fulfilling their fiduciary oversight duties for the:

- **A.** Internal Audit Activity
- **B.** Professional Service Provider Activity
- **C.** Financial Reporting Process
- **D.** Values and Ethics, and
- **E.** Organizational Governance
- **F.** Audit Committee and Internal Audit Budget

III. PRINCIPLES OF THE AUDIT COMMITTEE

The Audit Committee will conduct itself in accordance with LACERA's Code of Ethical Conduct and the following core principles from the Institute of Internal Auditors' (IIA) Code of Ethics. The Audit Committee expects the Boards, Management, and staff will also adhere to these requirements.

Integrity – The Audit Committee Members will perform their work with honesty, diligence, and responsibility. The Audit Committee expects and will encourage transparency when fulfilling its duties. Communications between Committee Members, Management, staff, and/or Professional Service Providers will be open, direct, and complete. Subject to applicable laws and organizational limitations, Internal Audit will regularly provide the Audit Committee with updates on audit and consulting projects completed and related findings and follow-up.

Independence & Objectivity - The Audit Committee will perform its responsibilities in an independent manner and in compliance with fiduciary duty without exception. Audit Committee Members will disclose any conflicts of interest (actual or perceived) to the Committee.

Confidentiality – The Audit Committee Members will be prudent in the use and protection of information acquired during the course of its duties.

Competency - Audit Committee Members will receive formal orientation training on the purpose and mandate of the Committee and LACERA's objectives. Audit Committee Members are obligated to prepare for and participate in Committee meetings.

Professional Standards - The Audit Committee will ensure all related work will be handled with the highest professional standards consistent with auditing standards of practice and industry guidelines.

IV. AUTHORITY

The Audit Committee will have unrestricted access to Management and staff, and anyrelevant information it considers necessary to discharge its duties. All employees are directed to cooperate with the Committee and its requests. If access to requested information is denied due to legal or confidentiality reasons, the Audit Committee and/or CAE will follow a prescribed, Board approved mechanism for resolution of the matter.

The Audit Committee has the authority to conduct or authorize investigations into any matters within its scope of duties, including engaging independent counsel and/or other advisors it deems necessary.

V. AUDIT COMMITTEE COMPOSITION AND CONSULTANT

The Audit Committee will consist of seven members: three elected annually from each Board and the ex-officio member of both Boards, the Los Angeles County Treasurer. If anyelected Audit Committee member leaves Board service or resigns from the Audit Committeeprior to the completion of his or her term, the Board of the departing member, will elect a new Audit Committee member at the next regularly scheduled Board meeting.
The Committee shall have the authority to approve the hiring of the Audit Committee Consultant as an advisor through a Request for Proposal process. The Audit Committee Consultant will be designated as the audit technical and financial expert, to advise the Committee on audit and financial matters. The Audit Committee Consultant's contract will be for three years.

At the first Committee meeting of each calendar year, the Committee shall elect a Chair,Vice Chair and Secretary, each to serve for a term of one year or until his or her successor is duly elected and qualified, whichever is less. In the event of a vacancy in the office of Chair, the Vice Chair shall immediately assume the office of Chair for the remainder of the term. Inthe event of a vacancy in the office of Vice Chair or Secretary, the Committee shall elect oneof its members to fill such vacancy for the remainder of the term, at its next regular meeting.

VI. AUDIT COMMITTEE MEETINGS

The Audit Committee will conduct regular meetings at least four times per year, withauthority to convene additional meetings, as circumstances require. The time frame betweenAudit Committee meetings should not exceed four months.

All Committee Members are expected to attend each meeting.

All meetings of the Audit Committee shall be as noticed as joint meetings with the Board of Retirement and Board of Investments to allow for participation of all trustees in open and closed session Audit Committee discussions, provided that non-committee trustees may not make or second motions or vote and provided further that closed sessions to discuss the CAE's annual assessment and the Committee's recommendation to the Boards regarding the appointment, discipline, dismissal, and/or removal of the CAE shall be noticed for attendance by Committee members only.

Regular meeting notices and agendas will be posted at least 72 hours in advance of the regular meetings and will be made available to the public in accordance with the Ralph M. Brown Act (Government Code Sections 54950, et seq.). Public documents referred to in the agenda will be made available for review at the office of the staff secretary to the Committee and also published on the LACERA website, lacera.com. The Committee will invite members of Management, Internal Auditors, Financial Auditors, all other Professional Service Providers, and/or others to attend meetings and provide pertinentinformation, as necessary.

Special meetings of the Committee may be called in the manner provided by Government Code Section 54956(a). The Committee will have such other powers as provided in the Brown Act.

Robert's Rules of Order, except as otherwise provided herein, shall guide the Committee in its proceedings; however, the Chair of the Committee shall have the same rights to vote and participate in discussions as any other member of the Committee without relinquishing the chair. The order of business shall be as determined by formal action of the Committee. Four members of the seven-member Audit Committee, constitute a quorum.

The Secretary of the Committee shall cause to be recorded in the minutes the time and place of each meeting of the Committee, the names of the members present, all official acts of the Committee, the votes given by members except when the action is unanimous, and when requested by a member, that member's dissent or approval with his or her reasons, and shall cause the minutes to be written forthwith and presented for approval at the next regular meeting.

VII. RESPONSIBILITIES

A. Internal Audit Activity

1. Internal Audit Strategy and Annual Plan
    a. Review and provide input on Internal Audit's annual risk assessment.
    b. Review and approve Internal Audit's Annual Audit Plan (Plan) and resource plan, make recommendations concerning audit projects.
    c. Review and monitor Internal Audit's activity relative to its Plan. Review and approve all major changes to the Plan.

2. Internal Audit Engagement & Follow-Up
    a. Review and discuss engagement reports to take the following action(s):
        i. accept and file report,
        ii. instruct staff to forward report to Boards or Committees,
        iii. make recommendations to the Boards or Committees regarding actions as may be required based on audit findings and/or,
        iv. provide further instruction to staff.
    b. Monitor Internal Audit's recommendations to ensure Management has adequately and timely addressed the risk(s) identified, either through implementing a new policy, procedure, or process, or accepting the associated risk.
    c. Inquire whether any evidence of fraud has been identified during internal or external audit engagements, and evaluate what additional actions, if any, should be taken.
    d. Inquire whether any audit or non-audit engagements have been completed but not reported to the Audit Committee; if so, inquire whether any matters of significance arose from such work.
    e. Review and advise Management and the Boards on the results of any special investigations.

3. Standards Conformance
   a. Approve the Internal Audit Charter.
   b. Ensure the Internal Audit Division conforms with the IIA's International Standards for the Professional Practice of Internal Audit, particularly the independence of Internal Audit and its organizational structure.
   c. Ensure the Internal Audit Division has a quality assurance and improvement program (QAIP), and that the results of these periodic assessments are presented to the Audit Committee.
   d. Ensure the Internal Audit Division has an external quality assurance review every five years. Review the results of the external quality assurance review and monitor the implementation of related recommendations.

      Advise the Boards about any recommendations for the continuous improvement of the internal audit activity.

4. Chief Audit Executive (CAE)

   Since the CAE reports to the Chief Executive Officer (CEO) for administrative purposes, but to the Audit Committee for functional purposes, the Audit Committee will be responsible for the following:
   a. Make recommendations to both Boards regarding the appointment, discipline, dismissal, and/or removal of the CAE, which will be addressed by the Boards in a joint meeting. Both Boards will make the final decisions as to the appointment, discipline, dismissal, and/or removal of the CAE. The CEO has authority to administer minor discipline, which is limited to counseling memos and written warnings, with notice of such discipline to be provided to the Committee and the Boards at their next meetings. Consideration by the Boards and the Committee concerning the appointment, discipline, dismissal, and/ or removal of the CAE will be made in executive session under Government Code Section 54957(b).
   b. Perform the CAE's annual assessment with qualitative input from the CAE and CEO. The Committee's discussion regarding the CAE's annual performance evaluation will be made in executive session under Government Code Section 54957(b).
   c. Administer the CAE's annual salary adjustment using the Boards' established compensation structure.

B. Professional Service Provider Activity

The Audit Committee is responsible for the oversight of all work performed by professional service providers (Service Providers) for audits, reviews, or investigations, including the audit of LACERA's financial statements.

1. Approve the appointment and compensation of the Financial Auditor, hired to perform an independent audit of LACERA's financial statements. Oversee the workof the Financial Auditor, including review of the Financial Auditor's proposed audit scope and approach, as well as coordination with Internal Audit and Management.

2. Approve the appointment and compensation of other Professional Service Providers, hired to perform non-financial statement audits, reviews or consulting, subject to limitations due to confidentiality, legal standards, and/or where approval will clearly impair the purpose or methods of the audit.

3. Review the Professional Service Providers, including the Financial Auditor, and Management the results of the work performed, any findings and recommendations, Management's responses, and actions taken to implement the audit recommendations.
4. Resolve any significant disagreements regarding risks, findings and/or compensation between management and Professional Service Providers

C. Financial Reporting Process

The Audit Committee is responsible for oversight of the independent audit of LACERA's financial statements, including but not limited to overseeing the resolution of audit findings in areas such as internal control, legal, regulatory compliance, and ethics.

1. Review significant accounting and reporting issues, including complex or unusual transactions and highly judgmental areas, recent professional and regulatory pronouncements, and understand their impact on the financial statements.

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______________________	5/XX/2021
Joseph Kelly	**Date**
Chair, Audit Committee	
______________________	5/XX/2021
Keith Knox	**Date**
Chair, Board of Investments	
______________________	5/XX/2021
Alan Bernstein	**Date**
Chair, Board of Retirement	

L///CERA

June 28, 2021

TO: Trustees – Board of Investments

FROM: Jonathan Grabel
Chief Investment Officer

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **Board of Investments Offsite Planning Update**

This memo furthers recent discussions with the Board of Investments ("BOI") Chair and Vice Chair about planning for a 2021 BOI offsite meeting.

Logistics

A BOI offsite meeting is tentatively scheduled for October 13, 2021. LACERA is carefully monitoring safety and health guidelines and prevailing circumstances prior to finalizing logistics. We currently anticipate that the meeting will be held in person at a location to be determined. Per discussions with the BOI leadership, an in-person meeting may facilitate productive interaction among Trustees, as wellas Trustees and staff.

LACERA will also ensure all aspects of the offsite meeting comply with the Ralph M. Brown Act. The Governor of California's March 17, 2020, executive order, as modified by the order issued on June 21, 2021, permitting public agencies to convene virtually, is currently slated to remain in effect only until September 30, 2021. LACERA will monitor any further developments and adhere with all public meeting provisions in place at the time of the meeting.

Revisiting and Refining Investments' Strategic Initiatives and Work Plan

We anticipate that the offsite will afford the opportunity to revisit, update, and refine the BOI strategic initiatives and work plan. After constructive and thoughtful discussion at the BOI's 2018 offsite meeting, LACERA organized several strategic initiatives and regularly updated annual work plans starting in 2018 under the theme of evolving LACERA "from an allocator to an investor." These initiatives aimed to implement LACERA's strategic asset allocation with careful consideration to several pillars of activity:

- Enhancing LACERA's operational effectiveness;
- Optimizing our investment model;
- Maximizing our stewardship and ownership rights;
- Strengthening the fund's influence on fees and cost of capital;
- Implementing LACERA's comprehensive "Towards Inclusion, Diversity, and Equity" initiative throughout the investment program (added through further planning in 2021)

Each of the above pillars was informed and developed through BOI consultations, including survey feedback from Trustees. The BOI has received and discussed yearly updates at each subsequent January BOI meeting, including refreshed near and longer-term objectives and projects under each pillar.

We envision reviewing progress of the strategic initiatives and discussing options to refine forward-looking goals and aspirations. Several developments have occurred in the last three years since LACERA initially put the strategic initiatives and work plan in motion. First, progress has been made in each of the pillars. The offsite presents an opportunity to take a holistic view of longer-term trend lines and achievements against stated objectives to deliberate any refinement of objectives or course corrections. Second, the BOI approved a new strategic asset allocation in May 2021, presenting the opportunity to revisit how the initiatives are positioned to advance LACERA's goal of effectively implementing LACERA's strategic asset allocation. And lastly, LACERA's operational experience implementing our strategic initiatives during the COVID-19 pandemic allowed real-world stress testing which provided insights into how best to refine initiatives and work plans going forward.

Theme for 2021 BOI Off-Site Meeting and Trustee Input

In the spirit of always striving to aim higher, the overarching theme for the offsite meeting is **"Allocator to *Best-In-Class* Investor: *Further* Positioning LACERA as a Best-In-Class Investor."** LACERA's consultants and investment team plan to review the "Allocator to Investor" strategic initiatives per above, and survey Trustees on topics for an updated strategic plan. Surveys will be conducted in advance of the offsite. The feedback from the discussions will be used to enhance the existing strategic initiatives and work plans, to be formally presented to the BOI for approval at a subsequent meeting. The findings from this exercise may be used by the BOI as inputs for the anticipated, broader LACERA strategic planning efforts.

Tentative Working Agenda

For purposes of planning the agenda, we have divided the day into two sessions:

The first session will include a Committee/BOI meeting.

The second session will include several components:

- Review of the BOI strategic projects (initiated in 2018 and updated annually) to highlight what has been accomplished, prospective and proposed modifications, and areas still in development.

- Review and discuss Trustee survey results. Trustees will provide input and feedback on current and future strategic initiatives, implementation alternatives, and perspectives on key options along a series of continuums.

- Consultant-led discussions on specific issues to provide market context and help inform Trustees' discussions.

Trustee Surveys and Planning

The investment team will distribute a survey to Trustees by the end of July covering a range of topics. Potential survey themes are provided in the **Attachment**. The survey will also include additional space for Trustees to provide free-form input. We look forward to your responses.

We are enthused about convening this year's offsite meeting and effectively enhancing strategies to collectively position LACERA as a best-in-class investor.

Attachment

ATTACHMENT

2021 BOI Off-site Planning

Potential Topics for Trustee Survey:

1. Progress towards goal of moving "from allocator to investor" – how far have we come?
2. Board materials – quality and volume
3. Investment Beliefs 5 year later – should we revisit and refine?
4. Peer group – as we aspire to be "best in class," whom do Trustees perceive as LACERA's peers?
5. Internal management – should we accelerate or otherwise adjust the timetable?
6. Co-investments programs
7. Stewardship and degree of advocacy/fund activism
8. LACERA's public profile
9. Climate investment strategies – how assertive should LACERA be/price setting vs price taking?
10. Geographic exposure – home country bias versus global coverage
11. COVID ramifications on investment process and exposures
12. Other – based on Trustee input

June 24, 2021

TO: Trustees - Board of Investments

FROM: Santos H. Kreimann SHK
Chief Executive Officer

Ted Granger TG
Interim Chief Financial Officer

FOR: Board of Investments Meeting on July 14, 2021

SUBJECT: **2021 ACTUARIAL RISK ASSESSMENT REPORT**

Overview

LACERA requested that Milliman prepare a "Risk Assessment" report (in accordance with Actuarial Standard of Practice (ASOP) No. 51) and present it to the Board of Investments Trustees. The report has been prepared for a second sequential year, and includes additional information regarding the consulting actuary's risk assessment analysis and provides an opportunity for the Board to discuss and evaluate these actuarial concepts outside of a routine report presentation. This mid-year discussion focuses on key actuarial concepts and serves as an additional educational opportunity in which the consulting actuary will also briefly review new and upcoming ASOPs.

The 2021 Actuarial Risk Assessment Report (2021 Risk Assessment) is included as Attachment A. Milliman has also prepared a presentation based on this report (see Milliman's Presentations Slides, Attachment B). The report and analysis are based on the work completed for the most recent June 30, 2020 Actuarial Valuation of Retirement Benefits (2020 Valuation) report, presented to the Board of Investments in December 2020. The 2020 Valuation included a summary of significant ASOP 51 elements and discussion, beginning on Page 44 (see Attachment C).

Actuarial Standards

The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

In September 2017, the ASB adopted Actuarial Standard of Practice No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions* (ASOP 51). This ASOP provides guidance to actuaries when performing certain actuarial services with respect to measuring obligations under a defined benefit pension plan (plan) and calculating actuarially determined contributions for such plans, with regard to the assessment and disclosure of the risk that actual future measurements may differ significantly from expected future measurements.

ASOP 51 became effective for actuarial work products with a measurement date on or after November 1, 2018 and applies to actuaries when performing a funding valuation of a pension plan.

The 2021 Risk Assessment and presentation provide various risk scenarios that may impact future expected measurements such as pension obligations, investment returns, actuarially determined contributions, and the plan's funded status. Milliman links these risks to the actuarial assumptions used in calculating these future expected measurements provided in their 2020 Valuation report. Milliman also identifies controls in place to mitigate these risks and the limitations of these mitigating controls. Their analysis should provide the Board with an additional perspective that could be referenced in the future, when contemplating decisions on investment matters such as asset allocation and when setting actuarial assumptions.

Future Actuarial Reports

The table below provides a reminder of future actuarial reports for the Retirement Benefits Plan:

Future Reports	Fiscal Year	Board Meeting (estimated)
2021 Actuarial Valuation (annual)	June 30, 2021	December 2021
2022 Risk Assessment (annual)	June 30, 2021	July 2022
2022 Experience and Assumption Study (every three years)	June 30, 2022	October 2022

LACERA's consulting actuaries, Nick Collier, Mark Olleman, and Craig Glyde with Milliman, will be attending the July 14, 2021 meeting to discuss the 2021 Actuarial Risk Assessment report results and answer any questions from the Board. Management encourages active Board discussion of the risk information contained in the report.

Attachments

A. Milliman's 2021 Actuarial Risk Assessment Report
B. Milliman's July 14, 2021 Presentation Slides
C. June 30, 2020 Actuarial Valuation of Retirement Benefits Report

SHK:tg
BOI Memo-2020 Risk Assessment (ASOP 51) – Final

c: Steven P. Rice, LACERA
Johanna Fontenot, LACERA
Jonathan Grabel, LACERA
Richard Bendall, LACERA
Fesia Davenport, CEO, Los Angeles County

Los Angeles County Employees Retirement Association

Risk Assessment

Based on June 30, 2020 Actuarial Valuation of Retirement Benefits

Prepared by:

Mark Olleman, FSA, EA, MAAA
Consulting Actuary

Nick Collier, ASA, EA, MAAA
Consulting Actuary

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

Milliman, Inc.
1301 Fifth Avenue, Suite 3800
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Issued June 28, 2021

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June 28, 2021

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 Trustees of the Board:

As requested, we have performed a risk assessment based on the actuarial valuation of retirement benefits for the Los Angeles County Employees Retirement Association (LACERA) as of June 30, 2020. The purpose of this report is to communicate key risk factors that could affect LACERA's future funding.

We have provided financial information showing the estimated hypothetical impact of various modifications to the valuation assumptions. We believe the valuation assumptions provide a reasonable estimate of anticipated experience affecting LACERA. However, as discussed in this report, the emerging costs will vary from those presented in the valuation 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.

In preparing the valuation this report is based upon, 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, 2020 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 risk assessment 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 calculations might need to be revised.

The valuation that this risk assessment is based upon provides an estimate of the LACERA'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. We have shown the results based on a variety of alternative assumptions and scenarios in this report. These alternatives are not intended to be inclusive of all the possible outcomes. The valuation results were developed using models intended for valuations that use standard actuarial techniques.

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 respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,

Mark C Olleman

Mark Olleman, FSA, EA, MAAA
Consulting Actuary

Nick Collier

Nick Collier, ASA, EA, MAAA
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Craig Glyde

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

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1. Report Overview

Introduction

The results of any actuarial valuation are based on one set of assumptions. Although we believe the current assumptions used in LACERA's June 30, 2020 actuarial valuation provide a reasonable estimate of future expectations as of that date, it is almost certain that future experience will differ, to some extent, from the assumptions. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the plan, or of the plan's members.

Actuarial Standard of Practice No. 51 (ASOP 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the plan, and in some cases to the plan's participants.
- Assess the risks identified as significant to the plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the plan's risks.

The June 30, 2020 actuarial valuation includes a Risk Discussion section – section 9 beginning on page 44 - that provides a general discussion of these risks. This report provides a more detailed discussion of the potential risks and a quantitative analysis of the potential impact of selected risk factors.

Addressing Risks

This report is designed to identify and assess risks. Once these risks are understood, the important issue for LACERA is how these risks are addressed and potentially reduced. LACERA already has procedures in place to mitigate key aspects of these risks, as summarized below.

- **Assets:** LACERA regularly performs asset allocation studies which are integrated with LACERA's funding in order to set a target allocation that maximizes return at a level of risk that is acceptable to the system.
- **Liabilities:** LACERA has regular investigations of experience performed to monitor and set the assumptions and methods used to calculate the liabilities.
- **Funding:** LACERA strives to balance projected funding levels with reasonable and stable employer contribution rates. In particular, to strengthen long-term funding LACERA recently reduced the amortization period to pay off new unfunded amounts to 20 years. To help stabilize year-to-year changes in the employer contribution rate, a five-year asset smoothing period is used.

As discussed above, LACERA has several procedures in place to mitigate risk; however, the effectiveness of these techniques is limited. There will always be a trade-off between projected funding levels and low employer contribution rates, particularly for a mature plan such as LACERA. The risks inherent in these limitations are discussed further in this report.

Note that when action is taken to reduce risk, there is almost always a cost, sometimes referred to as the "cost of certainty." For example, reductions in investment risk tend to reduce expected returns, which increases expected costs. These additional costs will generally be in the form of increased employer contributions. LACERA should regularly evaluate the current level of risk and whether more resources should be devoted to reducing risk.

Report Outline

The remainder of the report is divided into four sections.

Section 2 (Identification of Risks) This section identifies and discusses the key risks to LACERA's future funding. In our opinion the key risk factors are investment returns, payroll increases, compensation increases, and mortality, with investment returns being the biggest risk. Looking at the sources of change in the Unfunded Actuarial Accrued Liability over the past 20 valuations, the single biggest source of annual change in most years is the return on investments being either greater than or less than the assumption.

Section 3 (Maturity Measures) Like other public retirement systems, LACERA continues to mature. As pension plans mature, they become more sensitive to certain risks. In this section, the maturity of LACERA is examined in the context of the number of active members to retirees, the projected cash flows, and volatility ratios.

Section 4 (Historical Measures) One way to assess future risks is to look at historical measurements. In this section, we review how the employer contribution rate and Funded Ratio have changed over the last 20 to 30 years. We also look at past investment returns for LACERA as they have been a key factor in the other two measurements.

Section 5 (Assessment of Risks) This section analyzes the potential impact of key risk factors on future employer contribution rates and Funded Ratios, with the emphasis on investment returns. For example, in the subsection titled Historical Returns, it is shown that if the returns from the 1990s were to recur, the employer contribution rate is projected to decrease to 0% of pay; whereas, if the returns from the 2000s were to recur, the employer contribution rate is projected to exceed 40% of pay. Note that member contribution rates are not included in this analysis, as they are not materially impacted by future experience, only assumption changes.

2. Identification of Risks

Factors Affecting Future Results

There are a number of factors that will affect future valuation results. To the extent actual experience for these factors varies from the assumptions, this will likely cause either increases or decreases in the plan's future funding level and the employer contribution rate.

Over the past 18 months or so, the COVID-19 pandemic has had a significant impact on people, business operations, financial markets, and many aspects of operating a retirement system such as LACERA. We know that over that period, amongst other things, financial markets have experienced significant volatility, retirement systems have generally seen higher mortality than otherwise expected, and employee turnover and retirement in the public sector has generally been lower than otherwise expected. These factors, and more, have had a short-term impact on retirement systems. Although, it is likely there will be some residual impact, we are not expecting a significant change in the risks faced by LACERA and other retirement systems in the future due to the pandemic.

The factors that can have the most significant impact on LACERA's valuation results are:

- Investment risk

To the extent that actual investment returns differ from the assumed investment return, the plan's future assets, employer contribution rate, and funded status may differ significantly from those presented in the valuation. There are a myriad of factors that can influence investment markets. In addition to the risk of variances in the investment markets, leverage and illiquidity of investments may magnify investment gains or losses for LACERA. Further, risk may be increased if restrictions are put on available investments that impact future returns. These types of risks are outside the scope of our analysis, but we have quantified the potential overall impact of variance in past and future investment returns below and in Section 5, Assessment of Risks.

- Compensation risk

Individual member retirement benefits are linked to the member's compensation. As such, assumptions need to be made as to a member's future compensation increases. Higher future compensation increases will generally result in larger retirement benefits, liabilities, employer contribution rates, and a lower funded status. Conversely, lower compensation increases than assumed will generally result in smaller retirement benefits, liabilities, employer contribution rates, and a higher funded status.

- Payroll risk

In the valuation, an assumption is made for the overall rate of payroll growth of LACERA members from year-to-year. To the extent that the overall rate of payroll growth is greater than assumed, the employer contribution rate may decrease since the Unfunded Actuarial Accrued Liability (UAAL) will be amortized over a larger payroll base. The opposite will occur if the overall rate of payroll growth is lower than assumed.

For example, if Los Angeles County were to reduce its payroll, an offsetting increase in the UAAL contribution percentage rate would be necessary to maintain the contribution level needed by LACERA. Note that the impact of payroll increases different than assumed will often have some offsetting impact of individual compensation increases different than assumed.

- Longevity and other demographic risks

The liabilities reported in the valuation were calculated by assuming that members will follow specific patterns of demographic experience (e.g., mortality, retirement, termination, disability) as described in Appendix A of the valuation report. To the extent that actual demographic experience is different than is assumed to occur, future liabilities, employer contribution rates, and funded status may differ from that presented in the valuation.

Higher mortality than expected will generally have a positive financial impact on LACERA's funding, and lower mortality than expected will have a negative financial impact. We expect when we receive the June 30, 2021 valuation data, we will observe higher rates of mortality over the previous 12 months among retirees and beneficiaries than expected by the assumptions. To the extent that the higher mortality occurs among older retirees with lower than average benefits, the financial impact may not be significant since the liability for those members is generally relatively low. It is unclear at this time whether future mortality will revert to assumed levels, or will be higher or lower as a result of the pandemic.

An example of mortality changes which could pose a financial risk to LACERA would be a cure for a broad range of cancers, which could reduce mortality over an extended period of time and therefore materially increase future benefit payments.

- Contribution risk

Contribution risk is defined in ASOP 51 as the potential of actual future contributions deviating from expected future contributions. For example, for some retirement systems in the US, a significant source of their underfunding has been the plan sponsor not making the actuarially determined contribution. If the County does not make its full contribution in the future, it could present a significant risk to LACERA's funding. We have assumed for purposes of this analysis that LA County will continue to contribute at the actuarially determined rate in the future. It should be noted that the County has consistently made its actuarially determined contribution in the past, and there are legal requirements specified in the 1937 Act that govern future contributions. However, there are several ways contributions are being pushed off into the future: 1) the STAR Reserve is included in assets, but STAR liabilities are not; 2) employer contribution increases due to assumption changes have been phased in instead of recognized immediately; and 3) the County has a history of reflecting contribution rate decreases as soon as possible (July) and deferring increases as late as possible (September). We do not view any of these as a significant risk to LACERA, but lower contributions in the short term means higher contributions will ultimately be needed. For example, the phase-in of the employer contribution rate resulted in a smaller short-term increase, but the ultimate increase in the employer contribution rate effective with the fiscal year beginning in 2022 is projected to be 0.22% of pay higher for the following 18 years.

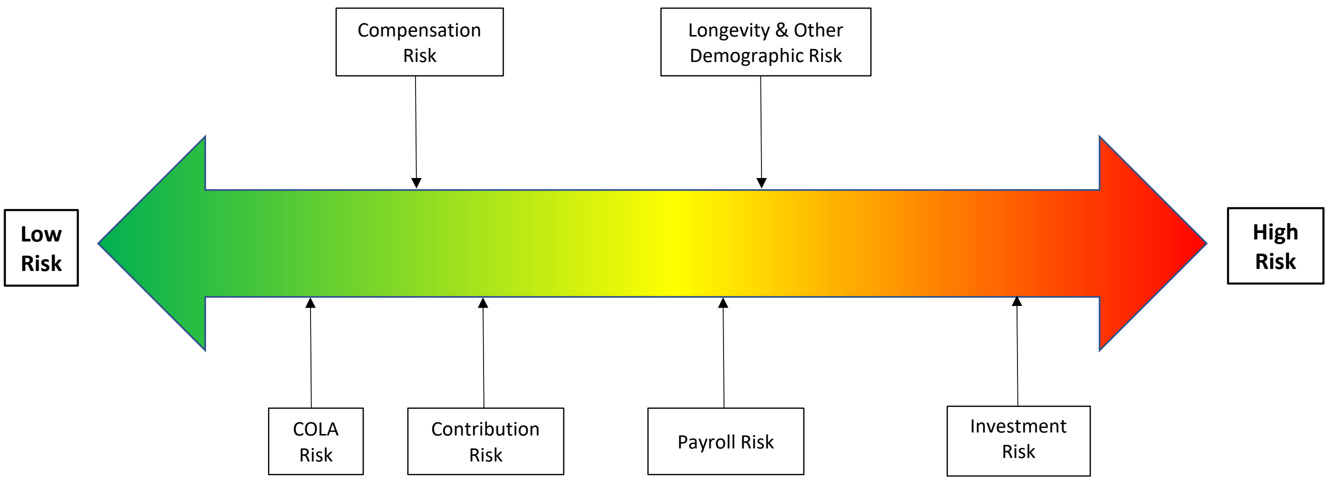
- COLA risk

COLA risk is the potential of actual future cost-of-living adjustments deviating from the assumed increases. LACERA's funding could be adversely impacted if greater-than-assumed inflation causes future COLAs to exceed the assumption. For LACERA, COLAs are capped at either 2% or 3% based on the respective plan. As the assumed COLAs for Plans B-E and G are set equal to the cap, there is no direct risk of the actual COLA exceeding the assumption. For Plan A, there is a small risk as the assumed COLA is 2.75% and the cap is 3.00%, so the actual COLA could potentially exceed the assumption by 0.25%. As Plan A retirees account for less than half of the total retiree liability and this proportion is projected to decline in the future, we believe the direct COLA risk is small. There is also an indirect COLA risk related to the STAR COLA Reserve. If future inflation exceeds the cap amount, this would lead to the erosion of retirees' purchasing power and an increase in COLA bank amounts that could exceed 20% which would exceed the threshold for additional STAR COLA benefits. If STAR COLAs are granted, this would decrease the STAR COLA reserve and increase the UAAL.

The assumptions are reviewed in detail during the triennial Investigation of Experience study and are also reviewed annually during the valuation process. Changes in assumptions are generally recommended as part of the triennial Investigation of Experience if actual experience has been materially different than assumed or forecasts have changed materially. Additionally, changes may be recommended and discussed at each valuation if they are deemed to be appropriate at that time.

Relative Magnitude of Each Risk

The prior discussion identified the key risks to LACERA's funding. Which risk poses the biggest threat? The analysis at the end of this section provides a historical analysis of how these risks have affected LACERA's funded status. Which of these factors will have the greatest impact on LACERA's future funding is unknown; however, based on the analysis shown in this report and our experience working with public sector retirement systems, we have provided the following ranking of the risks from the greatest risk to the least risk. This is also illustrated in the scale below. Note that we considered both the likelihood of a negative impact as well as the potential magnitude. For example, if long-term inflation is expected to average the assumption of 2.75%, there is a 50% probability that the Plan A COLA will exceed the assumption, which will result in future actuarial losses, so the probability of this occurring is fairly high; however, the potential magnitude is low due to the 3% Plan A COLA cap, so we view the associated COLA risk to be low.



Note: The above graphic is based on Milliman's opinion and is not numerically based.

Risk Factor	Commentary
Investment risk	Historically investment performance has had the greatest year-to-year impact on LACERA's Funded Ratio and the employer contribution rate. We believe it is likely that this will continue to be the case in the future.
Longevity and other demographic risks	Of the demographic risks, mortality probably has the greatest potential to impact LACERA's funding. The current valuation assumption includes a provision for mortality improvement, which allows for longevity improvements similar to historical trends; however, if there were a major medical breakthrough, such as a cure for a broad range of cancers, this could significantly increase life expectancies beyond current expectations and materially impact liabilities.
Payroll risk	A decline in payroll, or a long-term increase less than the 3.25% assumption, could result in a significant increase in the employer contribution rate as a percentage of payroll. However, provided the calculated employer contribution rate is paid, a decline in payroll should not, by itself, negatively impact the Funded Ratio.
Contribution risk	Our understanding is that there are certain legal requirements that make it unlikely the employers would not pay the actuarially calculated contribution rate; however, if LACERA were not to receive the full contribution amount, this could become a significant risk.
Compensation risk	Compensation increases larger than assumed will result in larger retirement benefits, and therefore liabilities than currently projected. Conversely, smaller increases than assumed will result in smaller liabilities. The impact on the employer contribution rate of larger or smaller than assumed compensation increases will generally be offset somewhat by changes in payroll (as discussed above) since these two risks generally occur in tandem. We note that generally large compensation increases occur when there is either high inflation or a strong economy. Either case is likely to be associated with better-than-assumed investment returns (although in the case of higher inflation, it may take a while for higher returns to materialize), which should mitigate the liability increase due to the compensation increase.
COLA risk	As previously noted, the potential for significant actuarial losses for COLAs greater than the assumption are limited due to the cap on COLAs. Even if a significant increase in inflation were to occur and STAR benefits were used, the STAR Reserve is only about 1% of total assets and this proportion is projected to decline as the STAR Reserve is not credited interest under current policy, so the potential negative impact is relatively small.

How We Got Here: Analysis of Changes in Unfunded Actuarial Accrued Liability

The portion allocated to service already rendered or accrued is called the Actuarial Accrued Liability (AAL). The difference between the AAL and the Valuation Assets is called the UAAL. If a UAAL exists, it usually results from prior years' benefit or assumption changes and the net effect of accumulated gains and losses. If the employer had always contributed the current Normal Cost, and if there were no prior benefit or assumption changes, and if actual experience exactly matched the actuarial assumptions, then the present value of all future Normal Cost contributions would be sufficient to fund all benefits and there would be no UAAL.

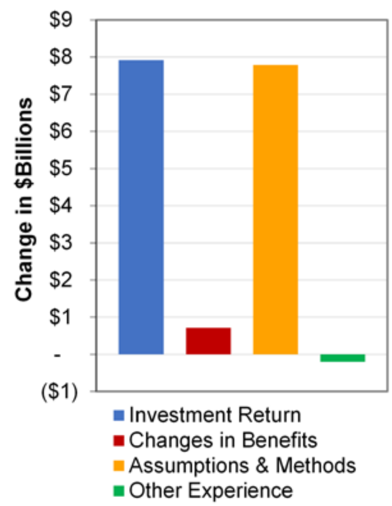
The UAAL, at any date after establishment of a pension plan, is affected by any actuarial gains (decreases in UAAL) or losses (increases in UAAL) arising when the actual experience of the pension plan varies from the experience anticipated by the actuarial assumptions. To the extent actual experience, as it develops, differs from that expected according to the assumptions used, so also will the emerging costs differ from the estimated costs. Additionally, changes in assumptions or benefit provisions can also increase or decrease the UAAL.

Over the last 20 years, the UAAL has increased and decreased from year to year due to a number of factors:

- Investment Returns: The average actual return on market assets for the 20-year period was 5.9% (net of investment expenses) compared to the assumed returns for the period of between 7.0% and 8.0%. This was the primary cause of year-to-year changes in the UAAL.
- Actuarial Assumptions and Methods: Changes in the actuarial assumptions were the primary cause of the total increase in the UAAL over the 20-year period, with the reduction in the investment return assumption from 8.0% to 7.0% having the greatest impact.
- Other Experience: This includes gains and losses from demographic experience different than assumed, such as termination, service retirement, disability retirement, and mortality experience. It also includes the difference between actual and assumed salary increases and COLAs.
- Changes in Benefits: Benefit enhancements increased the UAAL over the 20-year period. This was primarily due to the MOU enhancements that were first reflected in the June 30, 2002 actuarial valuation. The relative impact is much smaller than the actuarial assumption changes and the investment returns.

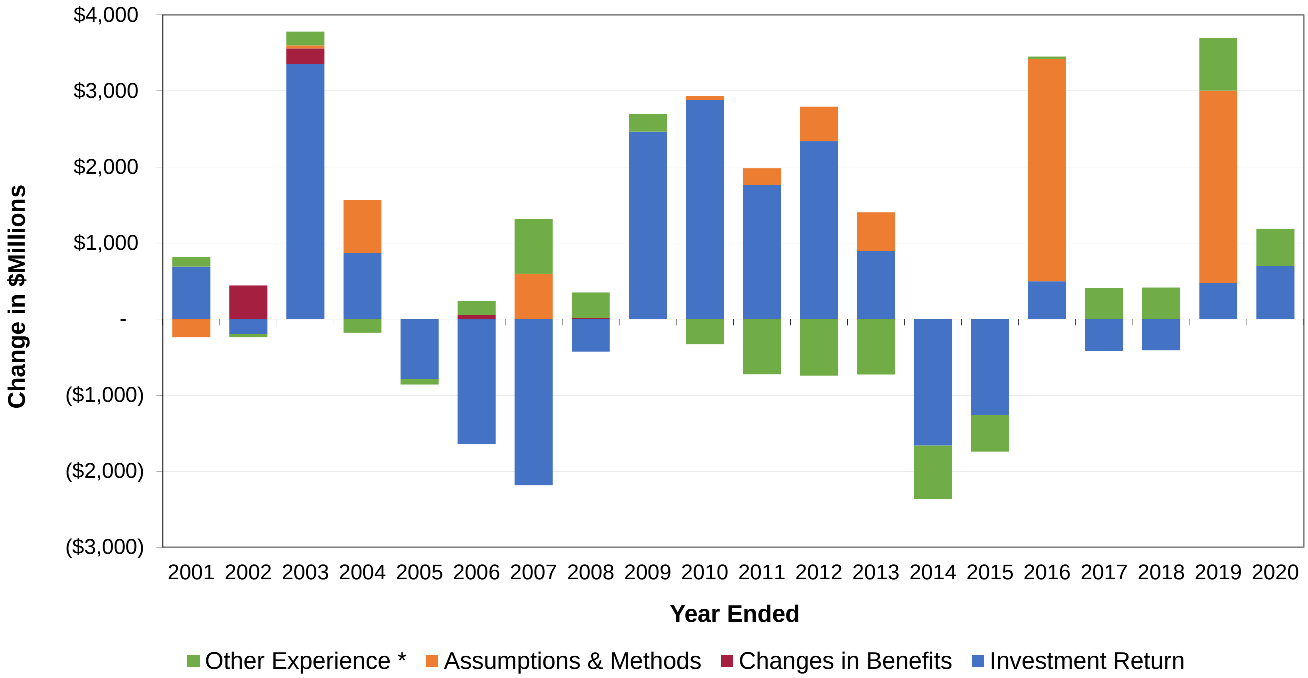
UAAL Changes

An analysis of changes in the UAAL over the last 20 years show the two primary factors that have caused increases in the UAAL are actual investment returns less than the assumed return and changes in assumptions, primarily decreases in the investment return assumption.



The following exhibit shows the sources of change in the UAAL over the past 20 valuations. The single biggest source of annual change in most years is the return on investments being either greater than or less than the assumption (blue bars).

Analysis of Change in Unfunded Actuarial Accrued Liability
(Dollars in Millions)



** Other Experience includes changes due to Salary, CPI, Mortality, and other factors.*

3. Plan Maturity Measures

Like other public retirement systems, LACERA continues to mature. As pension plans mature, they become more sensitive to certain risks. In this section, the maturity of LACERA is examined in the context of the number of active members to retirees, the projected cash flows, and volatility ratios.

The magnitude of the year-to-year increase or decrease in the employer contribution rate is affected by the maturity level, and specifically, the asset volatility ratio (the ratio of LACERA assets to payroll). LACERA has accumulated a significant amount of assets relative to its payroll and by several measures is considered a mature plan. Accumulating assets to pay for future benefit obligations is responsible funding, but it does mean that changes in the investment markets can have a significant impact on the employer contribution rate.

This section discusses the following plan maturity measures.

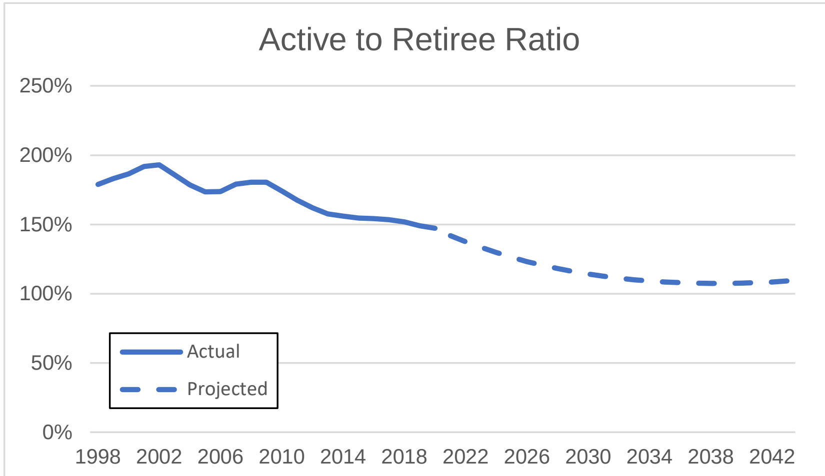
- Active-to-Retiree Ratio: As the percentage of actives declines relative to the number of retirees, this indicates a maturing of the plan.
- Cash Flow: As the cash flow (Contributions less benefit payments) becomes increasingly negative, this generally indicates a maturing of the plan.
- Asset-to-Payroll Ratio: As this ratio increases, this indicates a maturing of the plan and greater sensitivity in the employer contribution rate to investment returns.
- Liability-to-Payroll Ratio: As this ratio increases, this indicates a maturing of the plan and greater sensitivity in the employer contribution rate to liability experience and changes in the assumptions.

Active Members to Retirees Ratio

As the number of retirees (and dollar value of retiree liabilities) grows, the dollar size of any gains or losses (particularly mortality and COLA gains and losses) associated with retirees also grows, and has a more significant impact on the overall Funded Ratio. Additionally, as the number of actives compared to retirees decreases, a larger percent of active payroll is needed to finance any gains or losses associated with retirees. The aging of the population and the retirement of baby boomers has been felt by retirement systems across the nation. This demographic shift has long been predicted by actuaries and taken into account in LACERA’s funding calculations. Even though it was anticipated, this demographic shift is impacting LACERA and has increased the amount of risk faced, which is seen throughout this report.

There are various ways to assess the maturity level of a retirement system. One is to look at the ratio of active members to retirees. In the early years of a retirement system, the ratio of active to retired members will be very high as the system will be mostly comprised of active members. As the system matures, the ratio starts declining. A mature system will often have a ratio near or below one. For LACERA and other retirement systems in the U.S., these ratios have been steadily declining.

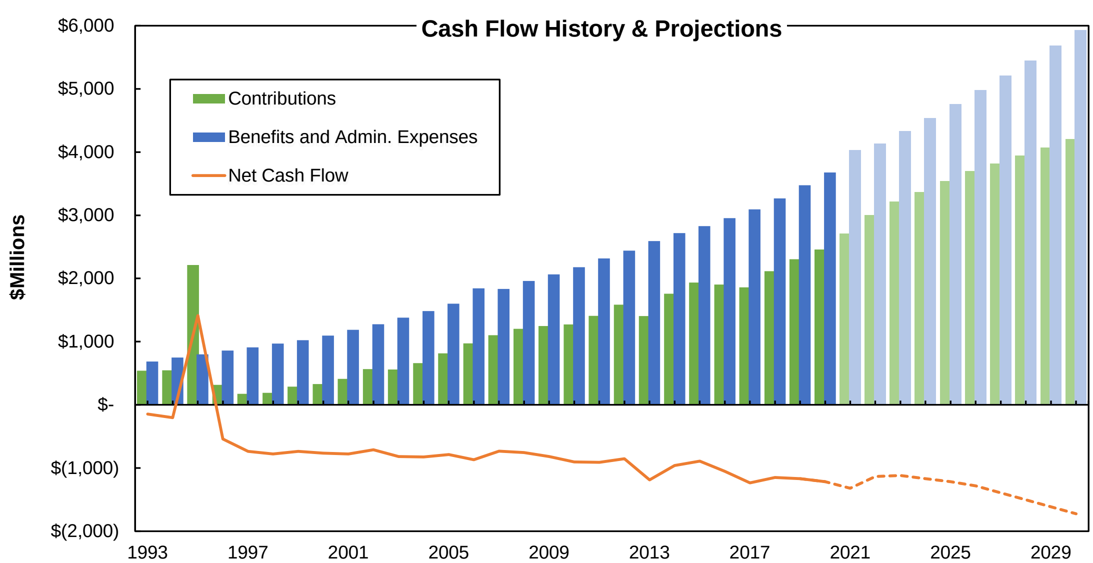
The chart below illustrates LACERA's historical and projected active members to retirees ratio. Consistent with the assumption used in the valuation, we have assumed that the active population will remain at the same level in the future.



Cash Flow

The cash flows for a retirement system are another good indicator of the maturity level of the system. As a pension plan matures, it is normal for benefit payments to exceed contributions coming into the system. When pre-funding a pension plan, it is important to remember that the objective is to accumulate assets to pay benefits. Put another way, pre-funding is expected to ultimately create negative cash flows. Note that cash flows for purposes of this analysis do not take into account cash income generated from investments.

LACERA has been in a negative cash flow position for over 25 years. The gap between contributions (combined member and employer) and benefits paid plus expenses has increased over time, and this trend is projected to continue in the future. The graph below shows LACERA's projected cash flows. Note that the cash flow is projected to become increasingly negative after 2038 when UAAL amortization layers begin to become fully amortized resulting in a reduction in the contributions, all else being equal.



Note: Large increase in contributions in fiscal year ended 1995 is due to pension obligation bonds issued by the County.

Asset and Liability Volatility Ratios

The Asset-to-Payroll ratio, often referred to as the Asset Volatility Ratio (AVR), is a measure of the level of assets to payroll. As assets grow compared to payroll, so does the size of any asset gains or losses compared to payroll. This causes asset gains and losses to have a larger impact on employer contribution rates that are calculated as a percent of payroll. As shown in the graphs below, the AVR has increased over time as LACERA has matured. As of June 30, 2020, LACERA has an Asset Volatility Ratio of 6.6, which is typical of a mature system. Expressed another way, LACERA's June 30, 2020 market value of assets of $58.5 billion is approximately 6.6 times larger than the payroll of all active members of LACERA ($8.8 billion).

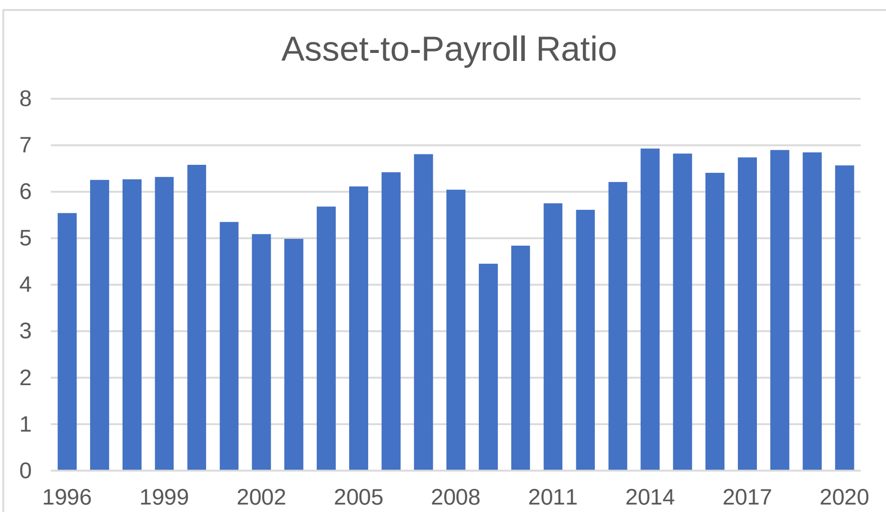
Asset Volatility Ratio

LACERA has an Asset Volatility Ratio of 6.6; that is, assets are about 7 times as big as the payroll. In practical terms, a -3% return is expected to ultimately cause a 4.6% of pay increase in the employer contribution rate.

The 6.6 AVR means that for each 1% asset loss (or gain) in relation to the assumed investment return, there will need to be an increase (or decrease) in contributions with a present value that is equivalent to 6.6% of one-year's payroll. Since LACERA's amortization period for future actuarial gains and losses is 20 years, the increase (or decrease) in the employer contribution rate will be spread out over 20 years, resulting in a 0.46% of payroll increase (or decrease) in the total contribution rate needed for each 1% asset loss (gain).

For example, a -3% return is equivalent to a 10% actuarial asset loss, as the return is 10% less than the actuarial assumption of 7%. Thus, a -3% return is expected to cause an increase in contributions with a present value of 66% of one-year's payroll. This equates to a 4.6% of pay increase in the employer contribution rate to amortize the associated increase in the UAAL over 20 years. However, this would not be recognized immediately due to LACERA's asset smoothing method, but would gradually occur over five years.

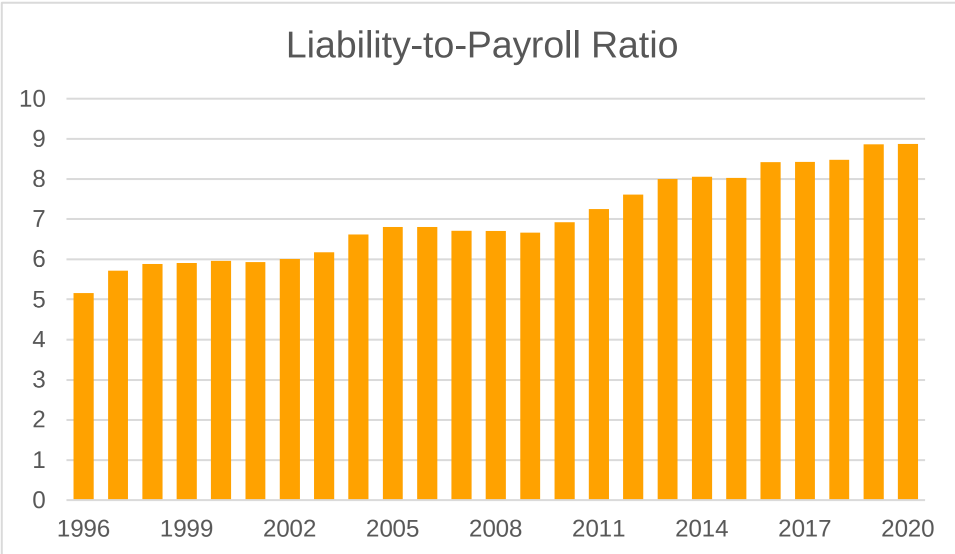
The graph below shows that LACERA has gradually matured over the last 20+ years, as represented by the increasing AVR, although the ratio has declined in some years corresponding to those with poor investment returns in the prior year.



Another measure of a system's maturity is the ratio of the AAL to the payroll, often referred to as the Liability Volatility Ratio (LVR). This ratio provides an indication of the longer-term potential for employer contribution rate volatility when LACERA becomes fully funded. In addition, this ratio provides an indication of the potential contribution rate volatility due to liability experience (gains and losses) and liability re-measurements (assumption changes). For LACERA, the current LVR is 8.9. That is, the June 30, 2020 Actuarial Accrued Liability of

$78.3 billion is approximately 8.9 times larger than the payroll of all active members of LACERA ($8.8 billion). Ultimately, the Asset and LVR should converge to the LVR as LACERA moves toward 100% funding in the future.

The graph below shows the historical LVR. The ratio has increased gradually, with much less year-to-year variance than observed in the Asset Volatility Ratio.



4. Historical Measures

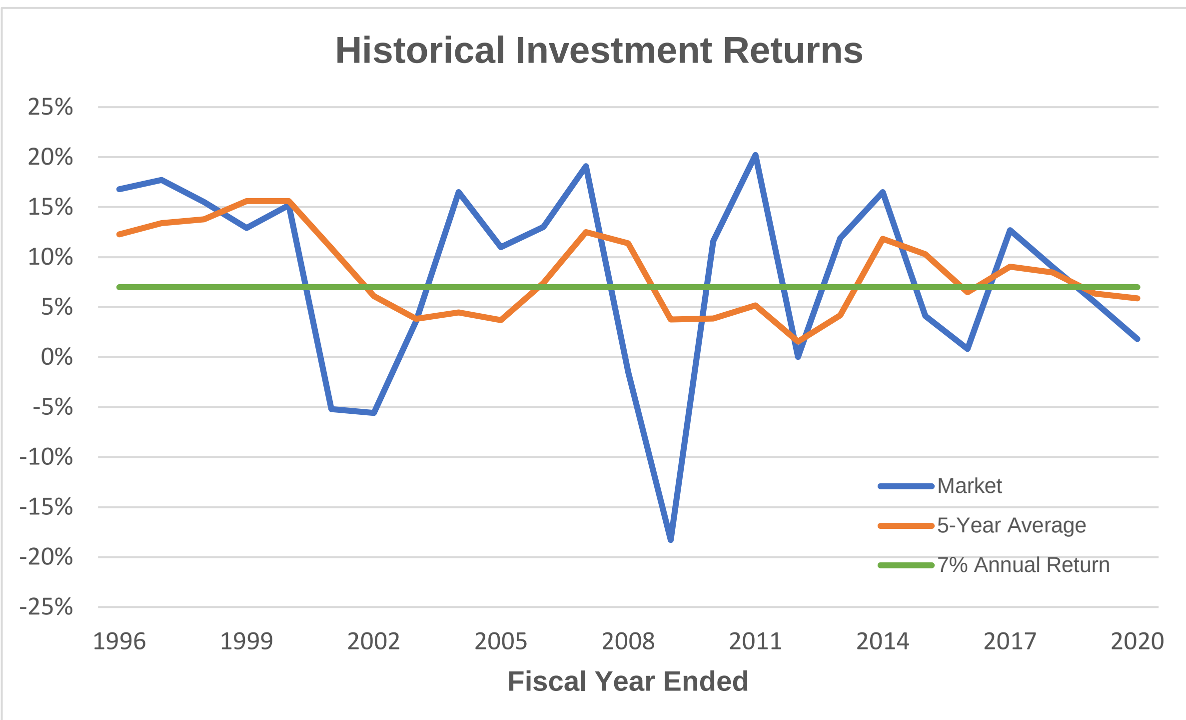
One way to assess future risks is to look at historical measurements. This section discusses the following historical measures.

- Investment Returns
- Funded Ratio
- Employer Contribution Rate

Historical Investment Returns

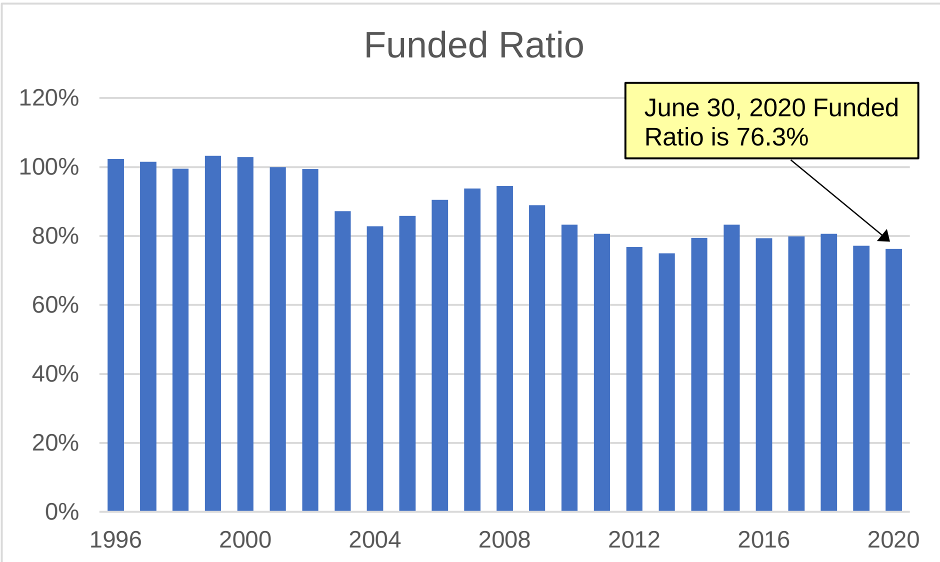
Investment returns over the last 25 years have varied significantly from year-to-year. This variance is the primary cause of changes in funded status and employer contribution rates. The valuation uses an actuarial asset method that smooths investment gains or losses (in relationship to the assumed return) over a five-year period. The graph below presents a comparison of historical returns for LACERA on a market basis and a five-year average to approximate the return on actuarial assets. Although the five-year average is smoother, it has still been as high as 15% and as low as 2%, showing that not all market volatility can be smoothed over time.

Additionally, the graph highlights the year-to-year volatility of market and smoothed asset values relative to an annual 7% investment return. This volatility exists and leads to variance in year-to-year funded status and employer contribution rates even if the long term average annual investment return is 7%.



Historical Funded Ratios

The graph below shows how LACERA's Funded Ratio has varied over the last 25 years. In particular, it reflects the significant impact that investment returns can have. The two periods where LACERA experienced significant declines in its Funded Ratio were following the dot-com bubble of the early 2000s and the financial crisis that started in 2008.

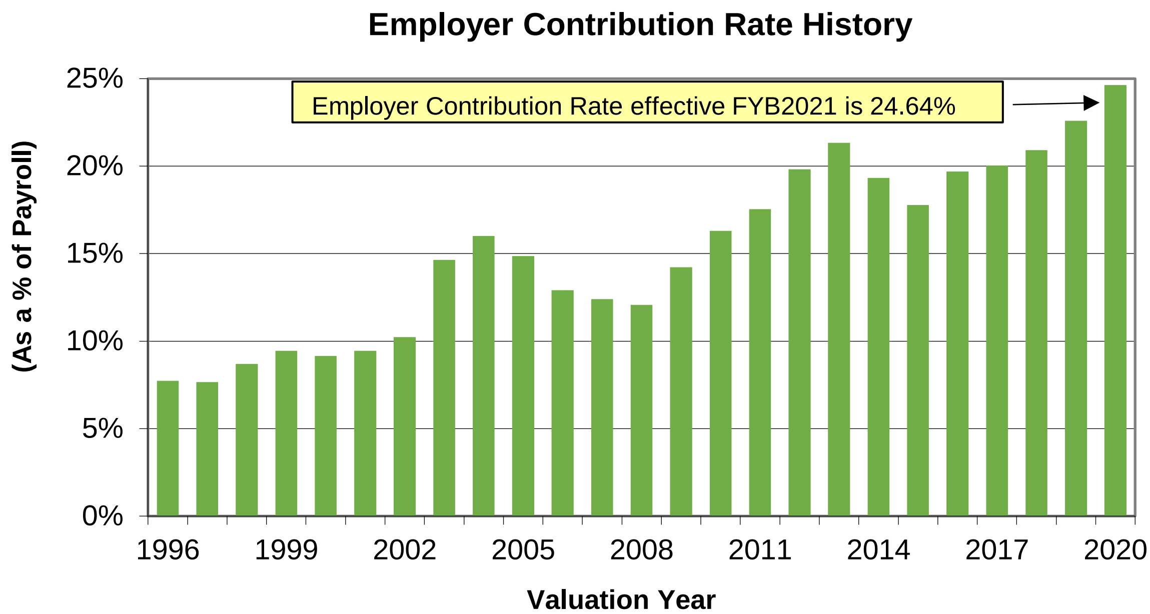


Funded Ratio

Over the past quarter century, LACERA has experienced two noticeable declines in Funded Ratio, both following periods of low investment returns: 1) after the Dot-com bubble; and 2) after the financial crisis.

Historical Employer Contribution Rates

The graph below shows how the employer contribution has varied over the last 25 years. Similar to the Funded Ratio history, the impact that investment returns have can be seen here. Significant increases in the employer contribution rate occurred following the dot-com bubble of the early 2000s and the financial crisis that started in 2008. The recent uptick in employer contribution rates has been primarily due to a combination of actual returns that were lower than assumed and a reduction in expectations for future returns, as reflected in the investment return assumption.



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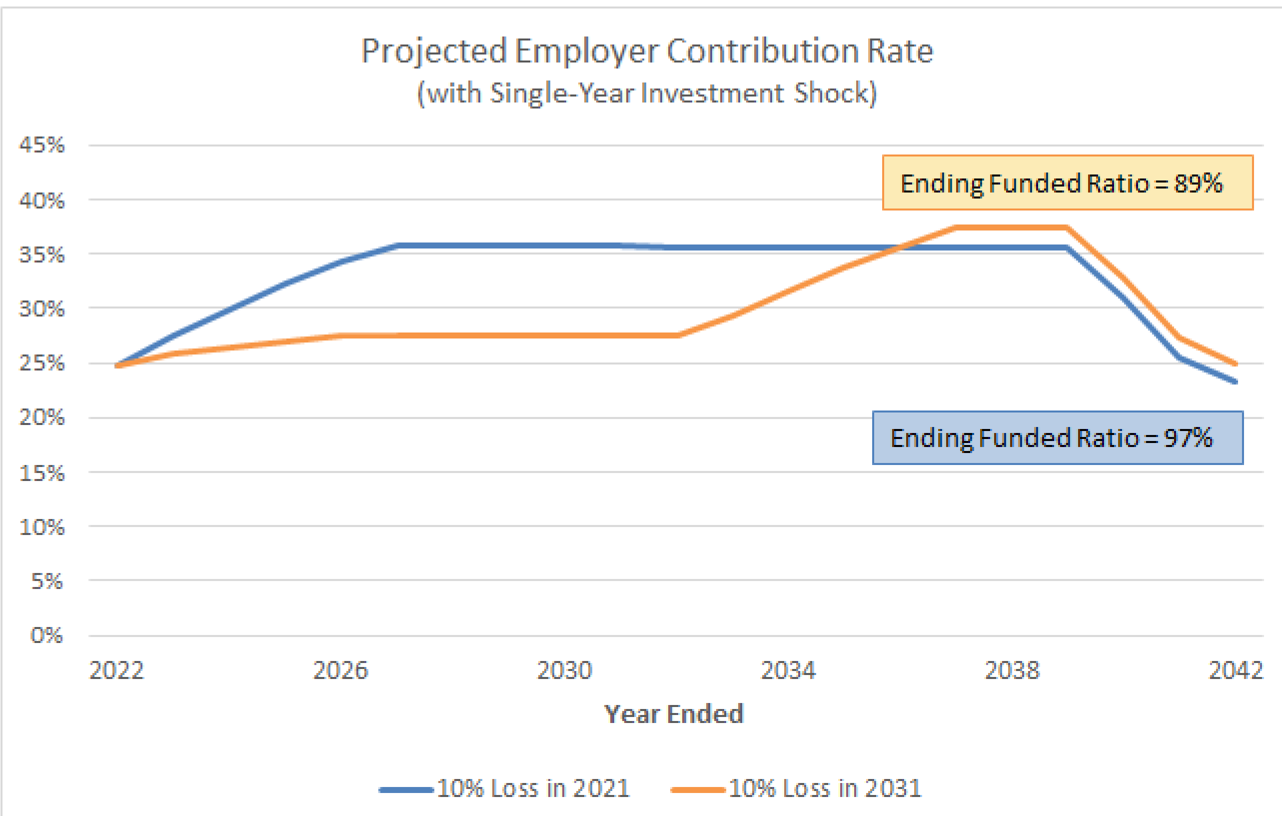
5. Assessment of Risks

The prior sections identified risks and discussed risk measures. This section quantifies the potential impact of several of the risks—investment risk, salary increase risk, payroll growth risk, and longevity risk—that could materially impact the employer contribution rate and Funded Ratio. In order to understand the extent of the risks faced, several stress tests were performed to determine the impact on employer contribution rates and funding levels. Although each risk was examined in isolation, the system has the potential to face these challenges in combination, which could have either an offsetting or compounding effect.

One-Time Investment Shock

The valuation assumes LACERA earns a constant 7% per year in the future. The reality is the actual return will vary from year to year. As shown in the Historical Measures section, LACERA's return has ranged from approximately -20% to 20% over the last 20 years. As previously discussed, as a plan matures it tends to become more sensitive to swings in the investment market.

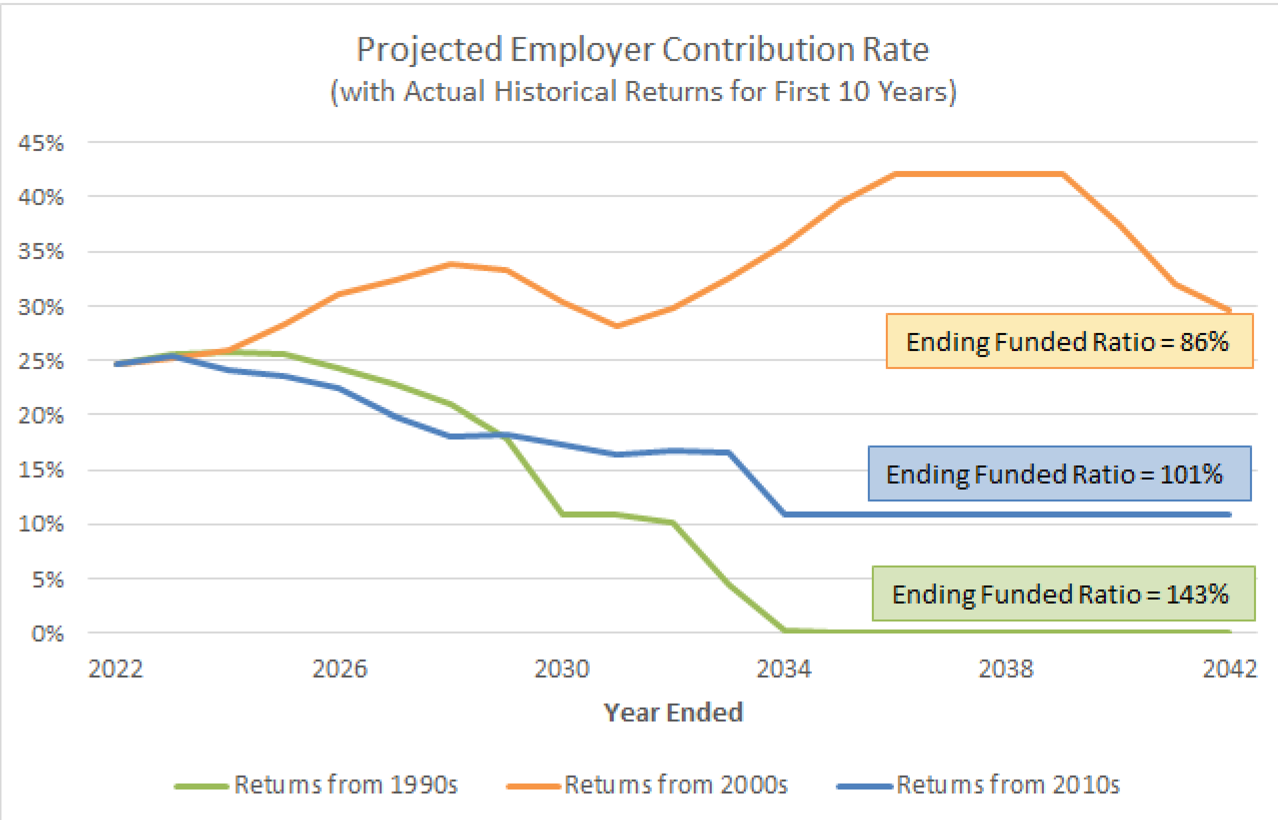
The graph below shows the potential impact of a -10% return on the employer contribution rate and Funded Ratio if that return were to occur in the fiscal year 2020 to 2021 or the fiscal year 2030 to 2031. Based on LACERA's assumed 7.0% return and a standard deviation of 12.4% (from asset allocation option B of the Strategic Asset Allocation – LACERA Pension Trust memo for the May 19, 2021 Board of Investments meeting), there is an approximate 6% probability that in any given year the investment return will be -10% percent or worse.



As expected, due to the projected maturing of the plan in the future, the increase in the employer contribution rate is greater if the shock occurs 10 years from now (orange line) than if it occurs in the current year (blue line), although the employer contribution rate would have been lower in the intervening years. However, the difference between the two scenarios' projected Funded Ratio in 2042 is fairly small, as LACERA is already quite mature. The Funded Ratio is lower in 2042 if the shock takes places 10 years from now, as the system's funding would have had less time to recover. In addition, employer contributions will be higher in years beyond 2042 as that additional deficit is amortized over 20 years.

Historical Returns

Another way to look at the potential impact of future variance of returns is to look at what would happen if history repeats itself. The graph below shows the potential impact on the employer contribution rate and Funded Ratio, if LACERA's actual returns from the three previous decades were repeated. In each scenario, the returns from one of the decades is assumed to occur followed by an annual 7% return in the following years.



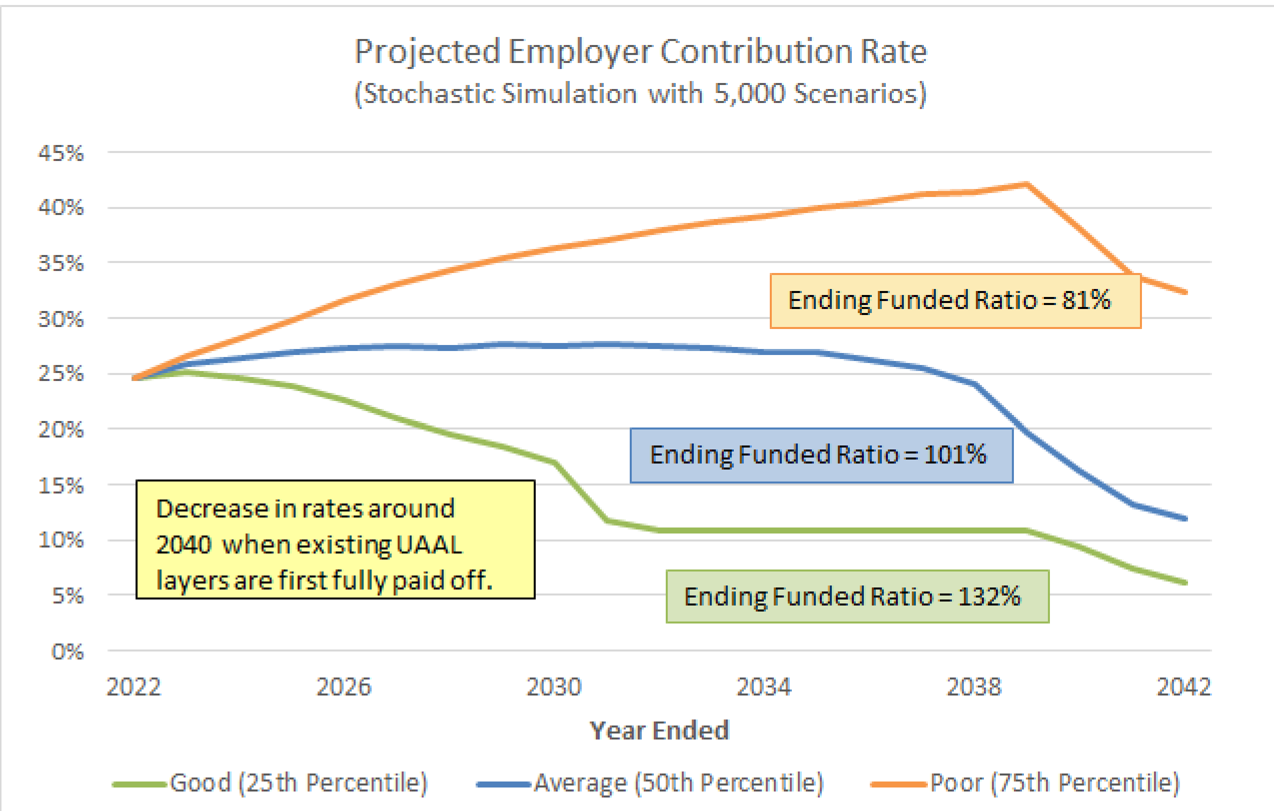
The potential variability of the employer contribution rate is evident with the projected rates varying from 40% of pay in 2000s scenario to 0% in the 1990s scenario. It should be noted that it is unlikely that the Returns from 1990s scenario (blue line) will recur, at least in the near future, as the strong returns were at least in part driven by a significant decline in interest rates, which given the current low interest rate environment does not seem likely. The significant increase in in the employer contribution under the Return from 2000s scenario (orange line) was caused primarily by the approximate -18% return for the fiscal year ended June 30, 2009. It does not reflect the recovery that occurred in the 2010s which, in reality, ultimately mitigated some of the impact.

Stochastic Analysis

The analyses above focused on deterministic scenarios based on a specific set of returns. To better understand how the variance of future returns could impact LACERA's funding, a stochastic model was used to generate 5,000 sets of Monte Carlo simulations based on LACERA's assumed 7.0% return and our estimate of the standard deviation of LACERA's target asset allocation of 12.4%.

Each of these 5,000 simulations represent a hypothetical future set of returns that could occur based on the assumed return and standard deviation. For each simulation, the assets and liabilities for the system were projected for the next 20 years. With this information it is possible to assess the potential impact of long-term investment performance and variance in funding levels.

The graph below shows the 25th, 50th, and 75th percentile of the projected funded status for LACERA. For example, the 75th percentile indicates that 75% of the results under the model were better (in the case of the employer contribution rate, lower than the green line) and 25% were worse. Combining a large number of scenarios in this type of analysis results in smooth lines, although the actual outcome will have more variability. Note that the compounded investment return over the 20-year period was about 8.8% for the 25th percentile (above average) and about 5.1% for the 75th percentile (below average).



The goal of these stochastic simulations is to provide a realistic estimate of the range of possible future outcomes. The stochastic analysis shows that the range between the 25th and 75th percentiles is quite large, illustrating the potential variance in future funding of the system. It should be remembered that half of the scenarios fall outside this range, with 25% of the scenarios being at or above the green line and 25% being at or below the blue line. Ideally, the range between the 25th and 75th percentiles for both measures would be narrower; however, there is a tradeoff between each of the two outcomes. To reduce the variance in the employer contribution rates would likely lead to an increase in the 50th percentile employer contribution rate and cause a wider range in the Funded Ratios. For example, when LACERA recently moved to 20-year amortization of future UAAL changes, this reduced the probability that the Funded Ratio would be low, but increased the probability the employer contribution rate would be higher.

The charts below show additional information regarding funding levels and employer contribution rates based on the stochastic analysis.

Funded Ratio after 20 Years	
Probability greater than 60%	96%
Probability greater than 80%	76%
Probability greater than 100%	49%

Employer Contribution Rate	
How often is the Employer Contribution Rate > 30%(1)?	36%
How often is the Employer Contribution Rate increase > 3%(2)?	10%

1. Percentage of years that the total employer contribution rate exceeds 30% of payroll during the 20-year projection period.

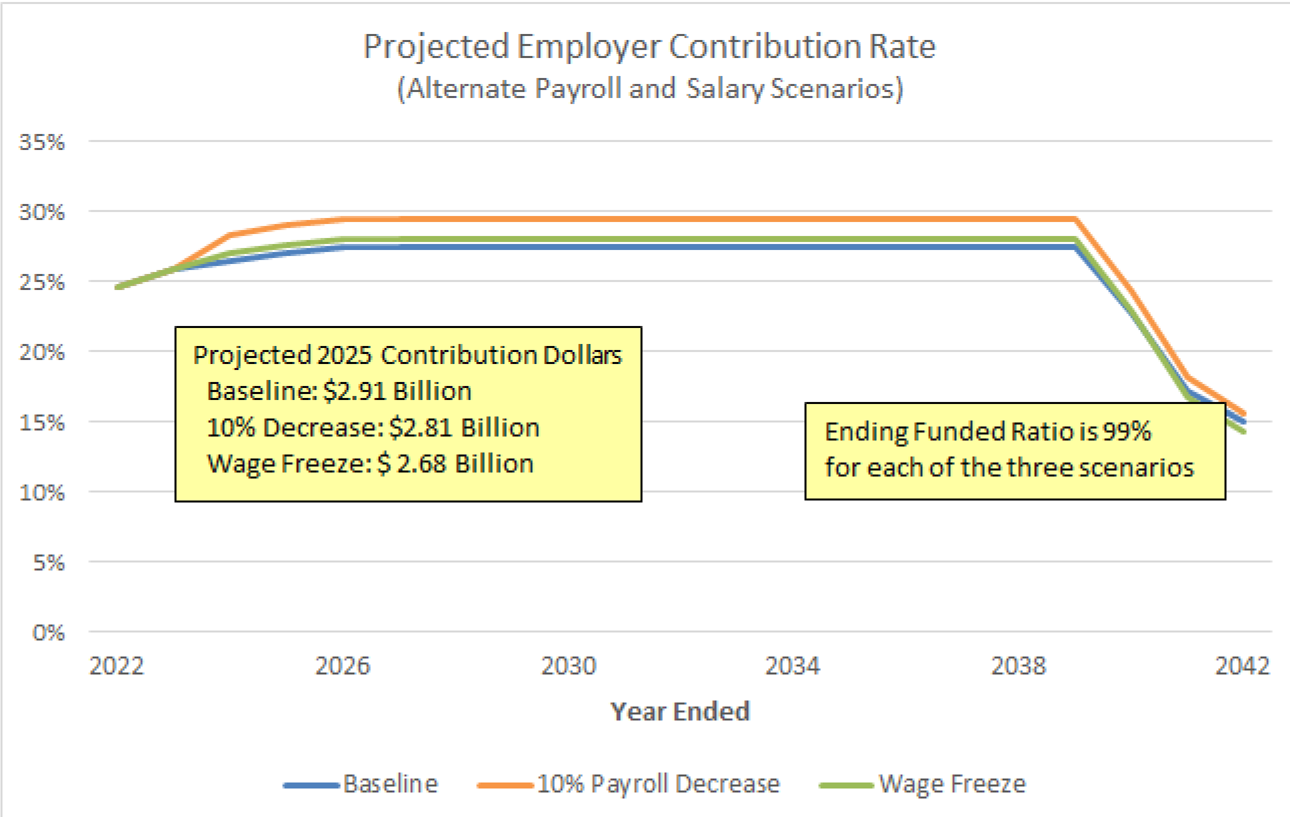
2. Probability of increase exceeding 3% of payroll in any given year of 20-year projection period.

Future Salary and Payroll Levels

Although, as previously discussed, we believe investment returns will have the largest impact on LACERA's future funding, there are other factors that will affect future funding levels. One example is payroll levels. As LACERA is funded as a percentage of payroll, a decline in payroll (or an increase less than the assumed annual increase of 3.25%) will result in the calculated percentage of payroll not being a sufficient dollar amount to pay off the UAAL on schedule, which will result in an increase in the UAAL portion of the employer contribution rate. That is, the same contribution dollars will still be needed to pay off the UAAL, but they will be a percentage of a smaller payroll. Note that a lower payroll is not expected to impact the Normal Cost rate, so a lower payroll would be expected to result in reduced employer Normal Cost contributions.

The graph below shows the impact on the employer contribution rate if the payroll is 10% less than assumed (orange line). For comparison, the baseline (blue line) shows the projected employer contribution rate assuming all assumptions are met. Under the decrease in payroll scenario, the employer contribution rate is about 1.5% higher than the baseline scenario. However, because the payroll is lower under the alternate scenario, the actual contributions in dollar terms projected to be paid would still be less.

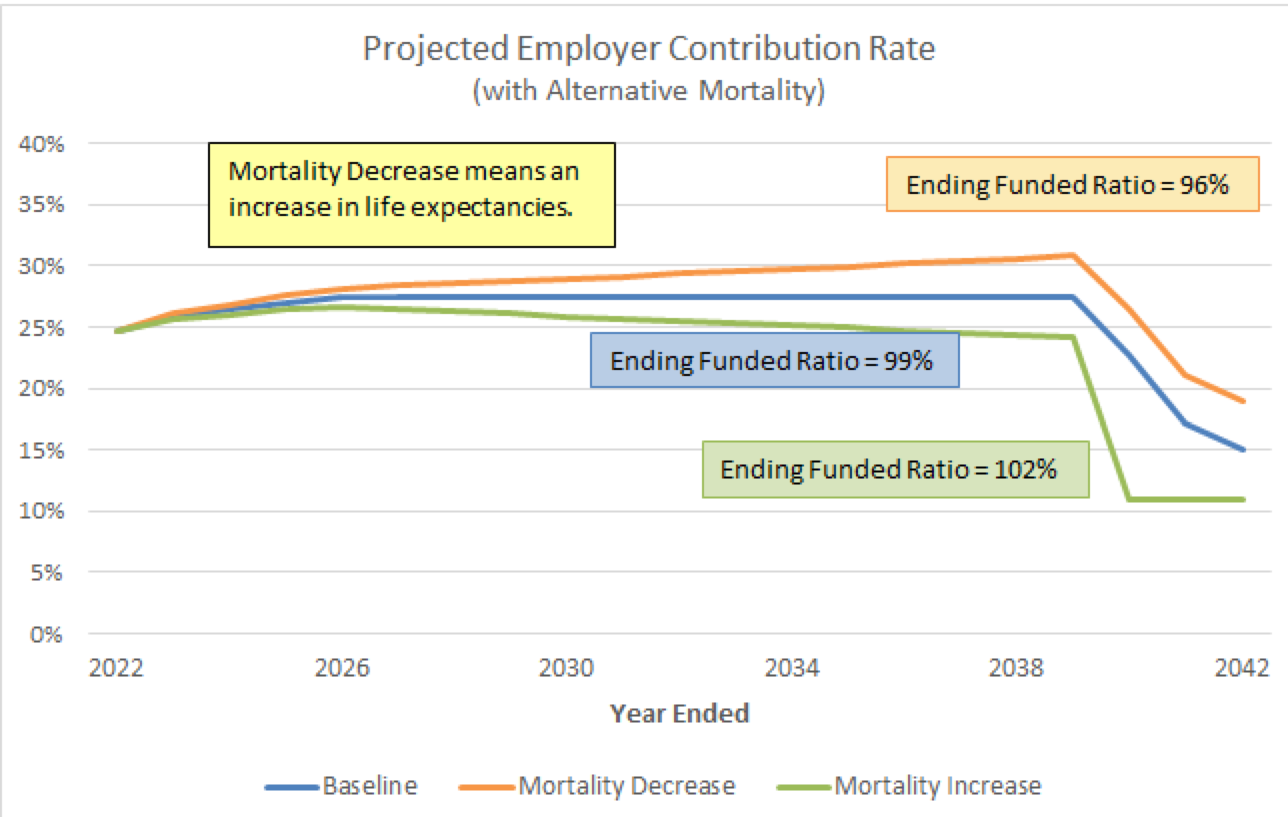
Lower-than-assumed increases in payroll can be caused by two factors: 1) a decline in active employee population; or, 2) compensation increases to current active employees that are less than assumed. The prior scenario assumed the 10% decrease in payroll was caused by a decline in the active population. If we assumed that the 10% decrease was caused by both an active population decline and lower-than-assumed compensation increases for active employees, the impact of the two factors would have a somewhat offsetting impact. The "Wage Freeze" scenario (green line) assumes that the payroll is 10% less than assumed in the next year, but part of this is caused by no compensation increases to current employees for one year. This type of scenario might be typical of an economic recession. As shown in the graph, the employer contribution rate is roughly the same as the baseline scenario. Note that for future years, increases in member compensation and payroll are assumed to revert to the assumed levels.



Mortality Risk

Unlike investment returns, mortality rates tend to be fairly consistent from year to year; however, over time mortality rates can shift materially. Historically, mortality rates have gradually declined, which has resulted in increasing life expectancies. LACERA's valuation anticipates a certain level of mortality improvement each year. To the extent future mortality is either better or worse than projected by the assumptions, the valuation results will be affected.

To quantify the potential impact of changes in mortality, the graph below shows a projection if in each future year 0.5% less (or more) of the total population died each year. For perspective, about 3% of LACERA's retiree population dies each year, so reducing the aggregate mortality rate from 3.0% to 2.5% is equivalent to a 1/6th decrease in the number of deaths each year. Over the last four years, the mortality gain on retirees has averaged about 0.05%, so the 0.5% reduction (or increase) is about a 10-fold increase in recent variance. This type of variance seems unlikely unless there was a significant outside factor, such as a medical breakthrough.



Assumption Risk

The prior analysis has focused on the impact of future experience deviating from the assumptions. As noted in Section 2 (Identification of Risk), one of the biggest factors in the increase in LACERA's UAAL over the last 20 years has been changes in actuarial assumptions, in particular changes in the investment return assumption. These changes are driven by expectations of future experience, and generally guided by the triennial Investigation of Experience study. The following table provides a simple analysis on how the short-term costs are affected by the investment return assumption. Note that the long-term cost of the Plan will be largely driven by actual investment returns and other experience; the assumptions used in the valuation impact the timing of the contributions over the long term.

	Investment Return Assumption		
	Current 7.00%	+0.5% 7.50%	-0.5% 6.50%
Employer Contribution Rate	24.64%	20.00%	29.53%
Change		-4.64%	4.89%
Funded Ratio	76.3%	81.2%	71.7%
Change		4.9%	-4.6%

LACERA

Risk Assessment

Based on June 30, 2020 Actuarial Valuation of Retirement Benefits

Nick Collier, Craig Glyde and Mark Olleman

JULY 14, 2021

Milliman

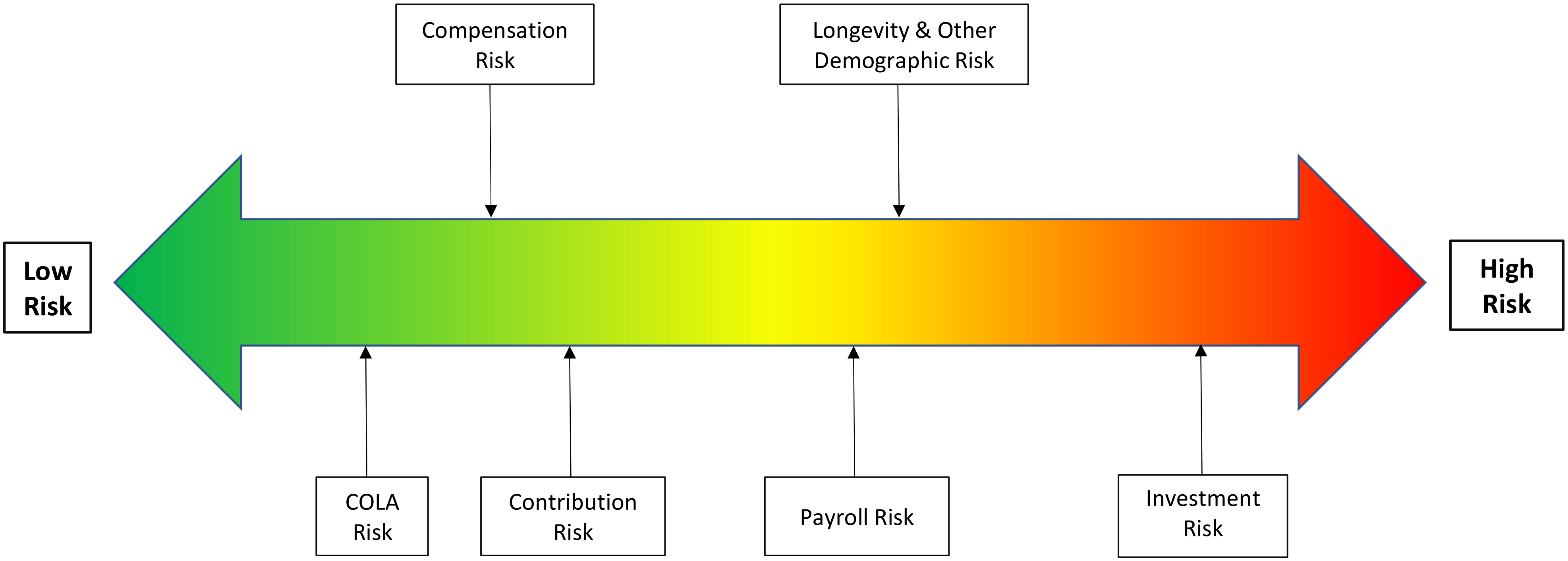
Introduction

- Valuations are based on one set of assumptions
  - Almost certain that future experience will differ from the assumptions
  - Important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the plan
- The risk assessment is designed to give LACERA information on risks specific to future pension liability measurements and contribution levels
  - Identify risks that may be significant to the plan
  - Disclose plan maturity measures and historical information that are significant to understanding the plan's risk
  - Assess the risks identified as significant to the plan
- No significant differences in the identified and assessed risks compared to the assessment provided in October 2020
- Guidance on risk assessment is provided in Actuarial Standard of Practice No. 51

Identification of Risks – Ranking

Risk: The potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience.

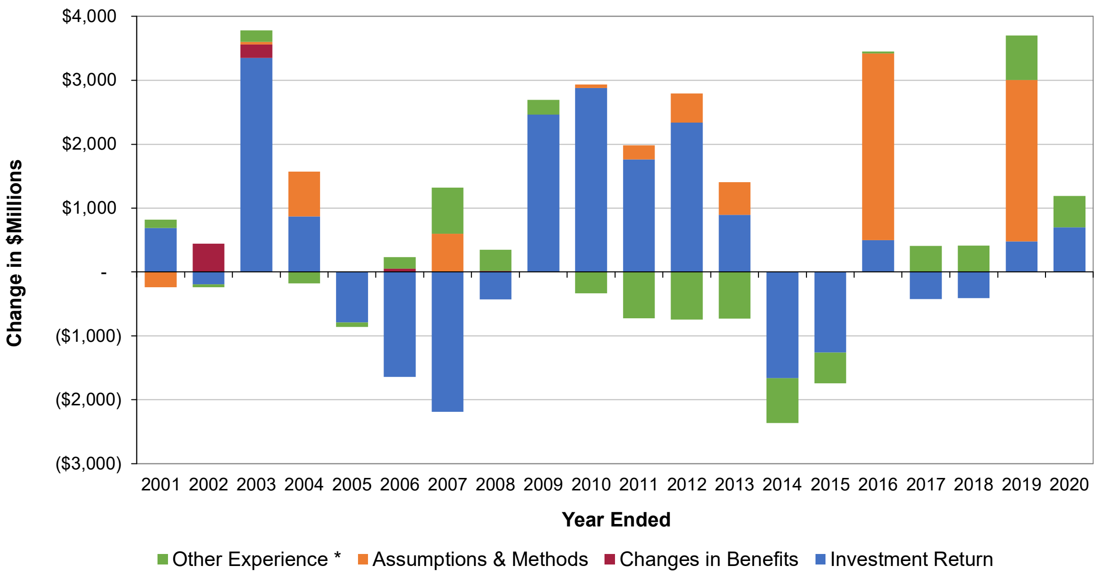
- We view future investment returns as the risk with the potential to have the greatest impact



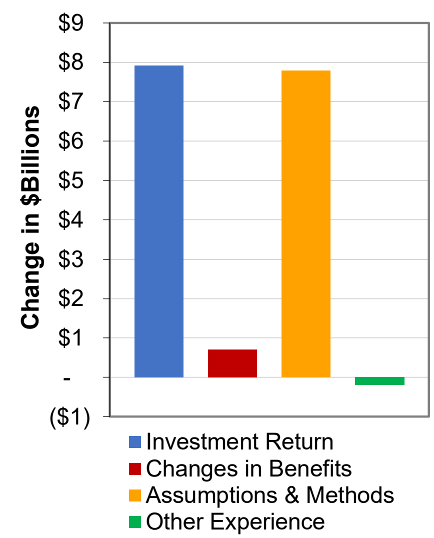
Note: Above chart is based on Milliman's opinion and is not numerically based.

Identification of Risks – Historical Experience

Year-to-year changes in the UAAL



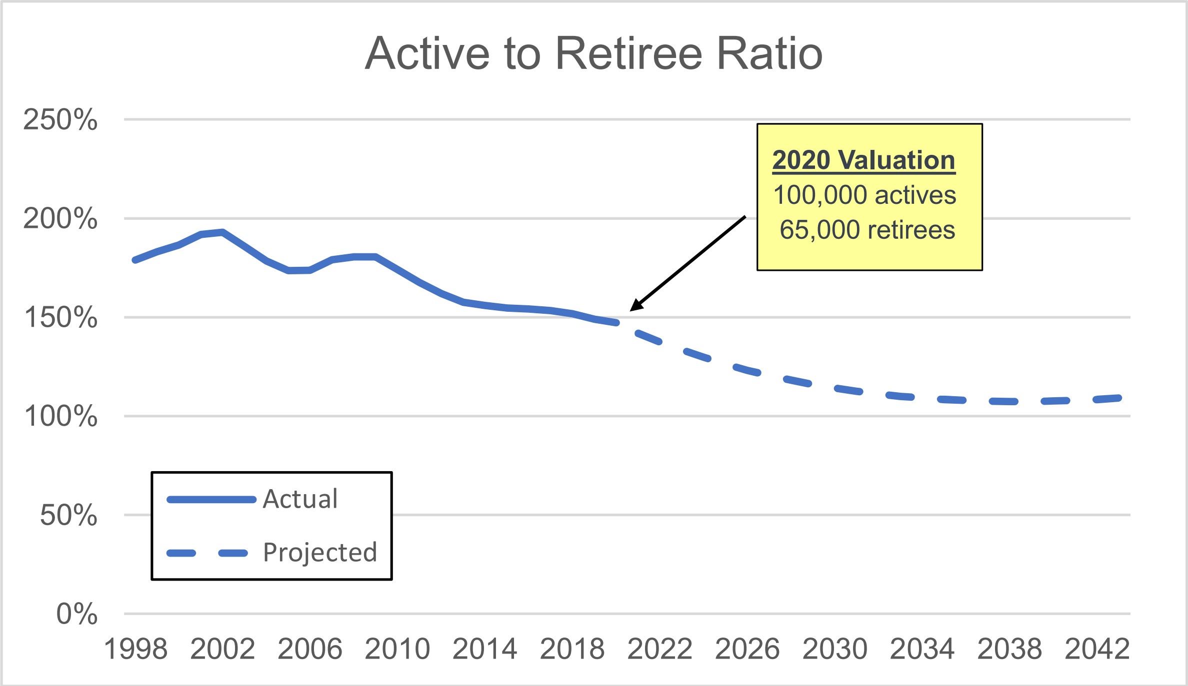
Cumulative changes in the UAAL



** Other Experience includes changes due to Salary, CPI, Mortality and other factors.*

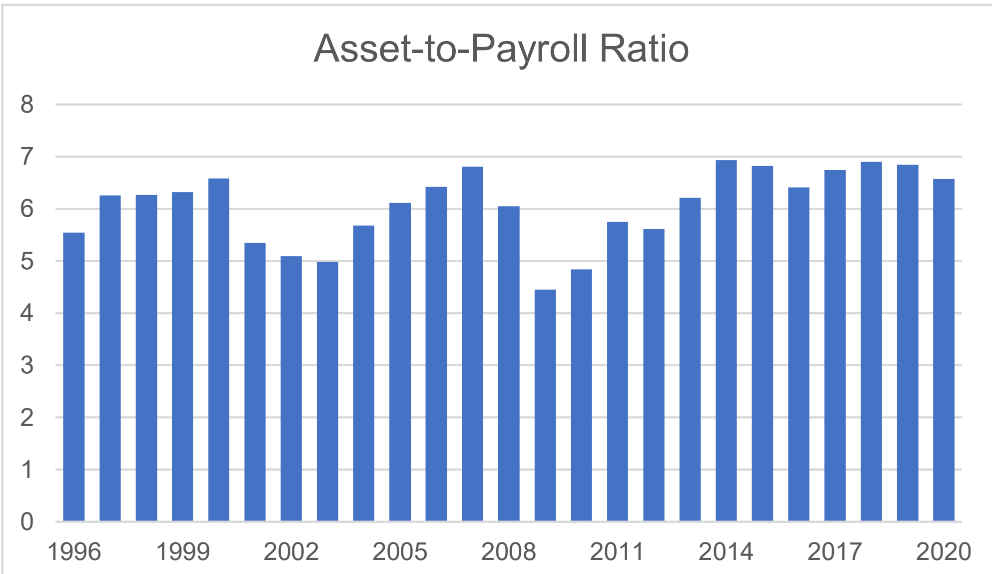
Plan Maturity Measures – Active to Retiree Ratio

- Mature plans are generally more susceptible to risk



Plan Maturity Measures – Asset Volatility Ratio

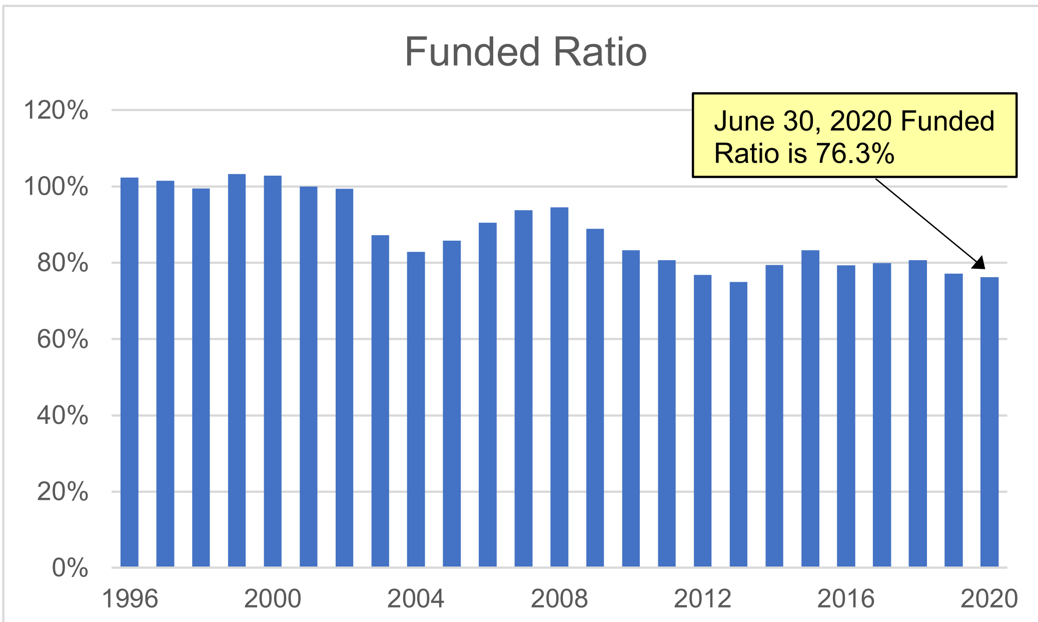
- Asset Volatility Ratio is ratio of assets relative to the plan's payroll
- LACERA has an Asset Volatility Ratio of 6.6; that is, assets are 6.6 times as big as the payroll.
  - In practical terms, for each 1% the actual return is less than the assumed return, it causes a 0.46% of pay increase in the employer contribution rate.



Example: A 3% investment loss is 10% less than the assumed 7% return. Since assets are 6.6 times payroll, this means that a 10% actuarial asset loss is 66% of the payroll. Amortizing this over 20 years results in a 4.6% of pay increase in the employer contribution rate.

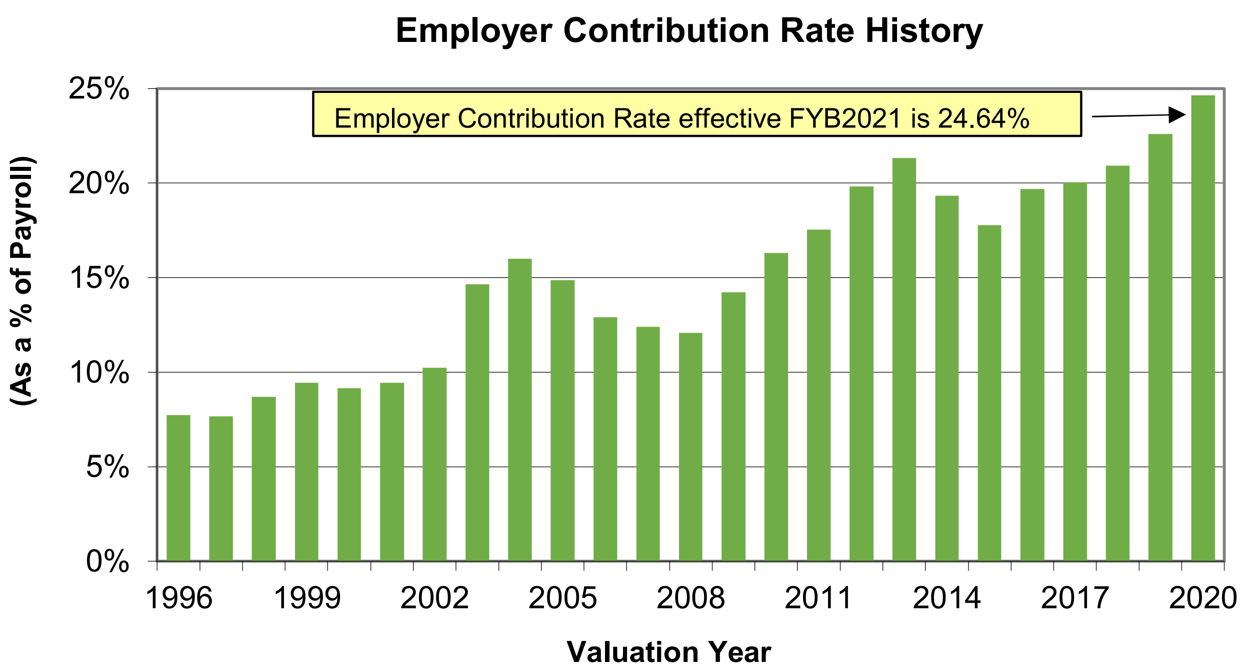
Historical Measures – Funded Ratio

- Funded Ratio has ranged between about 100% to 75% over last 20 years
  - Primary driver of increases and decreases has been investment returns



Historical Measures – Employer Contribution Rate

- Employer contribution rate has increased from less than 10% of pay to almost 25% of pay over last 20 years

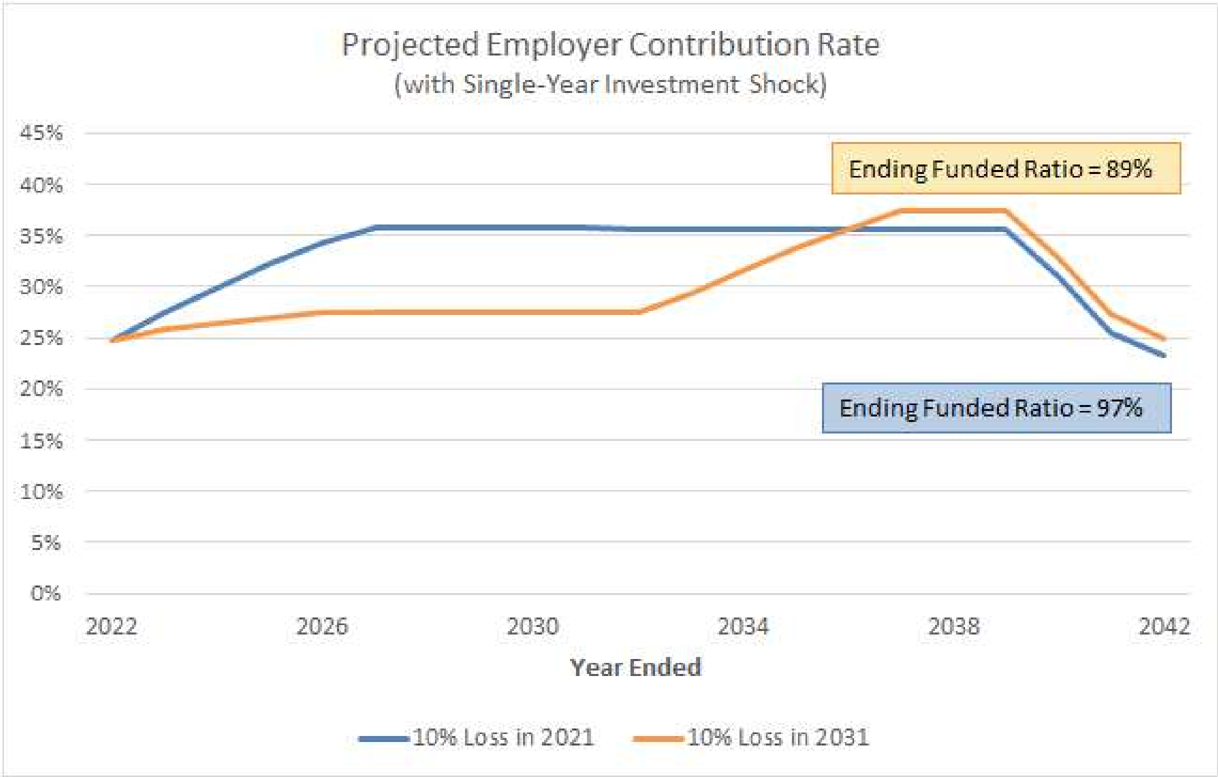


Assessment of Risks

- Potential impact of risks are assessed based on impact on LACERA's Funded Ratio and employer contribution rate
- Multiple scenarios were analyzed to give an idea of the potential deviation due to several factors
  - Investment return
  - Payroll / Compensation
  - Mortality

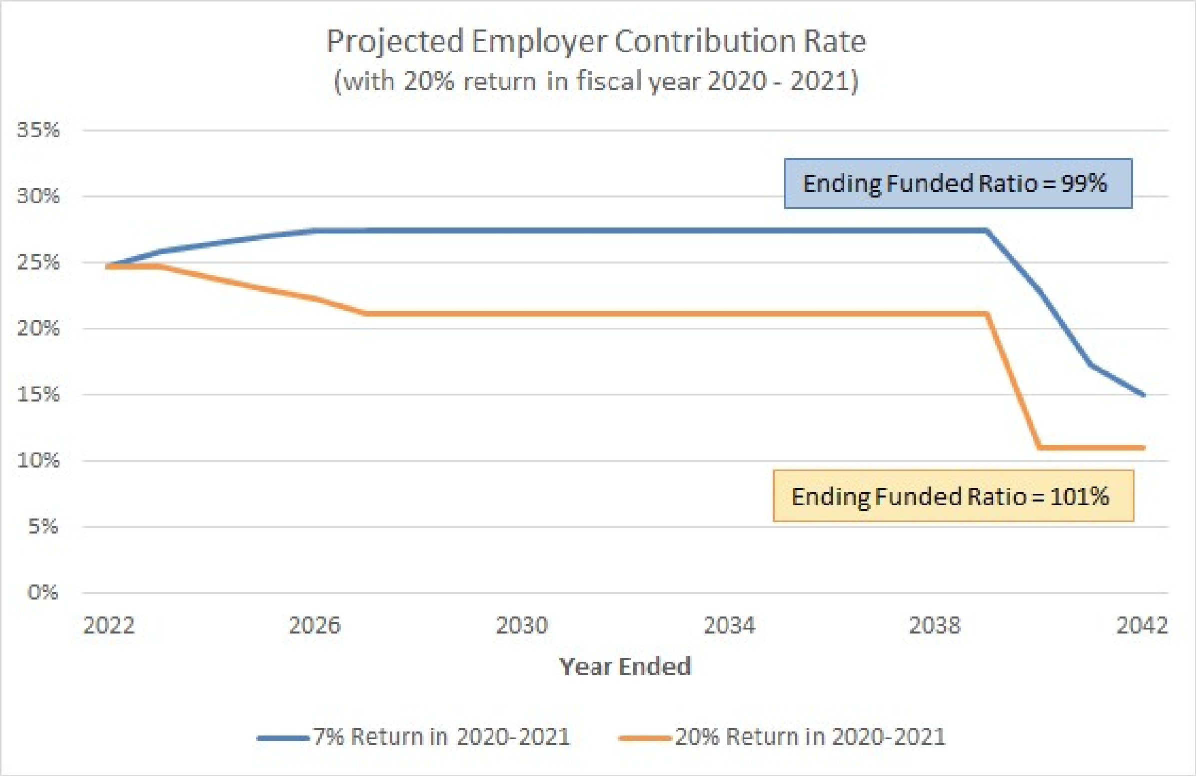
Assessment of Risk – Investment Return (1-Year Shock)

- Investment loss causes a greater increase in the employer contribution rate as LACERA matures



Assessment of Risk - 2020-2021 Investment Return

- Estimated investment return of 20% in fiscal year ending in 2021



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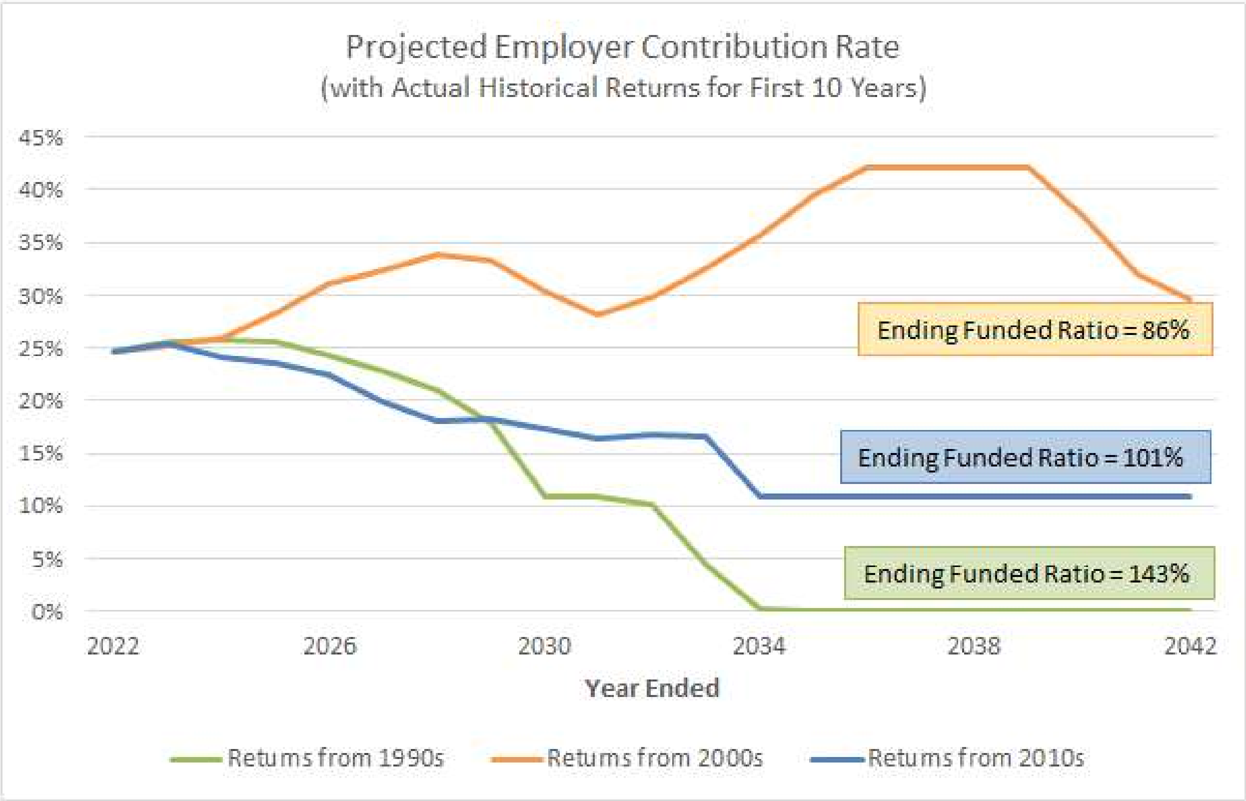
Assessment of Risk – Historical Investment Returns

- If returns from recent decades were to recur, projected results vary significantly



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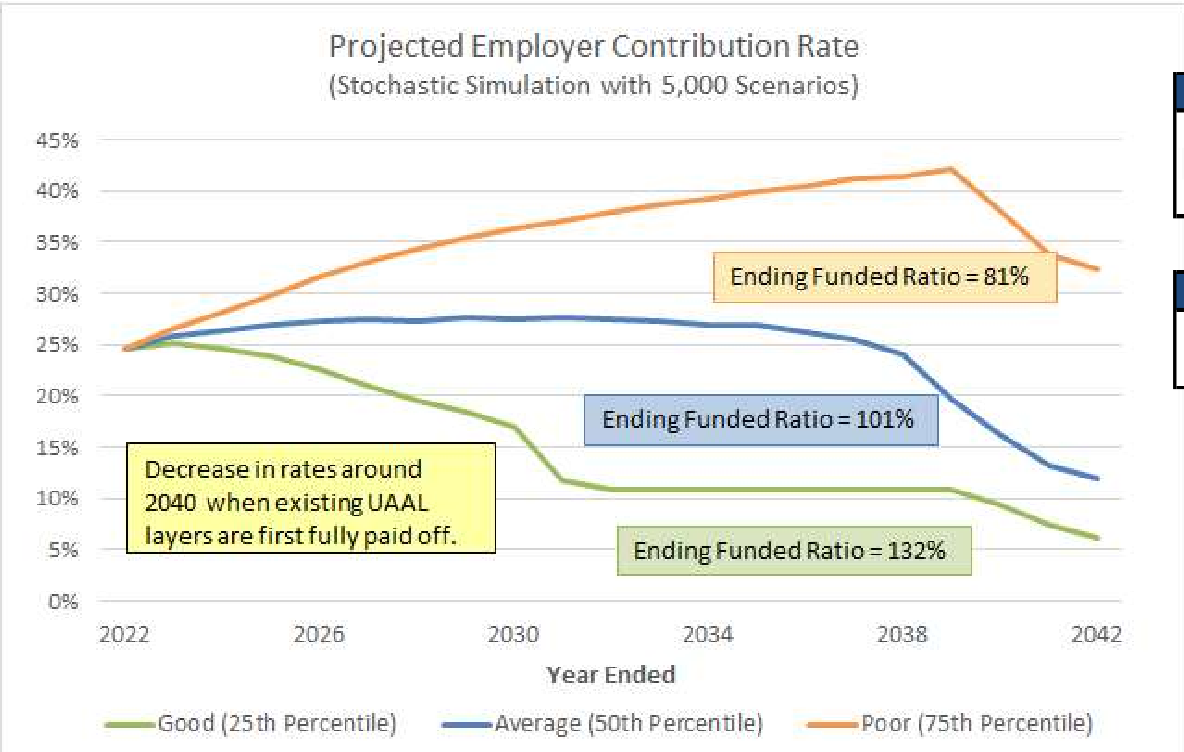
Assessment of Risk – Stochastic Analysis of Returns

- Probability of future outcomes based on standard deviation of asset allocation

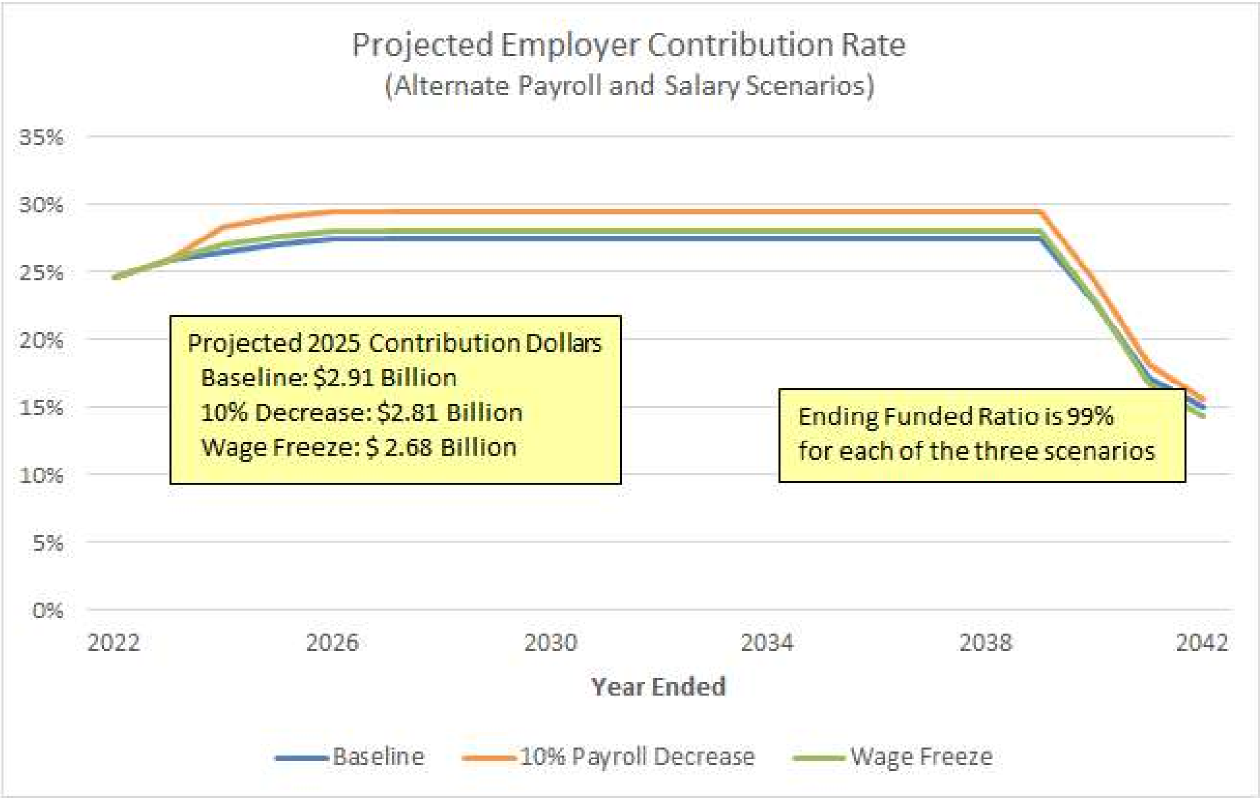


Funded Ratio after 20 Years	
Probability greater than 60%	96%
Probability greater than 80%	76%
Probability greater than 100%	49%

Employer Contribution Rate	
How often is the Employer Contribution Rate > 30%?	36%
How often is the Employer Contribution Rate increase > 3%?	10%

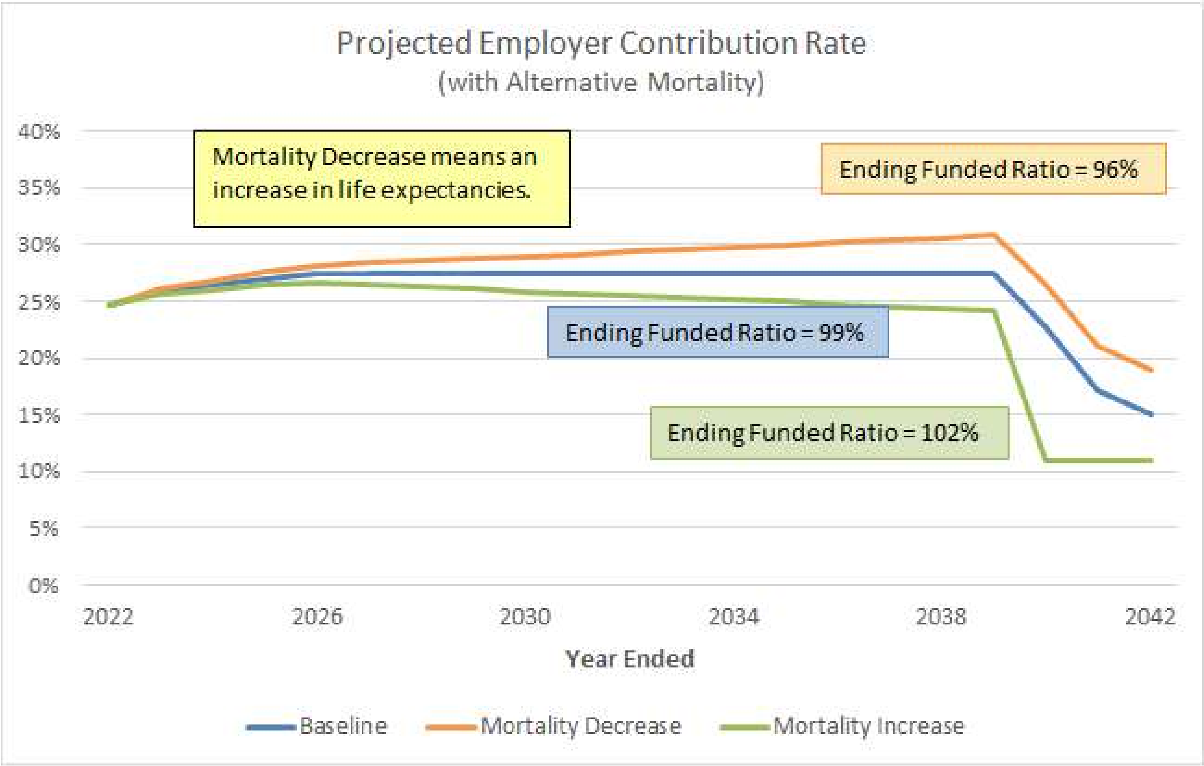
Assessment of Risk – Compensation and Payroll

- Decrease in payroll could materially affect employer contribution <u>as a percentage of pay</u>



Assessment of Risk – Mortality Different than Assumed

- Impact of mortality unlikely to have same impact as investment experience, but can add up over time



Assessment of Risk – Contribution Risk

- Primary contribution risk = Employers not making required contribution
  - For some retirement systems, a significant source of their underfunding has been the plan sponsor not making the actuarially determined contribution
- We have not assessed risk of employers not making required contribution
  - County and other employers have consistently made the actuarially determined contribution in the past
  - There are legal requirements specified in the 1937 Act that govern future contributions
  - If the County does not make its full contribution in the future, it could present a significant risk to LACERA's funding
- Secondary contribution risk = Pushing contributions into the future
  - Contribution increases due to assumption changes have been phased in instead of recognized immediately
  - The STAR Reserve is included in assets, but STAR liabilities are not
  - The County has a history of reflecting contribution rate decreases as soon as possible (July) and deferring increases as late as possible (September)

Addressing Risk

- LACERA's Current methods to address risks are:
  - **Assets:** LACERA regularly performs asset allocation studies which are integrated with LACERA's funding in order to set a target allocation that maximizes return at a level of risk that is acceptable to the system.
  - **Liabilities:** LACERA has regular investigations of experience performed to monitor and set the assumptions and methods used to calculate the liabilities.
  - **Funding:** LACERA strives to balance projected funding levels with reasonable and stable employer contribution rates.
- Reducing risk generally creates a tradeoff:
  - Reducing investment risk generally:
    - lowers the likelihood of a significant poor single-year return, but
    - also reduces the expected long-term investment return.
    - This reduction in expected future income will likely result in the need for additional contributions.
  - A lower investment return assumption reduces the likelihood and magnitude of investment losses, but it also increases the member and employer contribution rates.

Update on Actuarial Standards of Practice (ASOPs)

- Revised ASOPs 27 and 35 effective August 1, 2021:
  - ASOP No. 27 “Selection of Economic Assumptions for Measuring Pension Obligations”
  - ASOP No. 35 “Selection of Demographic and other Noneconomic Assumptions for Measuring Pension Obligations.”
  - Although important, the changes are not expected to have an impact on LACERA or the advice Milliman provides LACERA
- ASOP No. 4 (Measuring Pension Obligations)
  - Still awaiting 3rd exposure draft
  - Could be effective as early as the June 30, 2022 valuation.

Conclusion

- As a mature plan, LACERA is subject to a number of risks which could ultimately affect the Funded Ratio and employer contribution rate
  - Investment returns have historically had the greatest impact and this is likely to continue
- LACERA has several mechanisms in place to address risks, but they can only mitigate risks, not eliminate them
  - Reducing risks generally creates a tradeoff
- Continue to monitor risks and consider areas where additional risk mitigation may be appropriate

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Questions

Caveats and Disclaimers

This presentation is based on the data, methods, assumptions and plan provisions described in our risk assessment report based on the June 30, 2020 Actuarial Valuation of Retirement Benefits. The statements of reliance and limitations on the use of this material is reflected in that 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.

Milliman Actuarial Valuation

Los Angeles County Employees Retirement Association

Actuarial Valuation of Retirement Benefits

June 30, 2020

Prepared by:

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Consulting Actuary

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Consulting Actuary

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Issued November 25, 2020

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November 25, 2020

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:

As requested, we have performed an actuarial valuation of retirement benefits for the Los Angeles County Employees Retirement Association (LACERA) as of June 30, 2020 to be used in determining the contribution rates effective July 1, 2021. The major findings of the valuation are contained in this report. This report reflects the benefit provisions and contribution rates in effect as of June 30, 2020, and LACERA's Funding Policy that was adopted in December of 2009 and amended as of February 2013. It should be noted that under the amended Funded Policy, the reserve value for STAR benefits is included in the Valuation Assets for 2014 and future valuations; however, the liability for any potential STAR benefits that may be granted in the future is not included in this valuation.

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. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation 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 calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for LACERA have been determined on the basis of actuarial assumptions and methods that are individually reasonable (taking into account the experience of LACERA and reasonable expectations); and that, in combination, offer a reasonable estimate of anticipated experience affecting LACERA. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of the Plan and to reasonable expectations, which, in combination, represent a reasonable estimate of anticipated experience for LACERA. The valuation results were developed using models intended for valuations that use standard actuarial techniques.

This valuation report is only an estimate of LACERA's financial condition as of a single date. It can neither predict LACERA's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of benefits, only the timing of 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, although for informational purposes we have shown valuation results at +/- 0.5% on the investment return assumption at the end of the Executive Summary.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Investments has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix A of this report.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts of LACERA. The calculations in the enclosed report have been made on a basis consistent with our understanding of LACERA's funding requirements as stated under their Funding Policy, with a modification to reflect the three-year phase-in of the employer contribution rate change due to the new assumptions. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. Milliman will provide LACERA financial reporting results relevant to GASB Statements No. 67 and 68 in separate reports.

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 exceptions:

(a) LACERA may provide a copy of Milliman's work, in its entirety, to LACERA'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 LACERA.

(b) LACERA 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 sponsors. 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 are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We would like to express our appreciation to members of LACERA staff who gave substantial assistance in supplying the data on which this report is based.

We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,

Mark Olleman, FSA, EA, MAAA
Consulting Actuary

Nick Collier, ASA, EA, MAAA
Consulting Actuary

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

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Appendices

1. Summary of Findings

2020 Valuation Results

	Fiscal Year Beginning	
	July 1, 2021	July 1, 2020
Employer Contribution Rate with phase-in	24.64% (1)	22.59% (2)
Funded Ratio	76.3%	77.2%

1. *The FYB 2021 employer contribution rate was calculated in the June 30, 2020 valuation. The FYB 2021 employer contribution rate without phase-in is 25.74%.*
2. *The FYB 2020 employer contribution rate was calculated in the June 30, 2019 valuation.*

This report presents the results of the June 30, 2020 actuarial valuation. This valuation determines the member and employer contribution rates payable starting July 1, 2021. Several key points are summarized below:

Funding: The Funded Ratio decreased from 77.2% to 76.3% primarily due to the recognition of current and prior year asset losses which caused a 0.9% decrease, and salary increases greater than assumed which caused a 0.4% decrease. Contributions to amortize the Unfunded Actuarial Accrued Liability (UAAL) partially offset these decreases and caused the Funded Ratio to decrease by 0.5% less than it otherwise would have. On a market-value basis, the Funded Ratio decreased from 77.3% to 74.0%.

The "Analysis of Change" section that follows later in Section 1 provides an analysis of the sources of change in the Funded Ratio since last year.

Investment Returns: For the fiscal year ending in 2020, the fund returned 1.8% on a market-value basis (net of investment expenses). In total, there was an $2.7 billion loss on market assets relative to the assumed rate of return of 7.00%. Under the actuarial asset method, which recognizes investment gains and losses over a five-year period, the return on actuarial assets was 5.8%, equivalent to a loss of $701 million relative to the assumed return of 7.00%.

COVID-19 Impact: The ongoing pandemic had a negative impact on investment markets in the first half of 2020. The below-assumption return for the fiscal year is reflected in the valuation results, as discussed in this report. We did not observe any other material impact on the valuation results related to COVID-19, although it is possible this may appear in future valuations. In particular, we did not see any significant deviation from the assumptions in the other areas that we believe are most likely to be affected by the pandemic: mortality rates, salary increases, and payroll increases.

Employer Contribution Rates: The total calculated employer contribution rate increased from the prior valuation by 2.05% (from 22.59% to 24.64%) of payroll. The increase in the employer contribution rate is primarily due to the phase-in recognition of assumption and amortization method changes effective June 30, 2019 and the recognition of current and prior year investment losses.

At the January 2020 Board of Investments (BOI) meeting, the BOI adopted a three-year phase-in of the increase in the employer contribution rate due to the new assumptions and amortization method. Without the phase-in of the increase, the total employer contribution rate would be 25.74% effective July 1, 2021. The remaining 1.10% increase due to the new assumptions and amortization method change (25.74% minus 24.64%) will be phased-in with the employer contributions effective July 1, 2022.

The "Analysis of Change" section provides an analysis of the sources of change in employer contribution rates since last year. In addition, the section "Projected Future Employer Contribution Rates" below shows a 10-year projection of employer contribution rates.

Member Contribution Rates: New member contribution rates are recommended for General Plan G and Safety Plan C effective July 1, 2021. General Plan G and Safety Plan C member rates are required to be equal to 50% of the Gross Normal Cost of the respective plan. The recommended member contribution rates are slightly lower for General Plan G and Safety Plan C. Member contribution rates are discussed in detail in Section 5 of this report.

Member contribution rates for all plans, except General Plans E and G and Safety Plan C, vary based on a member's entry age to LACERA and the underlying actuarial assumptions. Since no new assumptions were adopted effective with this valuation, there are no recommended changes to member contribution rates for those plans.

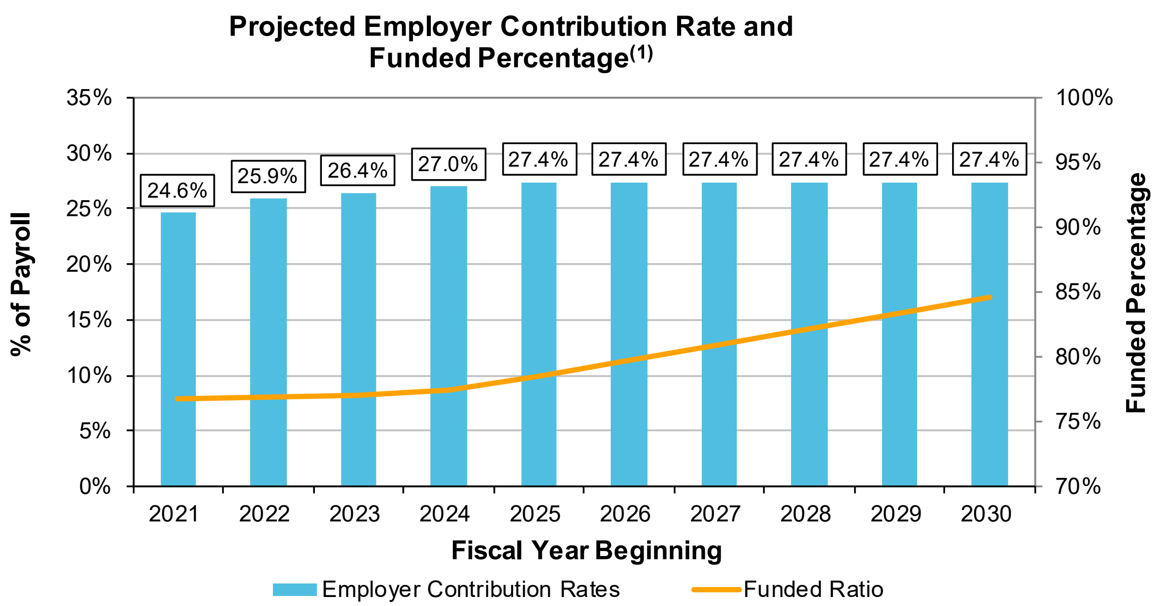
Amortization of the UAAL

LACERA employs a "layered" amortization method to pay off the UAAL. Under this method, the UAAL amount as June 30, 2009 was amortized over a closed 30-year period. Subsequent changes in the UAAL were amortized over new closed 30-year periods. Effective with the June 30, 2019 valuation, all existing layers with more than 22 years remaining were re-amortized over closed 22-year periods. All new UAAL layers are amortized over a 20-year period, beginning with the date the contribution is first expected to be made. Exhibit 12 of this report illustrates in detail the calculation of the total UAAL rate for the fiscal year beginning in 2021.

Projected Future Employer Contribution Rates

The employer contribution rate beginning July 1, 2021 is 24.64% of payroll, which is a weighted average for all LACERA plans. The actual percent of payroll to be contributed by the employers varies by plan as shown in Exhibit 11.

The new calculated employer contribution rate is effective for the fiscal year beginning July 1, 2021. Additional increases are projected in the fiscal year beginning July 1, 2022 as the increase due to assumption and method changes is phased in. Even if all actuarial assumptions are met over the next few years, we project additional changes in the employer contribution rate as deferred asset gains and losses are recognized. To illustrate these impacts, we have performed a 10-year projection of the employer contribution rate and funded ratio that assumes all actuarial assumptions are met, and reflects the phase-in and the projected recognition of the remaining deferred asset gains and losses as of June 30, 2020. This projection is shown in the graph below.



1. Projections assume that all actuarial assumptions are met after June 30, 2020, and reflect the scheduled recognition of asset gains and losses currently being deferred. Actual results will vary.

Analysis of Change

The following table shows an analysis of the primary causes of the change in the employer contribution rate and the Funded Ratio over the last year. The recognition of the 2019 assumption changes was the most significant factor affecting the employer contribution rate, although this was somewhat mitigated by the three-year phase-in of this increase.

Sources of Change	Employer Contribution Rate	Funded Ratio
June 30, 2019 Actuarial Valuation	**22.59%**	**77.2%**
Expected Year-to-Year Change(1)	0.16%	0.5%
Assumption and Method Changes	0.00%	0.0%
Recognized Asset Gain/Loss		
From Current Year	0.44%	-0.7%
From Prior Years	0.14%	-0.2%
Combined Asset Gain/Loss	0.58%	-0.9%
Contributions > Assumed	-0.07%	0.1%
Payroll Increase > Assumed	-0.21%	0.0%
Liability Gain / Loss		
Salary Increase > Assumed	0.32%	-0.4%
Retiree COLAs > Assumed	0.04%	0.0%
Other	0.14%	-0.2%
Combined Liability Gain/Loss	0.50%	-0.6%
Recognition of 2019 Assumption Changes	1.09%	0.0%
Total Change	**2.05%**	**-0.9%**
June 30, 2020 Actuarial Valuation	**24.64%**	**76.3%**

1. *Expected increase in employer contribution rate reflects the impact of the phase-in of 2019 assumption changes.*

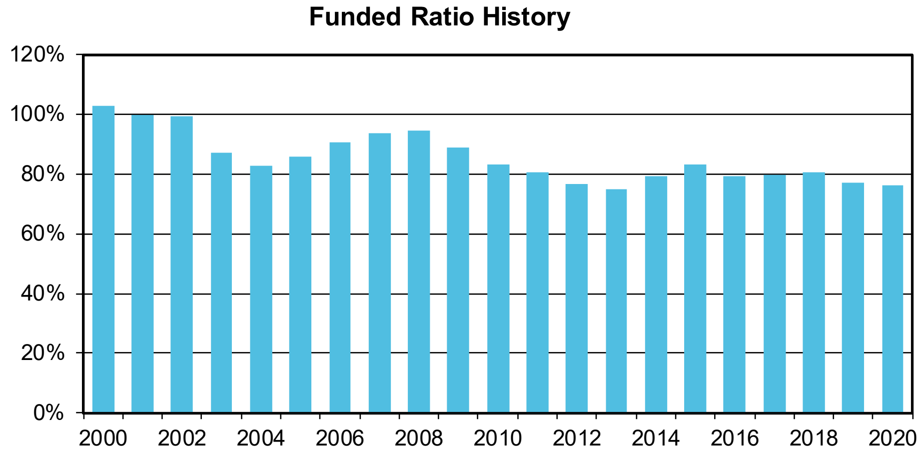
Based on the 2019 valuation, the expected UAAL as of June 30, 2020 was $17.3 billion. The actual UAAL as of June 30, 2020 is $18.5 billion. The additional UAAL is primarily due to the recognition of actuarial asset losses from the current and prior years, and salary increases greater than assumed in the prior fiscal year. An analysis of the difference between expected and actual UAAL is shown in Exhibit 8a.

Funding Progress

One measure of the funding adequacy of the system is the Funded Ratio, which compares the Valuation Assets (the actuarial value of assets net of certain non-valuation reserves) to the Actuarial Accrued Liability (AAL). The Funded Ratio shown in this valuation is appropriate for assessing the future contributions needed. However, it is not appropriate for assessing the sufficiency of current system assets to cover the estimated cost of settling the system's accrued benefit obligations. As shown in Exhibit 1, the Funded Ratio is different depending on whether the Market Assets or Valuation Assets is used.

As shown in the graph that follows, the Funded Ratio was 94.5% as of June 30, 2008, but decreased steadily over the five-year period following the economic downturn to a low of 75.0% as of June 30, 2013 as asset losses were gradually recognized. The Funded Ratio has increased slightly since that time, although this increase has been slow as the Board has strengthened the actuarial assumptions over the period, thereby increasing the AAL and offsetting some of the increase in the Funded Ratio from other sources.

A historical perspective of the Funded Ratio is shown in the following chart.



Assets

On June 30, 2020, the market value of the fund (including non-valuation reserves) was $58.5 billion. The actuarial value of assets was $60.3 billion, split between $0.6 billion of Non-Valuation Assets and $59.8 billion of Valuation Assets (values do not sum due to rounding). The actuarial value of assets is approximately 103% of the market value of assets.

On a market-value basis, for the fiscal year ended June 30, 2020, LACERA earned 1.8% net of investment expenses, as reported by LACERA in the June 30, 2020 CAFR. The market value of assets is used in calculating the actuarial value of assets. Under the actuarial asset method, investment gains and losses are recognized (or smoothed in) over a five-year period. Due to the recognition of current and deferred net asset losses, the return on the actuarial valuation of assets is 5.8% net of investment and administrative expenses, and is less than the assumed return for the prior year of 7.00%.

Valuation Assets are used in the calculation of the UAAL contribution rate and Funded Ratio. Valuation Assets are equal to the actuarial value of assets less certain non-valuation reserves. The Valuation Assets of $59.8 billion are equal to 76.3% of the $78.3 billion AAL.

The non-valuation reserves are set aside for obligations or contingencies. They are not used to fund the retirement benefits unless explicitly stated. As of June 30, 2020, the non-valuation reserves include only the Contingency Reserve, which is equal to 1% of the market value of assets, or $585 million. Note that the Contingency Reserve affects the assets used in the actuarial valuation and is not part of the accounting process used in creating the financial statements.

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 valuation. Note that if the STAR reserve of $614 million was excluded from the Valuation Assets, the UAAL would increase by this amount. Under this hypothetical scenario, the calculated employer contribution rate for the fiscal year beginning July 1, 2021 would increase by 0.51% of payroll, and the Funded Ratio would decrease by 0.7% to 75.6%.

Future Impact of Recognition of Deferred Gains/Losses

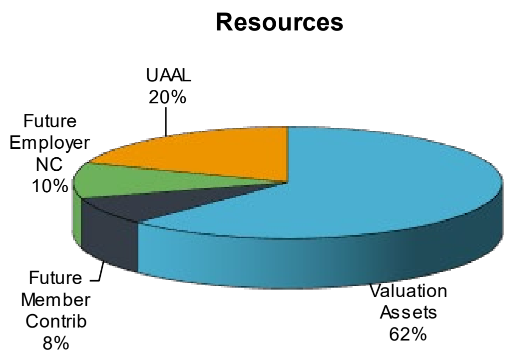
The smoothing method is currently deferring $1.8 billion in net asset losses. As the currently deferred gains and losses are recognized over upcoming valuations, it is projected there will be fluctuations in the calculated employer contribution rate.

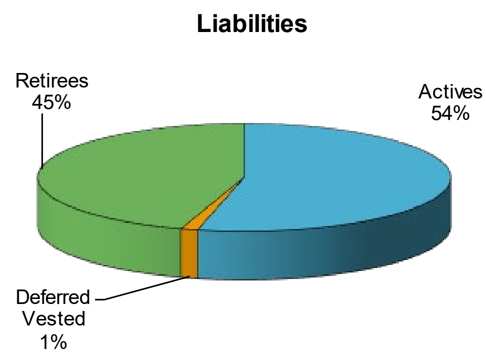
The potential future impact of the recognition of these deferred gains and losses on the projected employer contribution rate is included in the graph on page 3.

Actuarial Balance Sheet

The first step in the valuation process is to compare the total actuarial assets of LACERA with its total liabilities for all plans. In this analysis, assets are those currently on hand at the actuarial value and also include expected future contributions by both the employers and members. Liabilities reflect benefits already earned in the past and those expected to be earned in the future by current members. This relationship is shown in the pie charts below. The AAL is the total of these liabilities less expected future Normal Cost contributions.

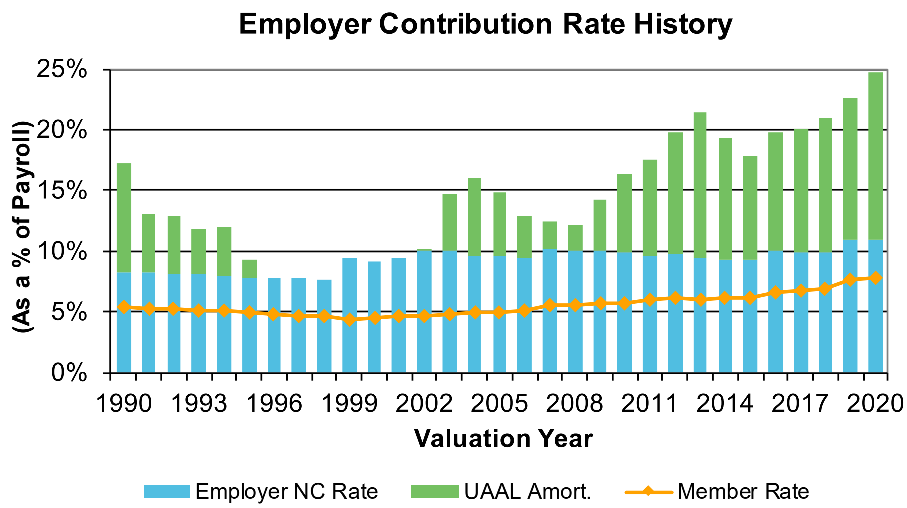
The 2020 actuarial valuation indicates that LACERA's Valuation Assets are less than its AAL. The difference between these two values is the UAAL. It is discussed, along with the effect of the experience gains and losses, in detail in Section 4, Actuarial Liabilities.





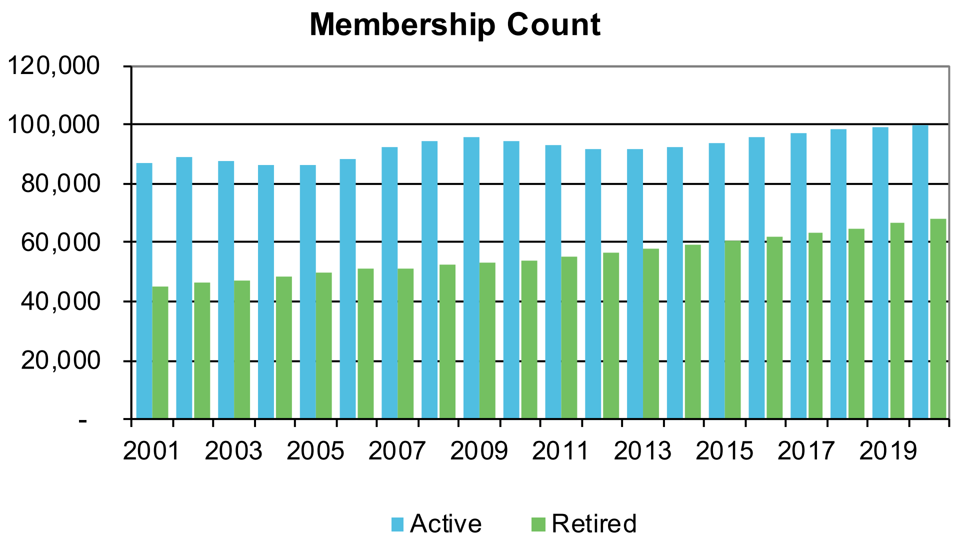
Employer Contribution Rate History

Based on the results of the valuation, the calculated employer contribution rate should increase for the fiscal year beginning in 2021 to a rate of 24.64% of pay. A historical perspective of the employer contribution rates is shown in the following graph.

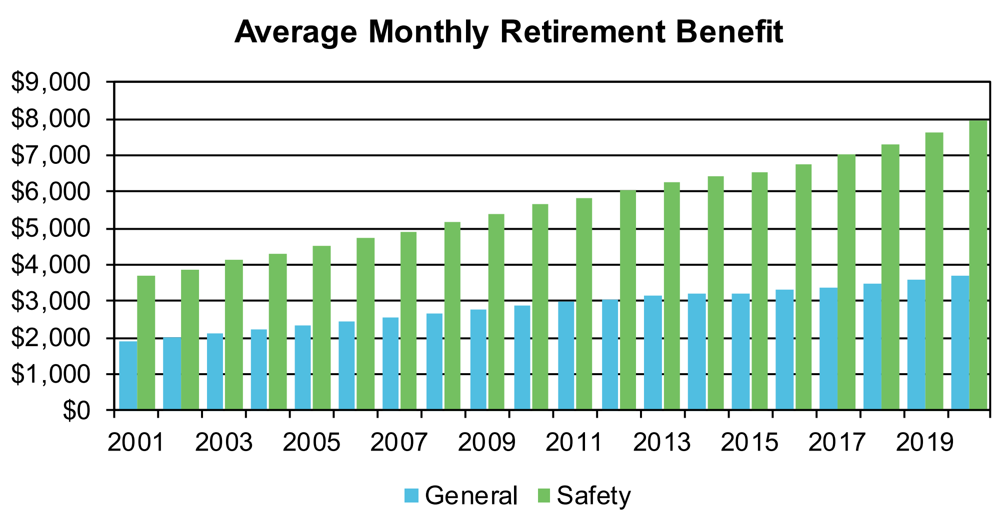

Employer Contribution Rate History
25%
20%
15%
10%
5%
0%
(As a % of Payroll)
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
Valuation Year
Employer NC Rate
UAAL Amort.
Member Rate

Member Information

Active membership and payroll have each increased since 2019. As of June 30, 2020, the annualized payroll is $8.8 billion for 100,108 active members. This reflects a 3.7% increase in average member pay and a 0.9% increase in the number of active members.



Retired member counts and average retirement benefit amounts continue to increase steadily. For 2020, there were 68,012 retired members and beneficiaries with an average benefit of $4,541 per month. This represents a 2.3% increase in count and a 3.6% increase in the average monthly benefit.



Analysis of Change in Member Population

The following table summarizes the year-to-year change in member population.

	Active Members	Inactive Members	Service Retired Members	Disabled Retired Members	Beneficiaries in Pay	Total
As of June 30, 2019	**99,186**	**15,567**	**47,517**	**9,891**	**9,099**	**181,260**
New Members	5,450	128	18		752	6,348
Status Change:						
to Active	136	(136)				-
to Inactive	(1,392)	1,392				-
to Service Retirement	(2,518)	(405)	2,923			-
to Disabled Retirement	(228)	(9)	(244)	481		-
Refunds	(283)	(367)				(650)
Terminated non-vested	(33)					(33)
Benefits Expired			(11)		(17)	(28)
Deaths	(210)	(2)	(1,575)	(267)	(555)	(2,609)
As of June 30, 2020	**100,108**	**16,168**	**48,628**	**10,105**	**9,279**	**184,288**

Note: Inactive Members include non-vested former members who have not taken a refund of their contributions.

Sensitivity to Investment Return

The valuation results are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing the ultimate cost. Of the assumptions, the investment return generally has the biggest impact. The following table provides a simple analysis on how the short-term costs are affected by the investment return assumption. Note that the long-term cost of the Plan will be largely driven by actual investment returns and other experience; the assumptions used in the valuation impact the timing of the contributions over the long term.

	Investment Return Assumption		
	Current 7.00%	+0.5% 7.50%	-0.5% 6.50%
Employer Contribution Rate	24.64%	20.00%	29.53%
Change		-4.64%	4.89%
Funded Ratio	76.3%	81.2%	71.7%
Change		4.9%	-4.6%

Summary Valuation Results

Exhibit 1 on the following page presents a summary of key valuation elements as of June 30, 2020 and June 30, 2019, and shows the relative change over the past year. More detail on each of these elements can be found in the following sections and exhibits of this report.

Exhibit 1
Summary of Significant Valuation Results

	June 30, 2020	June 30, 2019	Percentage Change
Total Membership			
A. Active Members	100,108	99,186	0.9%
B. Retired Members & Beneficiaries	68,012	66,507	2.3%
C. Vested Former Members[1]	16,168	15,567	3.9%
D. Total	184,288	181,260	1.7%
Pay Rate as of valuation date			
A. Annual Total ($millions)	$ 8,819	$ 8,423	4.7%
B. Monthly Average per Active Member	7,341	7,076	3.7%
Average Monthly Benefit Paid to Current Retirees and Beneficiaries			
A. Service Retirement	4,469	4,334	3.1%
B. Disability Retirement	6,141	5,856	4.9%
C. Surviving Spouse and Dependents	3,176	3,052	4.1%
D. Total	4,541	4,385	3.6%
Actuarial Accrued Liability ($millions)			
A. Active Members	33,775	32,400	4.2%
B. Retired Members	43,239	41,021	5.4%
C. Vested Former Members	1,261	1,214	3.9%
D. Total	78,275	74,635	4.9%
Assets			
A. Market Value of Fund ($millions)	58,510	58,295	0.4%
B. Actuarial Value ($millions)			
1. Valuation Reserves	59,763	57,617	3.7%
2. Non-valuation Reserves	585	583	0.4%
C. Annual Investment Return			
1. Market Basis (Net Return)	1.8%	6.4%	n/a
2. Valuation (Actuarial) Basis	5.8%	6.5%	n/a
Unfunded Actuarial Accrued Liability ($ millions)	$ 18,512	$ 17,018	8.8%
Employer contribution rate for all plans combined as a percent of total payroll			
A. Gross Normal Cost	18.69%	18.54%	0.8%
B. Member Contributions[2]	(7.80)%	(7.68)%	1.6%
C. Employer Normal Cost	10.89%	10.86%	0.3%
D. UAAL Amortization	14.85%	13.92%	6.7%
E. Calculated Contribution Rate	25.74%	24.78%	3.9%
F. Deferred Recognition of new assumptions	(1.10)%	(2.19)%	n/a
G. Employer Contribution Rate with phase-in	24.64%	22.59%	9.1%
Funded Ratio	76.3%	77.2%	(1.2)%
Results Based on Market Value (Informational Purposes Only)			
Calculated Contribution Rate	26.15%	22.51%	16.2%
Funded Ratio (excluding non-valuation reserves)	74.0%	77.3%	(4.3)%

1. Includes non-vested former members with contributions on deposit.
2. Includes non-contributory members. The average rate for contributory plans increased from 8.32 % to 9.13%.

2. Scope of the Report

This report presents the actuarial valuation of the Los Angeles County Employees Retirement Association as of June 30, 2020. This valuation was requested by the Board of Investments. Section 31453 of the County Employees Retirement Law of 1937 (the ’37 Act) requires an actuarial valuation to be performed at least every three years for the purpose of setting contribution rates. The 2020 valuation meets this requirement. Under LACERA’s Funding Policy, annual valuations determine the employer contribution rates each year. Member contribution rates for all plans except General Plan G and Safety Plan C are set in years in which relevant actuarial assumptions are altered, such as 2020. For members of General Plan G and Safety Plan C, member contribution rates are recalculated each year, based on one-half of the Plan’s normal cost rate.

A summary of the findings resulting from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the Plan. The assets and investment income are presented in Exhibits 2-4. Exhibit 5 develops the actuarial value of assets as of June 30, 2020. Exhibit 6 develops the Valuation Assets used for funding benefits.

Section 4 describes the benefit obligations of LACERA. Exhibit 7 is the Actuarial Balance Sheet and Exhibit 8a analyzes the change in UAAL. Exhibit 8b shows a history of these changes.

Section 5 discusses the member contribution rates.

Section 6 discusses the employer contributions rates.

Section 7 discloses supplemental information for use in the Comprehensive Annual Financial Report (CAFR). Milliman provides LACERA financial reporting information relevant to GASB Statements No. 67 and 68 in separate reports.

Section 8 shows the estimated cash flow of the Plan, including a projection of both contributions and benefit payments.

This report includes several appendices:

Appendix A	A summary of the actuarial procedures and assumptions used to estimate liabilities and contributions.
Appendix B	A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2020.
Appendix C	Schedules of valuation data classified by various categories of plan members.
Appendix D	Member contribution rates by plan.
Appendix E	Historical information.
Appendix F	A glossary of actuarial terms used in this report.

3. Assets

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2020. On that date, the assets available for the payment of retirement benefits are appraised. These assets are compared with the actuarial liabilities (both accrued and future) for current members, which are generally in excess of the actuarial assets. The purpose of the valuation is to determine what future contributions by the members and employers are needed to pay all expected future benefits.

This section of the report looks at the assets used for funding purposes. In the next section, the actuarial liabilities will be discussed. Section 6 reviews the process for determining required contributions based on the relationship between the valuation assets and the actuarial liabilities.

A historical summary of the Plan's assets is presented below (dollar amounts in billions).

		Actuarial Value		
	Market Value of Total Assets	Non-Valuation Reserves	Valuation Assets	Total Fund Return (%)[1]
2011	$ 39.5	$ 0.9	$ 39.2	20.2
2012	38.3	0.9	39.0	0.0
2013	41.8	0.4	39.9	11.9
2014	47.7	0.5	43.7	16.5
2015	48.8	0.5	47.3	4.1
2016	47.8	0.5	49.4	0.8
2017	52.7	0.5	52.2	12.7
2018	56.3	0.6	55.2	9.0
2019	58.3	0.6	57.6	6.4
2020	58.5	0.6	59.8	1.8

1. As reported in the Investment Section of LACERA's CAFR for the fiscal year ended June 30, 2020. All returns are shown net of investment expenses and calculated on a time-weighted basis.

On June 30, 2020, the total market value of the fund, less current liabilities, was $58.5 billion. The actuarial value of the fund was determined to be $60.3 billion, including the non-valuation reserves. The average total fund return for the last 10 years is 8.1% net of fees, as reported by LACERA.

Financial Exhibits

Exhibit 2 presents a Statement of Fiduciary Net Position and Exhibit 3 presents a Statement of Changes in Fiduciary Net Position. Exhibit 4 describes the allocation of LACERA's assets by the various reserve values determined for accounting purposes as disclosed in the audited financial statements.

Exhibits 2-4 are taken directly from data furnished to us by LACERA in its annual financial report. We have accepted these tables for use in this report without audit, but we have reviewed them both for the prior year and the current year for reasonableness and consistency with previous reports.

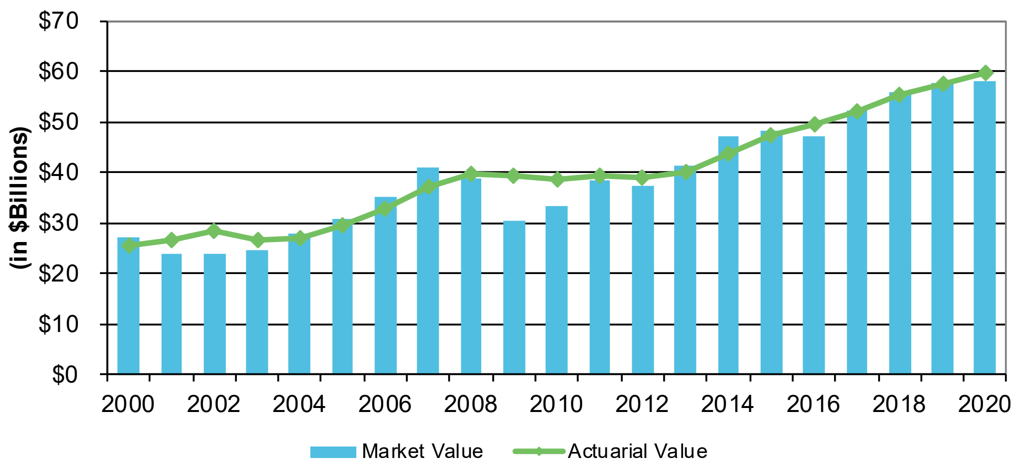
Actuarial Asset Method

The actuarial asset method computes the expected market value of assets based on the prior year's market value of assets, the actual cash flow of contributions and benefit payments, and the assumed investment rate of return. For the previous year, the assumed rate of return was 7.00%, net of all expenses. The difference between the actual market value and the expected market value is recognized evenly (also referred to as "smoothing") over a five-year period.

Actuarial Value of Assets

The development of the June 30, 2020 actuarial value of assets is shown in Exhibit 5. Note the smoothing process is deferring past investment gains and losses, and is currently in a net actuarial loss position. The result is an actuarial value of assets that is more than the June 30, 2020 market value by $1.8 billion. The following graph shows a historical comparison of the actuarial and market assets used for valuation purposes.

Applicable Valuation Assets



Funding Policy

Under the Board of Investments' long-term Funding Policy, the following is the allocation of actuarial assets. A Funded Ratio equal to 100% is the Funding Goal. Note that although the allocation of assets used in the actuarial valuation is similar to the process LACERA uses for accounting purposes, there are some differences, including the earnings considered for interest crediting purposes.

For funding purposes and for setting contributions rates, recognized earnings for a plan year is the recognized investment income as determined by the Actuarial Asset Method and includes both unrealized income and net realized income, together with the prior balance in the Contingency Reserve. The allocation of recognized earnings is performed once a year as of the Valuation Date in the following order of priority:

Priority 1: Allocate to the Member Reserve so the Actuarial Asset allocation to that Reserve equals the accounting value for that Reserve on the Valuation Date.

Priority 2: Allocate to the Advanced Employer Contributions Reserve so the Actuarial Asset allocation to that Reserve equals the accounting value for that Reserve on the Valuation Date.

Priority 3: Allocate to the Employer Reserve so the Actuarial Asset allocation to that reserve equals the accounting value for that Reserve on the Valuation Date.

Priority 4: Allocate to the County Contribution Credit Reserve so the Actuarial Asset allocation to that reserve equals the accounting value for that Reserve on the Valuation Date. Note: This Reserve is not a Valuation Reserve.

Priority 5: Allocate to the Employer Reserve so the total amounts allocated equal one-year's interest at the assumed interest rate used in the actuarial valuation as of the preceding Valuation Date to the extent there are positive recognized earnings to allocate.

Priority 6: Allocate to the Contingency Reserve an amount equal to 1% of the Market Value of Assets as of the Valuation Date to the extent there are positive recognized earnings to allocate.

Priority 7: Allocate to the Employer Reserve an amount, if necessary, when combined with other Valuation Reserves, to provide 100% funding of the AAL as of the Valuation Date to reach the Funding Goal. In the event there are negative recognized earnings, allocate the entire amount.

Priority 8: The Board may consider additional actions as permitted under the County Employee Retirement Law (CERL) using funds in excess of the amount needed to meet the Funding Goal for funding discretionary benefits. "Excess Earnings" as defined in the County Employees Retirement Law (CERL) may be appropriated upon reaching the Funding Goal; however, the Board may consider adjustment to the employer's contributions only upon satisfying California Government Code Section 7522.52(b).

Valuation Assets

Valuation Assets are the actuarial value of the fund, less the value of any Non-Valuation Reserves. Non-Valuation Reserves include Contingency Reserves and other reserves that have been set aside for current liabilities and special benefits to be funded outside of the actuarially determined contribution rates. The Contingency Reserve is set at a minimum of 1.0% of the market value of the total assets.

The Funding Policy allows the STAR Reserve to be allocated to the Valuation Assets (subject to periodic review), if needed. The June 30, 2020 STAR Reserve accounting value of $614 million was included in Valuation Assets and used to determine the employer contribution rates for the fiscal year beginning July 1, 2021. Although the STAR Reserve is included in the 2020 Valuation Assets, there is no liability included in this valuation for STAR benefits that may be granted in the future.

The Non-Valuation Reserves shown in Exhibit 6 for funding purposes are not the same as those shown in the audited financial statements and in Exhibit 4.

Exhibit 2
Statement of Fiduciary Net Position
As of June 30, 2020 and June 30, 2019

	2020	2019
Assets		
Cash and Short-Term Investments	$ 2,668,514,883	$ 1,310,026,598
Cash Collateral on Loaned Securities	1,177,374,278	814,829,353
Receivables		
Contributions Receivable	101,730,406	96,481,733
Accounts Receivable - Sale of Investments	697,420,087	1,046,945,184
Accrued Interest and Dividends	133,935,398	102,714,643
Accounts Receivable - Other	7,586,880	8,334,664
Total Receivables	940,672,771	1,254,476,224
Investments at Fair Value		
Equity	23,332,239,318	25,836,066,007
Fixed Income	18,778,182,107	18,028,747,241
Private Equity	7,141,780,830	6,028,264,809
Real Estate	5,128,770,609	6,192,619,038
Hedge Funds	2,193,437,377	1,890,739,586
Total Investments	56,574,410,240	57,976,436,681
Total Assets	**61,360,972,171**	**61,355,768,857**
Liabilities		
Accounts Payable - Purchase of Investments	1,598,943,189	2,162,819,244
Retiree Payroll and Other Payables	1,176,761	921,886
Accrued Expenses	34,887,345	44,518,045
Tax Withholding Payable	38,002,636	35,504,456
Obligations under Securities Lending Program	1,177,374,278	814,829,353
Accounts Payable - Other	180,051	2,339,307
Total Liabilities	**2,850,564,261**	**3,060,932,291**
Fiduciary Net Position Restricted For Pension Benefits	**$ 58,510,407,911**	**$ 58,294,836,565**

Exhibit 3
Statement of Changes in Fiduciary Net Position
For the Fiscal Years Ended June 30, 2020 and 2019

	2020	2019
Additions		
Contributions		
Employer	$ 1,800,137,447	$ 1,708,121,851
Member[1]	659,295,961	595,444,371
Total Contributions	2,459,433,409	2,303,566,222
Investment Income		
From Investing Activities:		
Net Appreciation/(Depreciation) in Fair Value of Investments	(4,256,243,407)	1,215,624,890
Investment Income/(Loss)	5,906,599,371	2,188,735,905
Total Investing Activity Income	1,650,355,964	3,404,360,796
Less Expenses From Investing Activities	(209,320,451)	(233,125,624)
Net Investing Activity Income	1,441,035,513	3,171,235,172
From Securities Lending Activities:		
Securities Lending Income	15,987,146	26,146,035
Less Expenses From Securities Lending Activities:		
Borrower Rebates	(10,030,889)	(20,545,040)
Management Fees	(1,115,182)	(1,112,831)
Total Expenses from Securities Lending Activities	(11,146,071)	(21,657,871)
Net Securities Lending Income	4,841,076	4,488,164
Total Net Investment Income	1,445,876,588	3,175,723,336
Miscellaneous	2,382,427	5,958,105
Total Additions	3,907,692,424	5,485,247,662
Deductions		
Retiree Payroll	3,578,878,907	3,375,752,179
Administrative Expenses	72,054,032	70,800,052
Investment Expenses	13,329,577	12,105,588
Refunds	25,231,451	28,691,156
Lump Sum Death Benefits	2,230,036	2,711,348
Miscellaneous	397,076	332,945
Total Deductions	3,692,121,078	3,490,393,268
Net Increase/(Decrease)	215,571,346	1,994,854,395
Fiduciary Net Position Restricted For Pension Benefits		
Beginning of Year	58,294,836,565	56,299,982,171
End of Year	**$ 58,510,407,911**	**$ 58,294,836,565**

1. 2020 member contributions includes employer pick-up contributions.

Exhibit 4
Allocation of Assets by Accounting Reserve Amounts

(Dollars in Thousands)

	June 30, 2020	June 30, 2019
1. Member Reserves		
a. Active Members	$ 23,481,576	$ 22,363,377
b. Unclaimed Deposits	-	-
c. Total Member Reserves	23,481,576	22,363,377
2. Employer Reserves		
a. Actual Employer Contributions	25,818,509	22,464,894
b. Advanced Employer Contributions	-	-
c. Total Employer Contributions	25,818,509	22,464,894
3. County Contribution Credit Reserve	-	-
4. STAR Reserve	614,011	614,011
5. Contingency Reserve	-	-
6. Total Reserves at Book Value	49,914,096	45,442,282
7. Unrealized Investment Portfolio Appreciation	8,596,312	12,852,555
8. **Total Reserves at Fair Value**	**$ 58,510,408**	**$ 58,294,837**

Note: These amounts were determined by LACERA for accounting purposes and are reported in the CAFR for the fiscal year ended June 30, 2020.

Exhibit 5
Five-Year Smoothing of Gains and Losses on Market Value

(Dollars in Thousands)

June 30, 2020 Valuation

Plan Year Ending	Contributions	Benefit Payments	Expected Market Value	Actual Market Value	Phase-Out of Gain / (Loss)				
06/30/2020	$ 2,459,433	$ 3,606,340	$ 61,189,106	$ 58,510,408	80.00%	x	$ (2,678,698)	=	$ (2,142,958)
06/30/2019	2,303,566	3,407,155	59,238,837	58,294,837	60.00%	x	(944,000)	=	(566,400)
06/30/2018	2,116,085	3,203,375	55,441,551	56,299,982	40.00%	x	858,431	=	343,372
06/30/2017	1,857,938	3,029,633	50,102,154	52,743,651	20.00%	x	2,641,497	=	528,299
06/30/2016	1,901,795	2,889,186	51,455,977	47,846,694	0.00%	x	(3,609,283)	=	0
							(a) Total Phase-Out of Gain / (Loss)	=	$ (1,837,687)
							(b) Total Market Value of Assets	=	$ 58,510,408
							(c) Total Actuarial Value of Assets [(b) - (a)]	=	**$ 60,348,095**

Total Actuarial Value of Assets = Total Market Value of Assets less the Total Phase-Out amount
Phase-Out amounts will be recognized in future years.

Projected Recognition of Actuarial Asset Gains / (Losses) in Future Valuations

	2021 Val	2022 Val	2023 Val	2024 Val	Total
Amount to be Recognized	$ (24,554)	$ (552,853)	$ (724,540)	$ (535,740)	$ (1,837,687)

Exhibit 6
Allocation of Valuation and Non-Valuation Assets

(Dollars in Thousands)

	June 30, 2020	June 30, 2019
1. Total Market Value of Assets	$ 61,360,972	$ 61,355,769
2. Current Liabilities	2,850,564	3,060,932
3. Net Assets Held in Trust for Pension Benefits	58,510,408	58,294,837
4. Market Stabilization Reserve(1)	(1,837,687)	94,601
5. Actuarial Value of Fund Assets	60,348,095	58,200,236
6. Non-Valuation Reserves(2)		
a. Unclaimed Deposits	-	-
b. Contingency Reserve	585,104	582,948
c. Advanced Employer Contributions	-	-
d. County Contribution Credit Reserve	-	-
e. Reserve for STAR Program	-	-
f. Total	585,104	582,948
7. Valuation Assets(2)		
a. Member Reserves	23,481,576	22,363,377
b. Employer Reserves for Funding Purposes	36,281,415	35,253,911
c. Total	59,762,991	57,617,288

1. The Market Stabilization Reserve represents the difference between the Market Value of the fund less Current Liabilities, and the Actuarial Value of the fund as determined in Exhibit 5.

2. The values used for funding purposes for all reserves are based on the Board's Funding Policy. Amounts used for funding purposes may differ from those reported in the audited financial statements as shown in Exhibit 4.

4. Actuarial Liabilities

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of LACERA's assets as of the valuation date, June 30, 2020. In this section, the discussion will focus on the commitments of LACERA for retirement benefits, which are referred to as its actuarial liabilities.

Actuarial Balance Sheet – Liabilities

Actuarial liabilities attributable to both past and future benefits are included on the actuarial balance sheet. The difference between the Valuation Assets and the total actuarial liabilities is the amount that needs to be funded by future member and employer contributions. Both the current and future assets (contributions) are included on the actuarial balance sheet and compared to the total actuarial liabilities. The determination of the level of future member and employer contributions needed is discussed in the next section.

Exhibit 7 contains an analysis of the actuarial present value of all future benefits for inactive members (both retired and vested former members) and active members. The analysis is given by class of membership, by plan and by type of benefit. Note that for purposes of this exhibit the Valuation Assets are shown allocated by plan in proportion to each plan's reserves (employer and member).

The actuarial liabilities include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes measures of both benefits already earned and future benefits to be earned. For all members, active and inactive, the value extends over the rest of their lives and for the lives of any surviving beneficiaries.

The actuarial assumptions used to determine the liabilities are based on the results of the 2019 Investigation of Experience Report. New assumptions were adopted by the Board effective with the June 30, 2020 actuarial valuation. See Appendix A of this report for details.

All liabilities reflect the benefits effective through June 30, 2020. This includes permanent STAR COLAs that have been adopted through the valuation date, but does not include the value of any STAR benefits that may be granted in the future.

Exhibit 7
Actuarial Balance Sheet – June 30, 2020

(Dollars in Millions)

	General						Safety			
	Plan A	Plan B	Plan C	Plan D	Plan E	Plan G	Plan A	Plan B	Plan C	All Plans
LIABILITIES										
Present Value of Benefits - Inactives										
- Retirees and Beneficiaries	$ 11,223	$ 480	$ 282	$ 9,688	$ 4,420	$ 14	$ 7,197	$ 9,926	$ 9	$ 43,239
- Vested Former	7	1	1	622	448	42	0	136	4	1,261
- Inactive Total	11,230	481	283	10,310	4,868	56	7,197	10,062	13	44,500
Present Value of Benefits - Actives										
- Service Retirement	97	24	30	21,545	6,325	5,882	4	8,812	1,349	44,068
- Transfer Service (prior LACERA plan)	0	0	0	241	439	7	0	13	0	700
- Disability Retirement	1	0	0	919	N/A	434	0	3,260	737	5,351
- Death	1	0	0	376	N/A	135	0	76	24	612
- Termination	0	0	0	181	79	342	0	42	71	715
- Active Total	99	24	30	23,262	6,843	6,800	4	12,203	2,181	51,446
Total Actuarial Liabilities	**$ 11,329**	**$ 505**	**$ 313**	**$ 33,572**	**$ 11,711**	**$ 6,856**	**$ 7,201**	**$ 22,265**	**$ 2,194**	**$ 95,946**
ASSETS										
Valuation Assets	(3,462)	365	280	29,658	13,853	2,449	(1,937)	18,064	493	59,763
PV Future Member Contributions	1	1	0	2,897	N/A	2,865	0	1,069	977	7,810
PV Future Employer Normal Cost Contributions	3	0	1	3,320	1,124	2,589	0	1,922	902	9,861
UAAL or (Surplus Funding)	14,787	139	32	(2,303)	(3,266)	(1,047)	9,138	1,210	(178)	18,512
Total Current and Future Assets	**$ 11,329**	**$ 505**	**$ 313**	**$ 33,572**	**$ 11,711**	**$ 6,856**	**$ 7,201**	**$ 22,265**	**$ 2,194**	**$ 95,946**

Actuarial Balance Sheet – Assets

For the purpose of the Actuarial Balance Sheet, LACERA's assets are equal to the sum of:

(a) Assets currently available to pay benefits and considered for funding purposes (the Valuation Assets);

(b) The present value of future contributions expected to be made by current active members; and

(c) The present value of future contributions expected to be made by the employer.

Actuarial Cost Method

The Actuarial Balance sheet determines the amount of future contributions that are needed, but the method used to determine when those future contributions will be made in future years is called the "actuarial cost method." For this valuation, the entry age actuarial cost method has been used. Under this method, the contributions required to meet the difference between current assets and current actuarial liabilities are allocated each year between two elements:

- A normal cost amount; and
- An amount to amortize the UAAL (Unfunded Actuarial Accrued Liability). Note that the UAAL may be negative (representing current assets greater than current actuarial liabilities).

The two items described above – the Normal Cost and UAAL – are the keys to understanding the actuarial cost method.

Normal Cost

The Normal Cost is the theoretical contribution rate that will meet the ongoing costs of a group of average new employees. Suppose that a group of new employees was covered under a separate fund from which all benefits and to which all contributions and associated investment returns were paid. Under the entry age actuarial cost method, the Normal Cost contribution rate maintains the funding of benefits as a level percentage of pay. If experience follows the actuarial assumptions precisely, the fund would be completely liquidated when the last payment to the last survivor of the group is made.

By applying the Normal Cost contribution rate to the present value of salaries expected to be paid in the future, we determine the present value of future Normal Cost contributions. Future contributions are expected to be made by both the members and the employer. The member contribution rates are determined based upon requirements established in the '37 Act and the actuarial assumptions. Based on these member contribution rates, we determine the present value of future member contributions. We subtract that value from the total future Normal Cost contributions expected, based on the entry age cost method. The remaining difference is the employer's portion of the future Normal Cost contributions.

Actuarial Accrued Liability

The difference between the present value of all future obligations and the present value of the future Normal Cost contributions is referred to as the Actuarial Accrued Liability (AAL). The AAL is calculated and then compared to the value of assets available to fund benefits. The difference is referred to as the UAAL. The results for all LACERA plans in aggregate are summarized below:

(Dollars in millions)	2020	2019	Percent Change
A. Actuarial present value of all future benefits for contributing members, former contributing members, and their survivors	$ 95,946	$ 91,283	5.1%
B. Actuarial present value of total future normal costs for current members	17,671	16,648	6.1%
C. Actuarial accrued liability [A-B]	78,275	74,635	4.9%
D. Valuation Assets	59,763	57,617	3.7%
E. UAAL or (Surplus Funding) [C-D]	18,512	17,018	8.8%
F. Funded Ratio [D/C]	76.3%	77.2%	-1.2%

Unfunded Actuarial Accrued Liability

The portion allocated to service already rendered or accrued is called the AAL. The difference between the AAL and the Valuation Assets is called the Unfunded AAL (UAAL). If a UAAL amount exists, it usually results from prior years' benefit or assumption changes and the net effect of accumulated gains and losses. If the employer had always contributed the current Normal Cost, and if there were no prior benefit or assumption changes, and if actual experience exactly matched the actuarial assumptions, then the present value of all future Normal Cost contributions would be sufficient to fund all benefits and there would be no UAAL.

Exhibit 7 shows how the UAAL was derived for each level of plan benefits. In the Actuarial Balance sheet, the total actuarial liability for all future benefits must be equal to the current and future assets.

The Actuarial Balance Sheet for each plan, as well as its UAAL, is based on an estimated allocation of the total LACERA Valuation Assets, as previously shown in Exhibit 7. The allocation is based on the relative value of each plan's employer and member reserves as reported to us by LACERA. These allocations are shown for illustrative purposes only, as the UAAL contribution rates are paid by the employer based on the valuation results in aggregate.

Funding Adequacy

A key consideration in determining the adequacy of the funding of LACERA is how the UAAL is being funded. Under LACERA's Funding Policy, a new UAAL "layer" is established each year when the Funded Ratio is less than 100% or greater than or equal to 120%. Effective with the June 30, 2019 valuation, all new UAAL layers are amortized over 20-year periods.

If future experience is significantly more favorable than expected based on the actuarial assumptions, then LACERA's UAAL may be eliminated . Conversely, if experience is less favorable, a larger UAAL will develop.

Analysis of Change in Unfunded Actuarial Accrued Liability

The UAAL, at any date after establishment of a retirement plan, is affected by any actuarial gains (decreases in UAAL) or losses (increases in UAAL) arising when the actual experience of the retirement plan varies from the experience anticipated by the actuarial assumptions. To the extent actual experience, as it develops, differs from that expected according to the assumptions used, so also will the emerging costs differ from the estimated costs.

The 2020 actuarial valuation reflects an increase in the UAAL of approximately $1.5 billion since the prior year. The effect of the gains and losses on the UAAL is shown in Exhibit 8a. A summary of these factors is:

- Investment Returns: Returns on market assets were 1.4% (net of investment expenses) compared to the assumed return of 7.00%. This, combined with recognitions of gains and losses from prior periods, resulted in an actuarial asset loss of $701 million.
- Active Member Experience (non salary): This includes gains and losses from termination, service retirement, disability retirement, and death different than assumed. This resulted in an actuarial loss of $91 million.
- Salary Increases: Individual salaries for continuing active members increased at a rate greater than the valuation assumption. This resulted in an actuarial loss of $388 million.
- Actual CPI versus Assumption: The actual CPI increase was greater than assumed for members of Plan A. This resulted in COLA increases more than the assumption, which generated an actuarial loss of $43 million.
- Mortality Experience: An actuarial loss due to mortality generally indicates that retired members are living longer than the current assumption predicts. This year, there was an actuarial loss of $1 million due to mortality.
- Other Experience: Examples of this are gains and losses from retirement and mortality experience of inactive members, reciprocity, and transfers between plans. These factors combined resulted in an actuarial gain of $36 million.

Change in Unfunded Actuarial Accrued Liability – History

Exhibit 8b shows the sources of change in the UAAL over the past five valuations. The single biggest source of annual change in most years, when there are no changes in the assumptions, is the return on investments being either greater than or less than the assumption.

Exhibit 8a
Analysis of Change in Unfunded Actuarial Accrued Liability

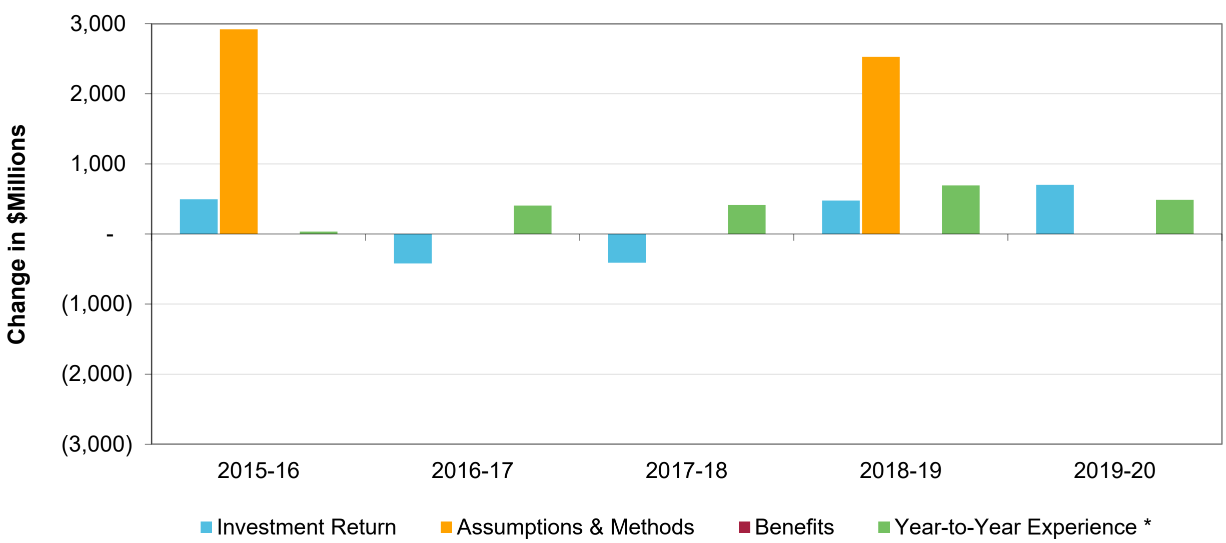
(Dollars in Millions)

		Amount	As a Percent of June 30, 2020 Actuarial Accrued Liability
Unfunded Actuarial Accrued Liability - June 30, 2019		**$ 17,018**	**21.74%**
Interest Accrued		1,212	1.55%
Benefits Accrued (Normal Cost)		1,553	1.98%
Contributions			
Employer - Cash	$ (1,800)		-2.30%
Employer - Contribution Credit	-		0.00%
Member	(659)		-0.84%
Total		(2,459)	-3.14%
Expected Unfunded Actuarial Accrued Liability - June 30, 2020		**$ 17,324**	**22.13%**
Sources of Change:			
Increase in UAAL due to New Assumptions		-	0.00%
Asset (Gains) and Losses			
(Gain) / Loss due to Investment Income		701	0.90%
Liability (Gains) and Losses			
Active Member Experience (non salary)	$ 91		0.12%
Salary Increases Greater than Expected	388		0.50%
CPI Greater than Expected	43		0.05%
Mortality Experience	1		0.00%
All Other Experience	(36)		-0.05%
Total		487	0.62%
Total Changes		**$ 1,188**	1.52%
Unfunded Actuarial Accrued Liability - June 30, 2020		**$ 18,512**	**23.65%**

Exhibit 8b
History of Changes in Unfunded Actuarial Accrued Liability

(Dollars in Millions)

	2015-16	2016-17	2017-18	2018-19	2019-20	2015-20
Prior Valuation UAAL	**$ 9,491**	**$ 12,841**	**$ 13,145**	**$ 13,294**	**$ 17,018**	**$ 9,491**
Increase in UAAL due to:						
Expected Increase / (Decrease)	(102)	320	146	25	306	695
Asset (Gains) and Losses	496	(421)	(411)	477	701	842
Changes in Benefits	-	-	-	-	-	-
Changes in Assumptions	2,922	-	-	2,528	-	5,450
Changes in Methods	-	-	-	-	-	-
Salary Increases	162	277	223	486	388	1,536
CPI Increases	(191)	(139)	45	44	43	(198)
Mortality Experience	(4)	(51)	(20)	(6)	1	(80)
All Other Experience	67	318	166	170	55	776
Total Increase / (Decrease)	**3,350**	**304**	**149**	**3,724**	**1,494**	**9,021**
Valuation UAAL	**$ 12,841**	**$ 13,145**	**$ 13,294**	**$ 17,018**	**$ 18,512**	**$ 18,512**
Funded Ratio	**79.4%**	**79.9%**	**80.6%**	**77.2%**	**76.3%**	**76.3%**



** Year-to-Year Experience includes changes due to Salary, CPI, Mortality and Other Experience.*

5. Member Contributions

Normal Contributions for non-PEPRA Plans

Member contributions are of two types: Normal contributions and cost-of-living contributions.

Normal contributions for each non-PEPRA plan (all plans except General Plan G and Safety Plan C) are defined in the following sections of the County Employees' Retirement Law:

Plan	'37 Act Reference	Formula
General A	31621.3	1/240th of FAC at age 55
General B	31621.1	1/120th of FAC at age 55
General C	31621	1/120th of FAC at age 60
General D	31621	1/120th of FAC at age 60
General E	N/A	Plan E is non-contributory
Safety A	31639.5	1/200th of FAC at age 50
Safety B	31639.25	1/100th of FAC at age 50

Note: FAC = Final Average Compensation

Normal member contributions are determined using the Entry Age Normal Funding Method and the following actuarial assumptions:

1. Expected rate of return on assets.

2. Individual salary increase rate (wage growth + merit).

3. Mortality for members on service retirement.

Since new assumptions were not adopted for the 2020 valuation, we are not recommending changes to the member contribution rates for General Plans A to D and Safety Plans A and B. Member contributions are shown in Appendix D. A sample of these recommended member contribution rates is shown in Exhibit 9.

Member contribution rates for General Plan G and Safety Plan C are discussed below.

Cost-of-Living Contributions for non-PEPRA Plans

The determination of the member cost-of-living (COLA) contributions is based on Section 31873 of the County Employees' Retirement Law. This section requires that the cost of the COLA benefit be shared equally between members and the employer. Unlike the member normal contributions, these rates are based on the actuarial cost of the benefits and reflect all assumptions used in the valuation of liabilities.

Since new assumptions were not adopted for the 2020 valuation we are not recommending changes in the member cost-of-living contribution rates. The recommended cost-of-living contribution rates, expressed as a percentage of the normal member contribution rates, are as follows:

Plan	COLA %
General A	84.46%
General B	25.90%
General C	26.81%
General D	25.94%
General E	0.00%
Safety A	87.15%
Safety B	33.03%

The relative magnitude of these amounts reflects the differences in the normal contribution rates for each plan and the different cost-of-living benefits offered by the different plans. The rate for Plan E is 0.00%, since it is non-contributory.

A sample of the current member contribution rates (normal plus cost-of-living) can be found in Exhibit 9.

Full disclosure of the member rates, showing both the normal and the total (normal plus cost-of-living) contribution rates, can be found in Appendix D.

Member Contribution Rates for General Plan G and Safety Plan C (PEPRA Plans)

Members of the two plans developed in compliance with the California Public Employees' Pension Reform Act of 2013 (PEPRA) contribute a flat rate (i.e., does not vary by entry age) based on whether they are in the General or Safety plan. This rate is set equal to one-half of the total Normal Cost rate. We are recommending changes to the member contribution rates for these plans, as shown below, to reflect the Plan's Normal Cost rates for the 2020 valuation.

	General Plan G	Safety Plan C
All Ages: Recommended	**9.10%**	**14.42%**
All Ages: Current	9.11%	14.54%
Ratio (Recommended / Current)	99.9%	99.2%

Note that the member contribution rates for these plans are further split for purposes of this report into a “Normal” and “Cost of Living” component. The cost-of-living component for these members, as shown in Exhibit 9 below, represents one-half of the cost of the COLA for these plans.

Average Member Rates

The average member contribution rate for only those members in contributory plans at June 30, 2020 is 9.17% of covered payroll. This number compares to 7.80% of covered payroll, which is the average member contribution rate among all members. The 7.80% offsets the gross normal cost to yield the employer normal cost rate. Note that covered payroll does not include pay for PEPRA plan members that is above the PEPRA compensation limit.

Exhibit 9
Sample Member Contribution Rates

	Entry Age	Recommended Rates (Based on 2020 Valuation) Normal	Cost of Living	Total as a % of Pay	Current Rate (Total)	Ratio (New / Current)
General Members						
Plan A	25	3.24%	2.74%	5.98%	5.98%	100.0%
	35	3.99%	3.37%	7.36%	7.36%	100.0%
	45	4.83%	4.08%	8.91%	8.91%	100.0%
	55	5.13%	4.33%	9.46%	9.46%	100.0%
Plan B	25	6.47%	1.68%	8.15%	8.15%	100.0%
	35	7.98%	2.07%	10.05%	10.05%	100.0%
	45	9.66%	2.50%	12.16%	12.16%	100.0%
	55	10.25%	2.65%	12.90%	12.90%	100.0%
Plan C	25	5.52%	1.48%	7.00%	7.00%	100.0%
	35	6.80%	1.82%	8.62%	8.62%	100.0%
	45	8.33%	2.23%	10.56%	10.56%	100.0%
	55	9.68%	2.60%	12.28%	12.28%	100.0%
Plan D	25	5.52%	1.43%	6.95%	6.95%	100.0%
	35	6.80%	1.76%	8.56%	8.56%	100.0%
	45	8.33%	2.16%	10.49%	10.49%	100.0%
	55	9.68%	2.51%	12.19%	12.19%	100.0%
Plan G	All Ages	7.34%	1.76%	9.10%	9.11%	99.9%
Safety Members						
Plan A	25	4.74%	4.13%	8.87%	8.87%	100.0%
	35	5.63%	4.91%	10.54%	10.54%	100.0%
	45	6.70%	5.84%	12.54%	12.54%	100.0%
	55	6.70%	5.84%	12.54%	12.54%	100.0%
Plan B	25	9.48%	3.13%	12.61%	12.61%	100.0%
	35	11.27%	3.72%	14.99%	14.99%	100.0%
	45	13.40%	4.43%	17.83%	17.83%	100.0%
	55	13.40%	4.43%	17.83%	17.83%	100.0%
Plan C	All Ages	11.17%	3.25%	14.42%	14.54%	99.2%

Note: A portion of some of the member contribution rates is paid for (“picked up”) by the employer and is not considered part of the member’s contribution account for refund purposes. Such contributions are referred to as the surcharge amount and are subject to change each year. The rates shown in the table above are prior to any surcharge payments.

6. Employer Contributions

Calculated Employer Contribution Rate

Contributions to LACERA are determined using the Entry Age Normal Cost Method. The portion of the actuarial present value of retirement benefits allocated to a valuation year by the Actuarial Cost Method is called the Normal Cost. These amounts are usually expressed as a percentage of payroll and called the Normal Cost Contribution Rate. Exhibit 10 illustrates the Normal Cost Contribution Rates by type of benefit and for each plan based on this valuation. A comparison with last year is also shown.

Under the Funding Policy, the total contribution rate is set equal to the Normal Cost contribution plus a payment by the employer towards the UAAL. The calculation of the UAAL contribution rate is shown in Exhibit 12. A portion of the Normal Cost contribution is funded by member contributions. The remainder is paid for by the employer.

The total calculated employer contribution rates for each plan, along with a comparison to the prior year's calculated rates, can be found in Exhibit 11. These results are expressed as a percentage of payroll and annual contribution dollars. Note that LACERA's UAAL contribution rate is not determined separately for each plan but is funded evenly as a percentage of pay over salaries for all members.

For the fiscal year beginning in 2021, the total calculated employer contribution rate increases to 24.64% (after reflecting the phase in of the employer contribution rate). This is equal to the aggregate employer Normal Cost contribution rate of 10.89% based on the 2020 valuation, plus a layered amortization payment of the UAAL. The UAAL amortization layers are shown in Exhibit 12. Effective with the June 30, 2019 valuation, all new UAAL layers are amortized over a 20-year period, beginning with the date the contribution is first expected to be made.

(All values as a % of Payroll)

Employer Normal Cost Contribution Rate	10.89%
Layered Amortization of UAAL	14.85%
Calculated Employer Contribution Rate (before phase-in)	25.74%
Deferred Recognition of 2019 Assumption Changes	(1.10)%
Calculated Employer Contribution Rate (with phase-in)	24.64%

The 2.05% increase from last year in the calculated employer contribution rate is partially due to the deferred recognition of assumption and method changes adopted by the Board of Investments effective June 30, 2019. These changes resulted in an increase of 3.29% in the employer contribution rate, which are being phased-in over three fiscal years effective with the fiscal year beginning July 1, 2020. This phase-in resulted in an increase of 1.09% in the employer contribution rate effective July 1, 2021. Recognition of investment losses resulted in an increase of 0.67% in the employer contribution rate, and other sources, including salary increases greater than assumed, increased the employer contribution rate by about 0.29%.

Employer Contribution Rate with phase-in

At the January 2020 meeting, the Board of Investments adopted a three-year phase-in of the impact of the change in employer contribution rate resulting from the new assumptions adopted effective June 30, 2019. For the fiscal year beginning July 1, 2022, the impact of the June 30, 2019 assumption changes will be fully phased in.

Section II 1A(4) of the Funding Policy states: "In no case shall the total amount contributed by the employer be less than the Normal Cost Rate for the year, plus a 30-year amortization of the total UAAL." Based on discussion with LACERA staff, it is our understanding that provided the employer contribution rate, including future phased-in increases, is projected to amortize the UAAL 30 years or less, the employer contribution rate is deemed to meet the requirements under Section II 1A(4) of the Funding Policy.

Exhibit 10
Calculated Normal Cost Contribution Rates – June 30, 2020

	General							Safety				Grand
	Plan A	Plan B	Plan C	Plan D	Plan E	Plan G	Total	Plan A	Plan B	Plan C	Total	Total
A. Normal Cost Contribution Rate												
Service Retirement	21.05%	18.14%	13.41%	14.70%	10.13%	15.57%	14.12%	24.57%	18.60%	17.30%	18.31%	14.90%
Disability Retirement	1.08%	1.01%	0.70%	1.15%	0.00%	1.29%	0.98%	11.57%	9.21%	10.24%	9.44%	2.58%
Death	0.30%	0.28%	0.23%	0.38%	0.00%	0.35%	0.30%	0.41%	0.35%	0.32%	0.34%	0.31%
Termination	0.45%	0.41%	0.40%	0.98%	0.61%	0.99%	0.91%	0.82%	0.83%	0.98%	0.86%	0.90%
Total	**22.88%**	**19.84%**	**14.74%**	**17.21%**	**10.74%**	**18.20%**	**16.31%**	**37.37%**	**28.99%**	**28.84%**	**28.95%**	**18.69%**
B. Member Contributions	(5.75)%	(9.43)%	(7.10)%	(8.02)%	0.00%	(9.10)%	(6.86)%	(11.00)%	(11.14)%	(14.42)%	(11.88)%	(7.80)%
C. Net Employer Normal Cost as of June 30, 2020 (A) - (B)	17.13%	10.41%	7.64%	9.19%	10.74%	9.10%	9.45%	26.37%	17.85%	14.42%	17.07%	10.89%
D. Net Employer Normal Cost as of June 30, 2019	17.34%	9.40%	7.99%	9.21%	10.74%	9.11%	9.50%	26.37%	17.27%	14.54%	16.80%	10.86%
E. Increase (Decrease) as a Percentage of Payroll (C) - (D)	(0.21)%	1.01%	(0.35)%	(0.02)%	0.00%	(0.01)%	(0.05)%	0.00%	0.58%	(0.12)%	0.27%	0.03%
F. Estimated Payroll for fiscal year beginning July 1, 2021*	$ 11	$ 3	$ 3	$ 3,908	$ 1,373	$ 2,087	$ 7,384	$ 0	$ 1,335	$ 386	$ 1,722	$ 9,106
G. Estimated Total Normal Cost Contribution in Dollars (A x F)**	$ 2	$ -	$ -	$ 673	$ 147	$ 380	$ 1,204	$ -	$ 387	$ 111	$ 498	$ 1,702

** Estimated Payroll based upon annualized salary rate as of June 30, 2020 increased by 3.25% wage inflation. Dollar figures in millions.*
*** The timing of the Normal Cost shown in this exhibit is spread over the entire year and corresponds to payroll timing.*

Exhibit 11
Total Employer Contributions

	General							Safety				All
	Plan A	Plan B	Plan C	Plan D	Plan E	Plan G	Total	Plan A	Plan B	Plan C	Total	Plans
A. Net Employer Normal Cost												
1. Basic Benefits	13.61%	8.38%	6.15%	7.55%	8.88%	7.34%	7.73%	20.51%	14.15%	11.17%	14.20%	8.82%
2. Cost-of-Living Benefits	3.52%	2.03%	1.49%	1.64%	1.86%	1.76%	1.72%	5.86%	3.70%	3.25%	2.87%	2.07%
3. Total June 30, 2020	17.13%	10.41%	7.64%	9.19%	10.74%	9.10%	9.45%	26.37%	17.85%	14.42%	17.07%	10.89%
B. UAAL Contribution Rate	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%
C. Calculated June 30, 2020 Contribution Rate (A) + (B)	**31.98%**	**25.26%**	**22.49%**	**24.04%**	**25.59%**	**23.95%**	**24.30%**	**41.22%**	**32.70%**	**29.27%**	**31.92%**	**25.74%**
D. Deferred Recognition of new assumptions	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%	(1.10)%
E. Calculated June 30, 2020 Contribution Rate with phase-in (C) + (D)	**30.88%**	**24.16%**	**21.39%**	**22.94%**	**24.49%**	**22.85%**	**23.20%**	**40.12%**	**31.60%**	**28.17%**	**30.82%**	**24.64%**
F. Total June 30, 2019 Contribution Rate with phase-in	29.07%	21.13%	19.72%	20.94%	22.47%	20.84%	21.23%	38.10%	29.00%	26.27%	28.53%	22.59%
G. Estimated Payroll for fiscal year beginning July 1, 2021*	$ 11	$ 3	$ 3	$ 3,908	$ 1,373	$ 2,087	$ 7,384	$ 0	$ 1,335	$ 386	$ 1,722	$ 9,106
H. Estimated Annual Contribution (E x G)	**$ 3**	**$ 1**	**$ 1**	**$ 897**	**$ 336**	**$ 477**	**$ 1,713**	**$ -**	**$ 422**	**$ 109**	**$ 531**	**$ 2,244**
I. Last Year's Estimated Annual Contribution	$ 3	$ 1	$ 1	$ 819	$ 313	$ 363	$ 1,500	$ -	$ 391	$ 74	$ 465	$ 1,965
J. Increase / (Decrease) in Annual Contribution	$ -	$ -	$ -	$ 78	$ 23	$ 114	$ 213	$ -	$ 31	$ 35	$ 66	$ 279

** Estimated Payroll based upon annualized salary rate as of June 30, 2020 increased by 3.25% wage inflation. Dollar figures in millions.*

Exhibit 12
Unfunded Actuarial Accrued Liability Detail

(Dollars in Millions)

Unfunded Actuarial Accrued Liability - Amortization Detail

Date Established	Description	Balance as of June 30, 2020	Interest on Balance	Amort. Payment on June 30, 2021 (1)	Balance as of June 30, 2021 (2)	Remaining Period as of June 30, 2021 (5)	July 1, 2021 Amortization Payment
June 30, 2009	Initial UAAL	$ 5,601.6	$ 392.1	$ 426.7	$ 5,567.0	18 Years	$ 419.8
June 30, 2010	(Gain) / Loss(3)	3,058.6	214.1	224.9	3,047.9	19 Years	221.2
June 30, 2011	(Gain) / Loss(3)	1,516.4	106.2	107.9	1,514.8	20 Years	106.1
June 30, 2012	(Gain) / Loss(3)	2,479.9	173.6	171.0	2,482.5	21 Years	168.2
June 30, 2013	(Gain) / Loss(3)	1,402.1	98.1	96.7	1,403.5	21 Years	95.1
June 30, 2014	(Gain) / Loss	(2,596.3)	(181.7)	(179.0)	(2,599.0)	21 Years	(176.1)
June 30, 2015	(Gain) / Loss	(2,028.4)	(142.0)	(139.9)	(2,030.5)	21 Years	(137.6)
June 30, 2016	(Gain) / Loss(3)	3,897.4	272.8	268.8	3,901.4	21 Years	264.4
June 30, 2017	(Gain) / Loss	(21.1)	(1.5)	(1.5)	(21.2)	21 Years	(1.4)
June 30, 2018	(Gain) / Loss	61.0	4.3	4.2	61.1	21 Years	4.1
June 30, 2019	(Gain) / Loss(3)	3,949.6	276.5	290.4	3,935.8	19 Years	285.7
June 30, 2020	(Gain) / Loss	1,191.2	83.4	(187.2) (4)	1,461.8	20 Years	102.4
						Total Amortization Payment July 1, 2021:	$ 1,351.9
						Projected Payroll July 1, 2021:	$ 9,105.8
	UAAL as of June 30, 2020:	**$ 18,512.0**				**UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2021:**	**14.85%**

Explanatory Notes:

1. Amortization Payments are based on a fixed schedule that increases by the payroll assumption each year.
2. The assets and liabilities used in the calculation of the UAAL are as of June 30, 2020, whereas, the contribution rates are not effective until July 1, 2021. Therefore, the UAAL is adjusted to June 30, 2021 based on the actual contribution rate for the period.
3. (Gain) / Loss layers include impact of assumption changes in these years.
4. The amortization of UAAL does not begin until July 1, 2021; therefore, the UAAL amount is adjusted by one year to reflect the actual July 1, 2020 contribution rate.
5. Effective with the June 30, 2019 valuation, all new UAAL layers are amortized over a 20-year period, beginning with the date the contribution is first expected to be made.

7. Supplemental Information

Governmental Accounting Standards Board (GASB) Statement No. 67 sets out requirements for defined benefit pension plan reporting and disclosures. GASB Statement No. 68 sets out requirements for accounting by state and local government employers.

Milliman provides LACERA with results relevant to Statements No. 67 and 68 in separate stand-alone financial reporting valuation reports.

For informational purposes, we have provided the following exhibits in this report that LACERA may use in the audited financial statements:

Exhibit 13: Schedule of Funding Progress
Exhibit 14: Schedule of Employer Contributions
Exhibit 15: Solvency Test
Exhibit 16: Actuarial Analysis of Financial Experience
Exhibit 17: Retirants and Beneficiaries added to / removed from Retiree Payroll

Exhibit 13, Schedule of Funding Progress, compares actuarial assets and liabilities of the Plan, based on the actuarial funding method used.

Exhibit 14, Schedule of Employer Contributions, compares the employer contributions required based on the actuarial valuation with the employer contributions actually made. Information shown in this exhibit comes from LACERA's audited financial statements.

Exhibit 15 compares the Actuarial Value of Valuation Assets to the types of Actuarial Accrued Liabilities, applying them first to Active Member contributions, then to retirees and beneficiaries, and then the remaining amount to the Active Members benefits. This is referred to as the Solvency Test.

Exhibit 16 shows the changes in actual versus expected UAAL from year to year.

Exhibit 17 reconciles the retired members and beneficiaries who have been added to and removed from the retiree payroll.

Exhibit 13
Schedule of Funding Progress

(Dollars in Thousands)

Actuarial Valuation Date	(a) Actuarial Value of Valuation Assets	(b) Actuarial Accrued Liabilities	(b-a) Unfunded Actuarial Accrued Liabilities (UAAL)	(a/b) Funded Ratio	(c) Covered Payroll[1]	[(b-a)/c] UAAL as a Percentage of Covered Payroll
June 30, 2011[2]	$ 39,193,627	$ 48,598,166	$ 9,404,539	80.6%	$ 6,650,674	141.4%
June 30, 2012[2]	39,039,364	50,809,425	11,770,061	76.8%	6,619,816	177.8%
June 30, 2013[2]	39,932,416	53,247,776	13,315,360	75.0%	6,595,902	201.9%
June 30, 2014	43,654,462	54,942,453	11,287,991	79.5%	6,672,228	169.2%
June 30, 2015	47,328,270	56,819,215	9,490,945	83.3%	6,948,738	136.6%
June 30, 2016[2]	49,357,847	62,199,214	12,841,367	79.4%	7,279,777	176.4%
June 30, 2017	52,166,307	65,310,803	13,144,496	79.9%	7,637,032	172.1%
June 30, 2018	55,233,108	68,527,354	13,294,246	80.6%	7,957,981	167.1%
June 30, 2019[2]	57,617,288	74,635,840	17,018,552	77.2%	8,370,050	203.3%
June 30, 2020	59,762,991	78,275,175	18,512,184	76.3%	8,724,151	212.2%

1. Covered Payroll includes compensation paid to all active employees on which contributions are calculated, as reported by LACERA. Covered Payroll differs from the Active Member Valuation Payroll shown in Table C-1, which is an annualized compensation of only those members who were active on the actuarial valuation date.

2. Assumption changes.

Exhibit 14
Schedule of Contributions from the Employer

(Dollars in Thousands)

Fiscal Year Ending	Actuarially Determined Employer Contribution	Actual Employer Contributions: Cash Payment	Actual Employer Contributions: Transfer from Reserve Accounts	Actual Employer Contributions: Total	Percentage of Actuarially Determined Contribution Contributed
06/30/2011	$ 944,174	$ 944,174	$ -	$ 944,174	100%
06/30/2012	1,078,929	1,078,929	-	1,078,929	100%
06/30/2013	1,172,014	723,195	448,819	1,172,014	100%
06/30/2014	1,320,442	1,320,442	-	1,320,442	100%
06/30/2015	1,494,975	1,494,975	-	1,494,975	100%
06/30/2016	1,443,130	1,443,130	-	1,443,130	100%
06/30/2017(1)	1,392,813	1,370,922	21,891	1,392,813	100%
06/30/2018	1,564,284	1,564,284	-	1,564,284	100%
06/30/2019	1,708,122	1,708,122	-	1,708,122	100%
06/30/2020	1,800,137	1,800,137	-	1,800,137	100%

1. The County Contribution Reserve was used to offset the contribution required from the Courts in the fiscal year ended June 30, 2017. Exhibit 14 in the June 30, 2017 actuarial valuation report did not reflect this transfer amount.

Exhibit 15
Solvency Test

(Dollars in Millions)

Actuarial Valuation Date	Actuarial Value of Valuation Assets	Actuarial Accrued Liabilities for: Active Member Contributions (A)	Retirees and Beneficiaries[1] (B)	Active Members (Employer Financed Portion) (C)	Portion of Actuarial Accrued Liabilities Covered by Assets (A)	(B)	(C)
June 30, 2011	$ 39,194	$ 6,529	$ 27,559	$ 14,511	100%	100%	35%
June 30, 2012	39,039	6,961	29,118	14,730	100%	100%	20%
June 30, 2013	39,932	7,837	30,980	14,430	100%	100%	8%
June 30, 2014	43,654	8,354	31,882	14,706	100%	100%	23%
June 30, 2015	47,328	8,805	32,734	15,280	100%	100%	38%
June 30, 2016	49,358	8,767	35,316	18,116	100%	100%	29%
June 30, 2017	52,166	9,482	37,077	18,752	100%	100%	30%
June 30, 2018	55,233	9,882	39,192	19,453	100%	100%	32%
June 30, 2019	57,617	10,210	42,235	22,190	100%	100%	23%
June 30, 2020	59,763	10,650	44,500	23,125	100%	100%	20%

1. Includes vested and non-vested former members.

Exhibit 16
Actuarial Analysis of Financial Experience

(Dollars in Millions)

	Valuation as of June 30						
	2014	2015	2016	2017	2018	2019	2020
Unfunded Actuarial Accrued Liability	$13,315	$11,288	$9,491	$12,841	$13,145	$13,294	$17,018
Expected Increase/(Decrease) from Prior Valuation	338	(54)	(102)	320	146	25	306
Salary Increases Greater/(Less) than Expected	(291)	79	162	277	223	486	388
CPI Less than Expected	(427)	(570)	(191)	(139)	45	44	43
Change in Assumptions	-	-	2,922	-	-	2,528	-
Asset Return Less/(Greater) than Expected	(1,664)	(1,263)	496	(421)	(411)	477	701
All Other Experience	17	11	63	267	146	164	56
Ending Unfunded Actuarial Accrued Liability	**$11,288**	**$9,491**	**$12,841**	**$13,145**	**$13,294**	**$17,018**	**$18,512**

Exhibit 17
Retirants and Beneficiaries added to and removed from Retiree Payroll

(Dollars in Thousands)

Valuation Date	Added to Rolls Member Count	Added to Rolls Annual Allowance[1]	Removed from Rolls Member Count	Removed from Rolls Annual Allowance[1]	Rolls at End of Year Member Count	Rolls at End of Year Annual Allowance[1]	% Increase in Retiree Allowance	Average Annual Allowance
June 30, 2011	3,134	$ 185,204 [2]	(1,959)	$ (62,923)	55,371	$ 2,342,625	5.51%	$ 42.3
June 30, 2012	3,194	193,865 [2]	(1,795)	(61,588)	56,770 [3]	2,474,902	5.65%	43.6
June 30, 2013	3,373	205,659 [2]	(2,057)	(69,494)	58,086 [3]	2,611,067	5.50%	45.0
June 30, 2014	3,128	172,743 [2]	(1,985)	(71,730)	59,229 [3]	2,712,080	3.87%	45.8
June 30, 2015	3,501	180,549 [2]	(2,124)	(80,028)	60,606 [3]	2,812,601	3.71%	46.4
June 30, 2016	3,479	220,632 [2]	(2,171)	(80,881)	61,914 [3]	2,952,352	4.97%	47.7
June 30, 2017	3,721	245,915 [2]	(2,311)	(89,624)	63,324 [3]	3,108,643	5.29%	49.1
June 30, 2018	3,826	276,118 [2]	(2,270)	(89,033)	64,880 [3]	3,295,728	6.02%	50.8
June 30, 2019	3,978	302,022 [2]	(2,351)	(97,840)	66,507 [3]	3,499,910	6.20%	52.6
June 30, 2020	3,930	311,206 [2]	(2,425)	(104,914)	68,012 [3]	3,706,202	5.89%	54.5

1. Annual allowance is the monthly benefit allowance annualized for those members counted as of June 30.

2. Includes COLAs that occurred during the fiscal year and therefore were not included in the previous years' Annual Allowance totals.

3. For the actuarial valuation year, Member Count includes retirees who due to timing at year end, are not yet included in the total Retired Members count disclosed in Note A - Plan Description of LACERA's CAFR for the fiscal year ended June 30, 2020.

8. Cash Flow History and Projections

Exhibits 18a and 18b contain tables and graphs that illustrate both the cash flow history for the past 10 years and a projection on the valuation basis for the next 10 years.

Contributions include both employer and member contributions. Exhibit 18a shows that net cash outflow has gradually increased over the last five years. In future years, after the phase-in of the rate increase due to assumption changes and methods, the cash flow is expected to become increasingly negative. This is a typical pattern for a mature retirement plan where it is expected that contributions will be less than benefits and that the plan will begin drawing on the fund that has been built up over prior years.

Note that the actual cash contributions do not reflect the transfers made between reserve funds, but only cash coming into the Plan. We are assuming no further transfers, only full cash contributions. In addition, LACERA will receive dividends and interest payments from its investments. These types of payments are not considered for this analysis, which focuses solely on comparing contributions with benefit payments and administrative expenses.

The projected cash flows include contributions, statutory benefits, and administrative expenses only. They are based on the actuarial assumptions as stated in Appendix A of this valuation report. The total employer contribution rate is assumed to be 22.59% for the first year and 24.64% for the second year; total employer contributions for the remainder of the period reflect the expected recognition of asset gains currently being deferred and the phase-in of the increase due to the assumption and method changes. The aggregate member rate is assumed to stay at the calculated rate for June 30, 2020 of 7.80% of payroll. Expenses are based on the expenses for the year ended June 30, 2020, increased annually with the actuarial inflation assumption of 2.75%.

Any increases or reductions in future contribution rates will increase or decrease the net cash flow. The projected cash flows do not include:

- Projected STAR benefits that have not yet been granted. STAR benefits that were vested as of January 2020 are included.
- Projected benefits payable under certain insurance contracts for a group of retired members. These payments are netted against the total expected retiree benefits.

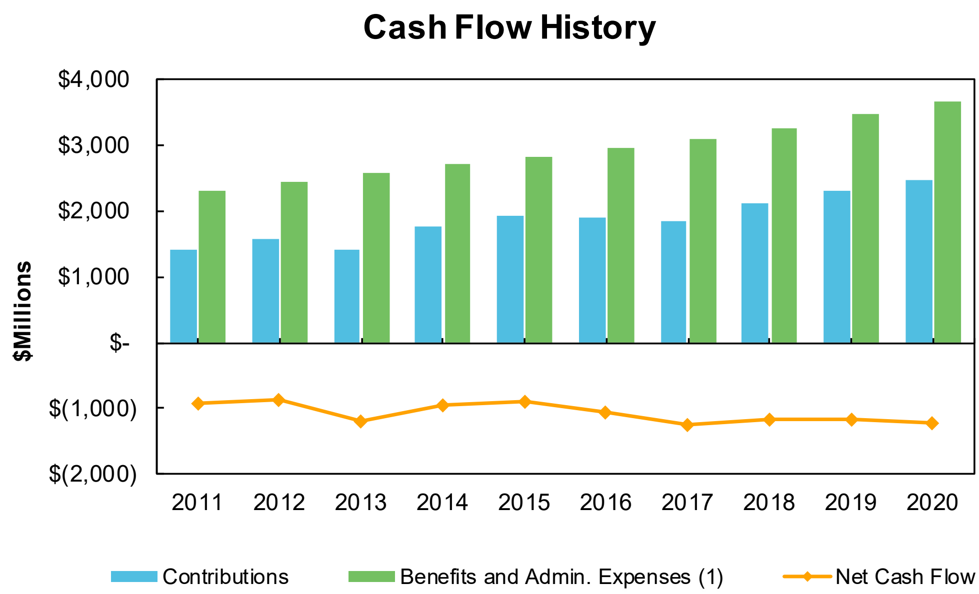
Exhibit 18a
Cash Flow History and Projections – Dollars

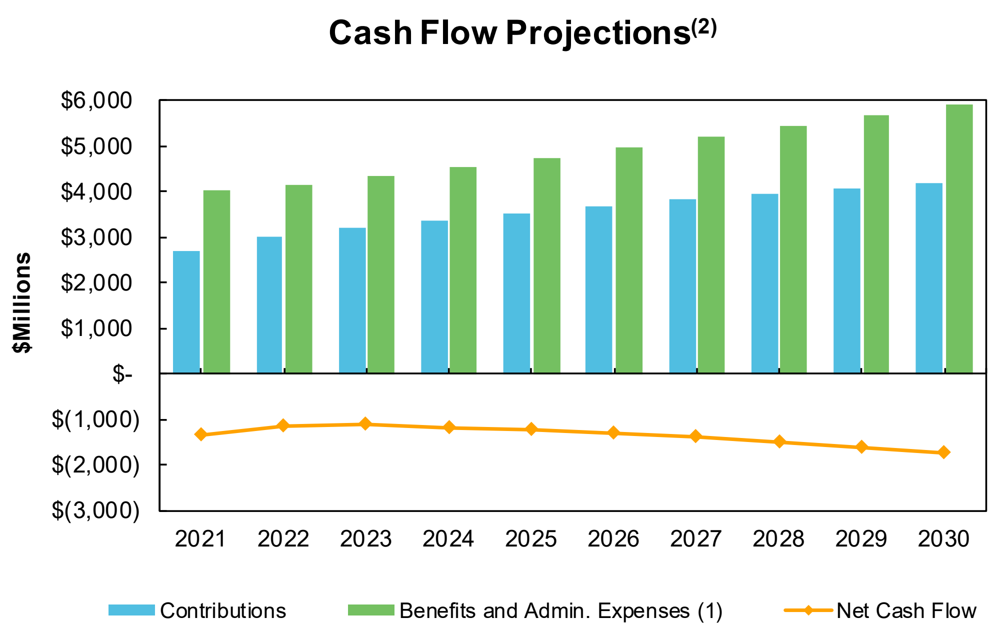
Plan Year Ending	Total Contributions	Benefits & Administrative Expenses[(1)]	Net Cash Flow
	Cash Flow History		
2011	$ 1,408	$ 2,318	$ (910)
2012	1,586	2,439	(853)
2013	1,403	2,593	(1,190)
2014	1,759	2,719	(960)
2015	1,936	2,829	(893)
2016	1,902	2,954	(1,052)
2017	1,858	3,094	(1,236)
2018	2,116	3,268	(1,152)
2019	2,304	3,475	(1,171)
2020	2,459	3,676	(1,217)

Plan Year Ending	Total Contributions	Benefits & Administrative Expenses[(1)]	Net Cash Flow
	Cash Flow Projections[(2)]		
2021	$ 2,713	$ 4,033	$ (1,320)
2022	3,002	4,137	(1,135)
2023	3,216	4,335	(1,120)
2024	3,371	4,542	(1,171)
2025	3,542	4,759	(1,216)
2026	3,701	4,983	(1,282)
2027	3,821	5,214	(1,393)
2028	3,945	5,448	(1,504)
2029	4,073	5,687	(1,614)
2030	4,205	5,930	(1,725)

1. *Investment expenses are assumed to be covered by investment return.*
2. *Future contributions reflect the expected impact of asset gains and losses currently being deferred.*

Exhibit 18b
Cash Flow History and Projections – Graphs





1. *Investment expenses are assumed to be covered by investment return.*

2. *Future contributions reflect the expected impact of asset gains and losses currently being deferred.*

9. Risk Discussion

Please refer to the Risk Assessment report dated September 8, 2020 for a detailed analysis of the main risks applicable to LACERA. That report includes detailed identification and assessment of risks.

Overview

The results of any actuarial valuation are based on one set of reasonable assumptions. Although we believe the current assumptions provide a reasonable estimate of future expectations, it is almost certain that future experience will differ from the assumptions to some extent. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Plan, or of the Plan's members.

Actuarial Standard of Practice No. 51 (ASOP 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed. The standard is first effective for certain actuarial work products with a measurement date on or after November 1, 2018; for LACERA it was first effective with the June 30, 2019 actuarial valuation.

In addition, the California Actuarial Advisory Panel (CAAP) has adopted a set of model disclosure elements for actuarial valuation reports of public retirement systems in California. Most of these elements are included in other areas of this report. The remaining CAAP-recommended disclosures are as follows:

Disclosure Element	Description	Value
Gross Normal Cost $ [1]	Normal Cost allocated to valuation year, paid at mid-year.	$ 1,674.9
Statutory Contribution $ [1]	Expected Employer Contribution paid at mid-year.	$ 2,024.4
Asset Smoothing Ratio	Actuarial Value of Assets divided by Market Value of Assets	103.1%
Asset Volatility Ratio	Market Value of Assets divided by Payroll	6.6
Liability Volatility Ratio	Actuarial Accrued Liability divided by Payroll	8.9

1. Amounts shown in millions of dollars

This Section 9 uses the framework of ASOP 51 and the Asset and Liability Volatility Ratios shown above to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical plan data.

Asset and Liability Volatility Ratios

Asset and Liability Volatility Ratios are a measure of the level of assets (or liabilities) to payroll. In general, a higher ratio means that the employer contribution rates (ECR) are more sensitive to changes in levels of assets or liabilities. Historical Asset and Liability Volatility Ratios are shown in Exhibit E-4.

As shown above, in the current valuation LACERA has an Asset Volatility Ratio of 6.6 and a Liability Volatility Ratio of 8.9. As shown in Exhibit E-4, these ratios have increased over time as LACERA has matured.

Factors Affecting Future Results

There are a number of factors that affect future valuation results. To the extent actual experience for these factors varies from the assumptions, this will likely cause either increases or decreases in the plan's future funding level and ECR. The factors that can have the most significant impact on LACERA's valuation results are:

- Investment returns

  To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, ECR, and funded status may differ significantly from those presented in this valuation. Additional discussion of the impact of variance of investment returns is included below.

- Compensation increases

  Individual member retirement benefits are linked to that member's compensation. As such, assumptions need to be made as to a member's future compensation increases. Higher future compensation increases will generally result in larger retirement benefits, liabilities, ECRs, and a lower funded status. Conversely, lower compensation increases than assumed will generally result in smaller retirement benefits, liabilities, ECRs, and a higher funded status.

- Payroll variation

  In the valuation, an assumption is made for the overall rate of payroll growth of LACERA from year-to-year. To the extent that the overall rate of payroll growth is greater than assumed, the ECR may decrease since the UAAL will be amortized over a larger payroll base. The opposite will occur if the overall rate of payroll growth is lower than assumed.

  This effect often will offset somewhat with individual compensation increases, discussed above.

- Longevity and other demographic risks

  The liabilities reported in this valuation have been calculated by assuming that members will follow specific patterns of demographic experience (e.g., mortality, retirement, termination, disability) as described in Appendix A. To the extent that actual demographic experience is different than is assumed to occur, future liabilities, ECRs, and funded status may differ from that presented in this valuation.

All of these assumptions are reviewed in detail during the triennial Investigation of Experience study, and are also reviewed annually during the valuation process. Changes in assumptions are generally recommended as part of the triennial Investigation of Experience if actual experience has been materially different than assumed or forecasts have changed significantly. Additionally, changes may be recommended and discussed at each valuation if they are deemed to be appropriate at that time.

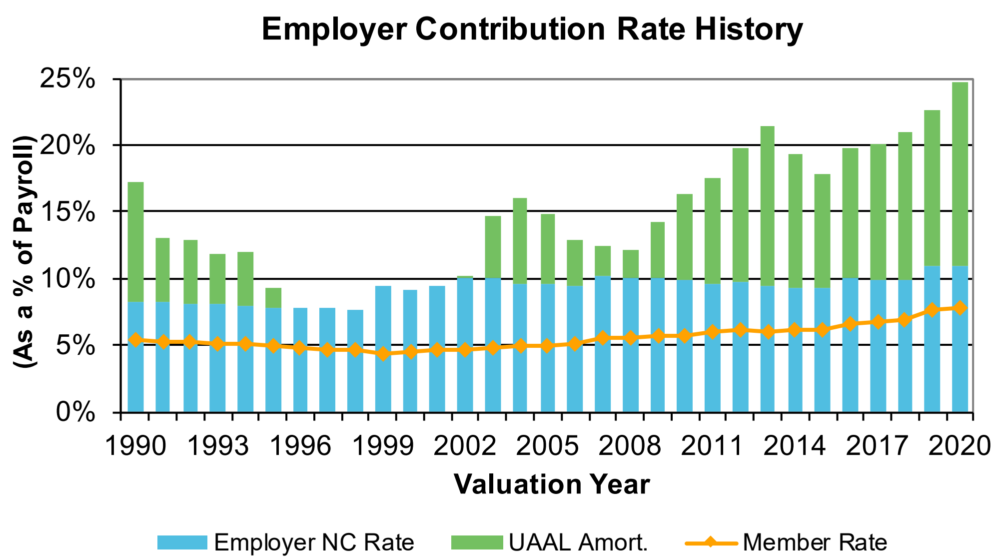
Discussion of Investment Return Risk

Of these factors, we believe the factor with the greatest potential risk to impact future valuation results for LACERA is future investment returns. For example, if actual returns fall short of the current assumption of 7.0% per year, this will cause an increase in the ECR and a decrease in the Funded Ratio, all other things being equal. Conversely, if actual returns exceed the current assumption of 7.0% per year, this will cause a decrease in the ECR and an increase in the Funded Ratio.

The magnitude of the increase or decrease in the ECR is affected by the maturity level, and specifically, the asset volatility ratio. LACERA has accumulated a significant amount of assets relative to its payroll and by several measures is considered a mature plan. Accumulating assets to pay for future benefit obligations is responsible funding, but it does mean that changes in the investment markets can have a significant impact on the ECR.

Historical Variation in Employer Contribution Rate

One way to assess future risks is to look at historical measurements. The following graph shows how the ECR has varied over the last 30 years under various investment return and assumption environments.



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 for the June 30, 2019 actuarial 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 probabilities 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. These are the probability that a member will leave the System for various reasons.

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. As of the June 30, 2019 valuation, all amortization layers with periods greater than 22 years as of July 1, 2020 were amortized over a 22-year period. Future gains and losses are amortized over new closed 20-year periods, beginning with the date the contribution is first expected to be made. 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 limitation is 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 7.00% compounded annually, net of both investment and administrative expenses. This rate was adopted June 30, 2019.

Postretirement Benefit Increases

Postretirement 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 2.75% per year. This rate was adopted June 30, 2016.

Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 7.00% compounded semi-annually for an annualized rate of 7.12%. This rate was adopted effective 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 3.25% 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 3.25% 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, 2016.

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 2020 is $151,549 (after applying the 120% factor) and is projected to increase at the CPI rate of 2.75%. This rate of future increase was adopted effective June 30, 2016.

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. Retirement probabilities vary by age and are shown by plan in Tables A-6 through A-13.

All general members who attain or have attained age 75 in active service and all safety members who attain or 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).

Vested former 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 Plan D 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 can 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 probabilities of disability used in the valuation are also illustrated in Tables A-6 through A-13. These probabilities were adopted June 30, 2019.

Postretirement Mortality – Other Than Disabled Members

The same postretirement mortality probabilities are used in the valuation for members retired for service and beneficiaries. These probabilities are illustrated in Table A-2. Current beneficiary mortality is assumed to be the same as for healthy members of the same sex. Future beneficiaries are assumed to be of the opposite sex and have the same mortality as General members. The amount-weighted Pub-2010 mortality tables are used.

Note that these assumptions include a projection for expected future mortality improvement. These probabilities 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.

Postretirement Mortality – Disabled Members

For members retired for disability, the mortality probabilities used in the valuation are illustrated in Table A-3. The amount-weighted Pub-2010 mortality tables are used.

Note that these assumptions include a projection for expected future mortality improvement. These probabilities 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 probabilities used in the valuation are illustrated in Tables A-6 through A-13. The amount-weighted Pub-2010 mortality tables are used. These probabilities 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. *Projected using the MP-2014 Ultimate projection scale.*

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

Other Employment Terminations

Tables A-6 to A-13 show, for all ages, the probabilities assumed in this valuation for future termination from active service other than for death, disability, or retirement. These probabilities do not apply to members eligible for service retirement. These probabilities 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 probabilities 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 vested former members are assumed to work for a reciprocal employer.

Current vested reciprocal members are assumed to receive annual salary increases of 4.25%. 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 determined using the same mortality tables as used for service-retired members.

B. The annuity factor used in determining the present value of future benefits (PVFB) at entry age is equal to the life only annuity factor at 7.00%.

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

D. Example: For a General 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.

E. Member Rates are assumed to increase with entry age. There are a few exceptions at the higher entry ages where the calculated rate is less than the previous entry age. 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, 2020

I. Economic assumptions

A.	General wage increases	3.25%
B.	Investment earnings	7.00%
C.	Growth in membership	0.00%
D.	Postretirement benefit increases (varies by plan)	Plan COLA not greater than CPI assumption.
E.	CPI inflation assumption	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) Basis – Beneficiaries are assumed to have the same mortality as a general member of the opposite gender who has taken a service retirement.	Table A-2
H.	Other terminations of employment	Tables A-6 to A-13
I.	Refund of contributions on vested termination	Table A-4

1. All mortality probabilities 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%

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 probabilities 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 probability for an 85-year old Safety male in fiscal year beginning in 2020 is 7.0223% calculated as follows:

Age 85 probability in 2020 = Age 85 probability in 2010 with 10 years improvement

= 7.7648% x (100.0% - 1.0%) ^ 10

= 7.0223%

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 probabilities 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 & Above	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 & Above	0.25%	0.50%

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

Appendix A Probabilities 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 of these represents the probability that a member will separate from service at each age due to the particular cause. For example, a probability 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 probabilities 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
Probability 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
Probability 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
Probability 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
Probability 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
Probability 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
Probability 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
Probability 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	0.00000	0.00280	0.00000	0.00010	0.00059
41	0.00750	0.00000	0.00290	0.00000	0.00010	0.00062
42	0.00750	0.00000	0.00300	0.00000	0.00010	0.00067
43	0.00750	0.00000	0.00310	0.00000	0.00010	0.00071
44	0.00750	0.00000	0.00320	0.00000	0.00010	0.00076
45	0.00750	0.00000	0.00330	0.00000	0.00010	0.00082
46	0.00750	0.00000	0.00340	0.00000	0.00010	0.00088
47	0.00750	0.00000	0.00350	0.00000	0.00010	0.00095
48	0.00750	0.00000	0.00400	0.00000	0.00010	0.00102
49	0.00750	0.00000	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
Probability 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	0.00000	0.00920	0.00000	0.00010	0.00049
41	0.00750	0.00000	0.00960	0.00000	0.00010	0.00052
42	0.00750	0.00000	0.01000	0.00000	0.00010	0.00056
43	0.00750	0.00000	0.01040	0.00000	0.00010	0.00059
44	0.00750	0.00000	0.01080	0.00000	0.00010	0.00063
45	0.00750	0.00000	0.01120	0.00000	0.00010	0.00067
46	0.00750	0.00000	0.01160	0.00000	0.00010	0.00071
47	0.00750	0.00000	0.01200	0.00000	0.00010	0.00076
48	0.00750	0.00000	0.01300	0.00000	0.00010	0.00080
49	0.00750	0.00000	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

Appendix B Summary of Plan Provisions

All actuarial calculations are based on our understanding of the statutes governing LACERA as contained in the County Employees Retirement Law (CERL) of 1937 and the California Public Employees' Pension Reform Act of 2013 (PEPRA). The benefit and contribution provisions of this law are summarized briefly below, along with corresponding references to the Government Code Section. This summary does not attempt to cover all the detailed provisions of the law.

MEMBERSHIP	**Government Code Section**
Permanent employees of Los Angeles County (County) and participating districts who work ¾ time or more are eligible for membership in LACERA.	(31551, 31552, Bylaws)
Employees eligible for safety membership (law enforcement, firefighting and specific lifeguards) become safety members on the first day of the month after date of hire. Employees who become members on or after January 1, 2013, will enter into Safety Plan C.	(31558)
All other employees become general members on the first day of the month after date of hire or the first day of the month after they make an election of either Plan D or Plan E, depending on the law in effect at that time. Employees who become members on or after January 1, 2013 will enter into General Plan G.	(31493, 31493.5, 31493.6, Bylaws)
Elective officers become members on the first day of the month after filing a declaration with the Board of Retirement (Board).	(31553, 31562)
General members in Plan E may transfer all their Plan E service credit to Plan D during an approved transfer period by making the required contributions. Transferred members relinquish, waive, and forfeit any and all vested or accrued benefits available under any other retirement plan and are entitled only to the benefits of Plan D.	(31494.1, 31494.3)

RETIREMENT PLANS

The County has established nine defined benefit plans. The following outlines the dates these plans were available, based on a member's date of entry into LACERA:

Safety Member Plans:

Plan A: Inception to August 1977

Plan B: September 1977 through December 2012

Plan C: January 2013 to present (7522.02)

General Member Plans:

Plan A: Inception through August 1977

Plan B: September 1977 through September 1978

Plan C: October 1978 through May 1979

Plan D: June 1979 through December 2012

Plan E: February 1982 through December 2012 (31487, 31496)

Plan G: January 2013 to present (7522.02)

NOTE: After review of a new member's account, a member with prior membership may be enrolled into one of the pre-PEPRA plans.

MEMBER CONTRIBUTIONS

Plans A, B, D and General Plan C members

Contributions are based on the entry age and class of each member and are required of all members in Plans A, B, C, and D. Current member rates are shown in Appendix D. Section 5 provides additional detail on how these rates are calculated. (31620)

Contributions cease when general members are credited with 30 years of service in a contributory plan, provided they were members of LACERA or a reciprocal plan on March 7, 1973, and continuously thereafter. All safety members are eligible for the 30-year cessation of contributions. (31625.2, 31836.1)

Interest is credited to contributions semiannually on June 30 and December 31 at an interest rate set by the Board of Investments on amounts that have been on deposit for at least six months. (31591, 31700)

In addition to the normal contributions, members pay one-half of the cost of their plan's COLA. This is discussed further in Section 5 of this report. (31873)

General Plan G and Safety Plan C members

Members contribute 50% of the aggregate Normal Cost rate for their Plan. (7522.30)

EMPLOYER CONTRIBUTIONS

The employer (County or District) contributes to the retirement fund a percent of the total compensation provided for all members based on an actuarial valuation and recommendation of the actuary and the Board of Investments. (31453, 31454 31581)

SERVICE RETIREMENT ALLOWANCE

Eligibility

Plans A-B: **Safety members** (31662.4, 31662.6, 31663.25)

Age 50 with 10 years of County service;
Any age with 20 years of service; or

Plans A-D: **General members** (31672)

Age 50 with 10 years of County service;
Any age with 30 years of service; or
Age 70 and actively employed, regardless of service.

Plan C: **Safety members** (7522.25(d))

Age 50 with 5 years of service.

Plan E: **General members** (31491, 31491.3)

Age 65 with 10 years of service.
A reduced benefit is also payable at age 55 with 10 years of service.

Plan G: **General members** (7522.20(a))

Age 52 with 5 years of service.

Final Compensation

General Plans A-D and Safety Plans A-B (31462.3)

Average of the member's highest monthly pensionable earnings during any 12-consecutive-month period.

Plan E: Average of the member's highest monthly pensionable earnings during any three 12-consecutive month periods. (31488)

General Plan G and Safety Plan C

Average of the member's highest monthly pensionable earnings during any 36-consecutive month period. (7522.32)

The amount of compensation that is taken into account in computing benefits payable to any person who first becomes a member on or after July 1, 1996, shall not exceed the dollar limitations in Section 401(a)(17) of Title 26 of the US Code. (31671)

The amount of compensation taken into account for General Plan G and Safety Plan C members is limited to $151,549 for 2020. The amount of compensation taken into account shall be adjusted based on changes in the Consumer Price Index for All Urban Consumers: U.S. City Average. Adjustments shall be effective annually on January 1. (7522.10)

SERVICE RETIREMENT ALLOWANCE (continued)

Monthly Allowance

Plans A-B: **Safety members**

1/50 x Final Compensation x Safety age factor x Years of service. (The Safety Plan A and Safety Plan B age factors are the same.) (31664)

Plans A-D: **General members** (31676.1)

1/60 x Final Compensation x a Plan specific age factor x years of service. (The General Plan C and General D age factors are the same.) (31676.11) (31676.14) (7522.25(d))

Plan C: **Safety members**

Final Compensation x Safety Plan percentage x Years of service.

Plan E: **General members [(a)+(b)-(c)] x d where:** (31491, 31491.3 (b)&(c))

(a) 2% x Final Compensation x (Years of Service (up to 35 years), plus
(b) 1 % x Final Compensation x Years of Service in excess of 35 (up to 10)
(c) Estimated Primary Insurance Amount (PIA) x Years of Covered Service (up to 35) divided by 35.
(d) Early Retirement Adjustment Factor

The PIA is calculated based on certain assumptions specified by statute, and an assumed Social Security retirement age of 62.

If retirement occurs prior to age 65, benefit amount is adjusted by an Early Retirement Adjustment Factor.

Plan G: **General members** (7522.20(a))

Final Compensation x General Plan percentage x Years of Service.

Social Security Integration

Plans A-C: **General Members**

For County service covered by Social Security prior to January 1, 1983, the 1/60 factor is replaced by 1/90 for the first $350 of compensation. (31808)

Plan D: The 1/90 factor is applied to the first $1,050 of compensation.

SERVICE RETIREMENT ALLOWANCE (continued)

Sample Plan Age Factors

Plan	Age 50	Age 55	Age 60	Age 65 & Up	
General A	0.8850	1.1686	1.4638	1.5668	(31676.14)
General B	0.7454	1.0000	1.3093	1.5668	(31676.11)
General C&D	0.7091	0.8954	1.1500	1.4593	(31676.1)
General E	N/A	0.3748	0.6009	1.0000	(31491.3(a))
Safety A&B	1.0000	1.3099	1.3099	1.3099	(31664)

Sample Plan Age Percentages

Plan	Age 50	Age 55	Age 60	Age 65 & Up	
General G	N/A	1.30%	1.80%	2.30%*	(7522.20(a))
Safety C	2.00%	2.50%	2.70%	2.70%	(7522.25(d))

**Maximum percentage for General Plan G is 2.50% at age 67.*

Maximum Allowance

Plans A-D, G: Allowance may not exceed 100% of final compensation. (31676.1, 31676.11, 31676.14)

Plan E: The sum of the normal retirement allowance and the estimated PIA cannot exceed 70% of Final Compensation for a member with 35 or less years of service, and cannot exceed 80% of Final Compensation if service exceeds 35 years. (31491)

Unmodified Retirement Allowance (Normal Form)

Plans A-D, G: Life Annuity payable to retired member with 65% continuance to an eligible survivor (or eligible children). (31760.12, 31785.4)

Plan E: Life Annuity payable to retired member with 55% continuance to an eligible survivor (or eligible children). (31492.1)

Eligible survivor includes certain domestic partners. (31780.2)

SERVICE RETIREMENT ALLOWANCE (continued)

Optional Retirement Allowance

A member may elect to have the actuarial equivalent of the service or disability retirement allowance applied to a lesser retirement allowance during the retired member's life in order to provide an optional survivor allowance. (31760)

Unmodified Plus:	Members with eligible survivors may elect a higher percent than the standard unmodified continuance, up to 100%. The benefit is actuarially reduced from the unmodified amount. The elected percent of the member's reduced allowance is payable to the eligible survivor.	(31760.5)
Option 1:	Member's allowance is reduced to pay a cash refund of any unpaid annuity payments (up to the amount of the member's contributions at retirement) to the member's estate or to a beneficiary having an insurable interest in the life of the member.	(31761)
Option 2:	100% of member's reduced allowance is payable to a beneficiary having an insurable interest in the life of the member.	(31762)
Option 3:	50% of member's reduced allowance is payable to a beneficiary having an insurable interest in the life of the member.	(31763)
Option 4:	Other % of member's reduced allowance is payable to a beneficiary(ies) having an insurable interest in the life of the member.	(31764)

A member may not revoke and name another beneficiary if the member elects Option 2, 3, or 4. (31782)

Pension Advance Option:	The Pension Advance Option is available to members who are fully insured under Social Security for the purpose of coordinating a member's retirement allowance with benefits receivable from Social Security. It is not available to disability retirees or members who elect Option 2, 3, or 4. The allowance is increased prior to age 62 and then reduced after 62 by amounts which have equivalent actuarial values. The automatic 65% continuance for eligible spouses of members who elect the Pension Advance Option is based on the unmodified allowance the member would have received if the member had not elected the option.	(31810, 31811)

All Allowances (31452.7, 31600)

All allowances are made on a pro-rata basis (based on the number of days in that month) if not in effect for the entire month of retirement. For deaths that occur mid-month, the full month's payment is made.

SERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

Eligibility

Plans A-D, G:	Any age or years of service; disability must result from occupational injury or disease, and member must be permanently incapacitated for the performance of duty.	(31720)
Plan E:	Not available under Plan E.	(31487)

Monthly Allowance

Greater of (1) 50% of final compensation, and (2) the service retirement allowance, if eligible to retire. (31727.4)

Normal Form Of Payment

Life Annuity with 100% continuance to a surviving spouse (or eligible children). (31786)

NONSERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

Eligibility

Plans A-D, G:	Any age with five years of service, and permanently incapacitated for the performance of duty.	(31720)
Plan E:	Not available under Plan E.	(31487)

Monthly Allowance

The monthly allowance is equal to a service retirement allowance if a General member is age 65 or a Safety member is age 55; otherwise the monthly allowance is the greater of that to which the member would be entitled as service retirement or the sum of (a) or (b) where: (31726, 31726.5)

General Members:	(a) 90% of 1/60 of Final Compensation x years of service, if member must rely on service in another retirement plan in order to be eligible to retire, or allowance exceeds 1/3 of final compensation.	(31727(a))
	(b) 90% of 1/60 of Final Compensation x years of service projected to age 65, not to exceed 1/3 of Final Compensation.	(31727(b))
Safety Members:	1/60 is replaced by 1/50 and age 65 is replaced by age 55 in (a) and (b) above.	(31727.2)

Normal Form of Payment

Life Annuity with 65% continuance to a surviving spouse (or eligible children). (31760.1, 31760.12, 31785, 31785.4)

SERVICE-CONNECTED PRE-RETIREMENT DEATH BENEFITS

Eligibility

Plans A-D, G:	Active members who die in service as a result of injury or disease arising out of and in the course of employment.	(31787)
Plan E:	Not available under Plan E.	(31487)

Monthly Allowance (31787)

A monthly allowance payable to an eligible survivor (or eligible children) equal to the retirement allowance the deceased member would have received under a service-connected disability retirement.

Optional Combined Benefit (31781.3)

In lieu of the monthly allowance above, a surviving spouse may elect:

(a) A lump sum equal to 1/12 of the compensation earned in the preceding 12 months x years of service (benefit not to exceed 50% of the 12 months' compensation), plus

(b) A monthly payment equal to 50% of the member's Final Compensation, reduced by a monthly amount, which is the actuarial equivalent of (a) above based on the age of surviving spouse.

Death Benefit (Lump Sum) (31781)

The member's accumulated contributions with interest, plus 1/12 of the compensation earned in the preceding 12 months x years of service (benefit not to exceed 50% of the 12 months' compensation).

Additional Allowance for Children (31787.5)

25% of death allowance (whether or not the monthly allowance or combined benefit is chosen) for one child, 40% for two children, and 50% for three or more children.

Additional Amount for Spouse of Safety Member (31787.6)

A surviving spouse of a safety member is also entitled to receive a lump-sum death benefit equal to 12 x monthly rate of compensation at the time of member's death in addition to all other benefits.

Note: For valuation purposes, an unmarried member is assumed to take the lump sum benefit. A married member is assumed to take the monthly allowance or the lump sum, whichever is more valuable.

NONSERVICE-CONNECTED PRE-RETIREMENT DEATH BENEFITS

Eligibility

Plans A-D, G:	Active members who die while in service or while physically or mentally incapacitated for the performance of duty.	(31780)
Plan E:	Not available under Plan E.	(31487)

Death Benefit (Lump Sum) (31781)

The member's accumulated contributions with interest, plus 1/12 of the compensation earned in preceding 12 months x the number of completed years of service (benefit not to exceed 50% of the 12 months' compensation).

Optional Death Benefit

In lieu of the lump-sum death benefit, the following several optional death benefits are available to provide flexibility to survivors.

First Optional Death Benefit (31781.1, 31781.12)

If a member who would have been entitled to a non-service-connected disability retirement allowance dies prior to retirement as a result of such disability, the surviving spouse (or eligible children) may elect to receive an optional death allowance equal to 65% of the monthly retirement allowance to which the member would have been entitled as of the date of death.

Second Optional Death Benefit (31781.2, 31765.2)

If a member dies prior to reaching the minimum retirement age but has 10 or more years of County service, a surviving spouse (or eligible children) may elect to leave the amount of the death benefit on deposit until the earliest date the member could have retired and at that time receive the allowance provided for in Section 31765 (an Option 3 benefit) or 31765.2 (a 65% continuance).

Third Optional Death Benefit

A surviving spouse of a member who dies after five years of County service may elect a combined benefit equal to:

(a) A lump sum equal to 1/12 of the compensation earnable in the preceding 12 months x the number of completed years of service (benefit not to exceed 50% of the 12 months' compensation), plus (31781.3)

(b) A monthly payment equal to 65% of the monthly retirement allowance to which the member would have been entitled if the member retired or could have retired for a non-service-connected disability as of the date of death, reduced by a monthly amount which is the actuarial equivalent of (a) above based on the age of surviving spouse. (31781.1, 31781.12)

Fourth Optional Death Benefit

If a member dies while eligible for a service retirement and the surviving spouse is designated as beneficiary, the spouse (or eligible children) may elect to receive 65% of the monthly retirement allowance to which the member would have been entitled as of the date of death. (31765.1, 31765.2)

Fifth Optional Death Benefit

If a member dies while eligible for a service retirement and the surviving spouse is designated as beneficiary and survives the member by not less than 30 days, the spouse (or eligible children) may elect to receive the same retirement allowance as the spouse would have received had the member retired on the date of death and selected Option 3. (31765)

Note: For valuation purposes, an unmarried member is assumed to take the lump sum benefit. A married member is assumed to take the first optional death benefit or the lump sum, whichever is more valuable.

POSTRETIREMENT DEATH/BURIAL BENEFIT

Plans A-E:	A one-time lump-sum benefit of $5,000 is payable to the estate or to the beneficiary designated by the member upon the death of any member while receiving a retirement allowance. This is in addition to any other death or survivor benefits. The amount is currently paid by the County based on agreement with LACERA. It is not included for valuation purposes.	(31789.3)

DEFERRED RETIREMENT ALLOWANCE

Eligibility

Plans A, B, D and General Plan C:		
	Five years of county or reciprocal service. Member contributions must be left on deposit.	(31700)
Safety Plan C:	Age 50 with 5 years of service.	(7522.25(d))
Plan E:	Age 55 with 10 years of service.	(31491)
Plan G:	Age 52 with 5 years of service.	(7522.20(a))

DEFERRED RETIREMENT ALLOWANCE (continued)

Monthly Allowance

Plans A-D, G:	Same as service retirement allowance; payable any time after the member would have been eligible for service retirement.	(31703, 31704, 31705)
	If a former member dies before the effective date of the deferred retirement allowance, the member's accumulated contributions are paid to the estate or to the named beneficiary.	(31702)
Plan E:	Same as service retirement allowance at normal retirement age 65 or in an actuarially equivalent reduced amount at early retirement, after age 55.	(31491)

TRANSFERS BETWEEN PLAN D AND PLAN E

Members in Plan D may transfer to Plan E on a prospective basis. Members in Plan E may transfer to Plan D on a prospective basis. (31494.2, 31494.5)

RECIPROCITY

All Plans:	Reciprocal benefits are may be granted to members who are entitled to retirement benefits from two or more retirement plans established under the CERL or from a County retirement plan and the California Public Employees' Retirement System (CalPERS). Reciprocity also applies to the members of the State Teachers' Retirement System Defined Benefit Plan.	(31830, 31840.4, 31840.8)
	Final Compensation may be based on service with CalPERS or another County retirement plan, if greater.	(31835)
	Vested former members are eligible for disability and death benefits from LACERA, if disabled while a member of CalPERS or another County retirement plan, but combined benefits are limited.	(31837, 31838, 31838.5, 31839)

TRANSFER FROM CALPERS

Whenever firefighting or law enforcement functions performed by a public agency or the state subject to the California Public Employees Retirement Law are transferred to the County, fire authority, or district, employees performing those functions become members of LACERA. LACERA and CalPERS may enter into an agreement whereby the members' service credit plus the members' and the cities' or states' retirement contributions are transferred from CalPERS to LACERA. (31657)

COST-OF-LIVING INCREASES

Cost-of-living increases (or decreases) are applied to all retirement allowances (service and disability), optional death allowances, and annual death allowances effective April 1, based on changes in the Consumer Price Index (CPI) from the previous January 1 to the current January 1, to the nearest ½ of 1%. (31870, 31870.1)

Plan A:	Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase.	(31870.1)
Plans B-D, G:	Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase. When the CPI exceeds 2% or 3%, the difference between the actual CPI and the maximum cost-of-living increase given in any year is credited to the COLA Accumulation. It may be used in future years to provide cost-of-living increases when the CPI falls below 2% or 3%, depending on the retirement plan.	(31870)
Plan E:	Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase. The 2% is pro-rated based on service earned after June 4, 2002. "Elective COLA" increases for service earned prior to June 4, 2002 may be purchased by the member.	(31495.5)

STAR PROGRAM

Contributory plan members who have a COLA Accumulation of more than 20% resulting from CPI increases that exceeded the maximum cost-of-living increases that could be granted are eligible for a supplemental cost-of-living increase effective January 1 known as the Supplemental Targeted Adjustment for Retirees Cost-of-Living Adjustment (STAR COLA). These benefits are not evaluated in this report, or as part of the actuarially required funding amount, unless they have been vested by the Board of Retirement. (31874.3(b))

Appendix C Valuation Data and Schedules

On the following table, Exhibit C-1, we present a summary of LACERA membership at June 30, 2020 for active members. Similar information is shown in Exhibit C-2 Retired for retired members and C-2 Former for vested former members.

Note that salary amounts shown are the prior year annual pensionable earnings for those members of plans with a one-year final compensation period. For plans with a three-year final compensation period, the monthly rate of pay at June 2020 is shown.

Additional statistical data on both active and retired members is shown in the following tables. Additional detailed summaries are supplied to LACERA staff in a supplementary report.

Exhibit C-3: Age Distribution of Active Members

Exhibit C-4: Age, Service, Compensation Distribution of Active Members

Exhibit C-5: Age, Retirement Year, Benefit Amount and Plan Distribution of Retired Members Exhibits C-4 and C-5 are shown for all plans combined as well as for each plan separately.

Data on LACERA membership as of June 30, 2020 was supplied to us by LACERA staff. Based on our review of this data and discussions with LACERA staff, all retiree and beneficiary records were included in our valuation.

All records for active and former members supplied by LACERA were included in the valuation.

Exhibit C-1
LACERA Membership – Active Members as of June 30, 2020

	Sex	Vested	NonVested	Total Number	Annual Salary	Average Age	Average Monthly Salary	Average Service
General Members								
Plan A	M	32	-	32	$ 4,463,292	74.0	$ 11,623	42.4
	F	60	-	60	5,465,364	70.7	7,591	39.7
Plan B	M	5	-	5	502,884	68.6	8,381	33.5
	F	17	-	17	1,848,120	66.2	9,059	37.0
Plan C	M	6	-	6	481,992	65.3	6,694	40.7
	F	25	-	25	2,385,960	66.4	7,953	39.5
Plan D	M	12,889	102	12,991	1,295,254,908	51.1	8,309	19.0
	F	26,830	177	27,007	2,439,863,640	50.7	7,528	19.1
Plan E	M	4,910	276	5,186	479,045,364	55.3	7,698	22.5
	F	10,722	442	11,164	850,452,048	55.3	6,348	23.5
Plan G	M	2,803	7,368	10,171	749,779,716	38.9	6,143	3.5
	F	5,297	14,969	20,266	1,356,559,104	38.0	5,578	3.4
Total		63,596	23,334	86,930	$ 7,186,102,392	47.3	$ 6,889	14.4
Safety Members								
Plan A	M	2	-	2	$ 301,068	65.5	$ 12,545	33.3
	F	-	-	-	-	N/A	N/A	N/A
Plan B	M	7,762	66	7,828	1,043,456,160	46.2	11,108	19.6
	F	1,343	11	1,354	172,150,896	44.1	10,595	17.6
Plan C	M	632	2,798	3,430	320,921,580	31.2	7,797	3.0
	F	138	426	564	53,720,244	30.5	7,937	3.1
Total		9,877	3,301	13,178	$ 1,590,549,948	41.4	$ 10,058	14.4
Grand Total		73,473	26,635	100,108	$ 8,776,652,340	46.5	$ 7,306	14.4

Exhibit C-2
Retired LACERA Membership – Retired Members as of June 30, 2020

	Sex	Number	Annual Allowance	Average Age	Average Monthly Benefit
General Members					
Plan A	M	7,270	$ 515,906,207	80.2	$ 5,914
	F	12,917	657,810,337	80.0	4,244
Plan B	M	223	15,162,273	74.9	5,666
	F	524	27,708,828	74.8	4,407
Plan C	M	151	8,273,105	73.8	4,566
	F	344	15,891,333	74.3	3,850
Plan D	M	6,434	292,765,582	68.8	3,792
	F	11,947	478,198,582	68.8	3,336
Plan E	M	4,765	154,001,822	72.5	2,693
	F	10,052	269,373,900	72.2	2,233
Plan G	M	30	659,229	67.4	1,831
	F	36	436,336	63.1	1,010
Total		54,693	$ 2,436,187,534	74.0	$ 3,712
Safety Members					
Plan A	M	4,616	$ 487,488,772	76.9	$ 8,801
	F	2,025	147,861,702	78.4	6,085
Plan B	M	5,462	546,492,063	60.7	8,338
	F	1,207	87,505,008	58.0	6,041
Plan C	M	7	597,044	57.0	7,108
	F	2	70,228	38.5	2,926
Total		13,319	$ 1,270,014,817	68.8	$ 7,946
Grand Total		68,012	$ 3,706,202,351	73.0	$ 4,541

Exhibit C-2
Former LACERA Membership – Vested Former Members as of June 30, 2020[1]
Subtotaled by Plan and Retirement Type

	Sex	Number	Average Age
General Members			
Plan A	M	20	73.9
	F	38	72.3
Plan B	M	3	72.3
	F	9	70.6
Plan C	M	5	67.0
	F	11	65.2
Plan D	M	2,534	49.4
	F	5,316	48.6
Plan E	M	1,017	57.2
	F	2,215	57.0
Plan G	M	1,199	37.9
	F	2,760	37.2
Total		15,127	47.7
Safety Members			
Plan A	M	4	68.0
	F	-	-
Plan B	M	682	44.3
	F	129	44.5
Plan C	M	199	31.9
	F	27	31.1
Total		1,041	41.7
Grand Total		16,168	47.3

1. Includes non-vested former members who still have member contributions with LACERA

Exhibit C-2a
LACERA Membership – Retired Members as of June 30, 2020
Subtotaled by Plan and Retirement Type

Plan	Retirement Type	Number		Annual Benefits in Thousands		Average Monthly Benefit
General Plans:						
Plan A						
	Healthy	14,384	$	950,852	$	5,509
	Disabled	1,431		60,612		3,530
	Beneficiaries	4,372		162,253		3,093
	Total	20,187	$	1,173,717	$	4,845
Plan B						
	Healthy	621	$	38,314	$	5,141
	Disabled	57		2,121		3,101
	Beneficiaries	69		2,436		2,942
	Total	747	$	42,871	$	4,783
Plan C						
	Healthy	376	$	20,598	$	4,565
	Disabled	49		1,674		2,847
	Beneficiaries	70		1,893		2,253
	Total	495	$	24,165	$	4,068
Plan D						
	Healthy	14,668	$	658,871	$	3,743
	Disabled	2,155		75,801		2,931
	Beneficiaries	1,558		36,292		1,941
	Total	18,381	$	770,964	$	3,495
Plan E						
	Healthy	13,536	$	404,773	$	2,492
	Disabled	N/A		N/A		N/A
	Beneficiaries	1,281		18,603		1,210
	Total	14,817	$	423,376	$	2,381
Plan G						
	Healthy	57	$	935	$	1,367
	Disabled	3		104		2,890
	Beneficiaries	6		56		782
	Total	66	$	1,095	$	1,383
Safety Plans:						
Plan A						
	Healthy	2,146	$	237,932	$	9,239
	Disabled	2,888		285,300		8,232
	Beneficiaries	1,607		112,118		5,814
	Total	6,641	$	635,350	$	7,973
Plan B						
	Healthy	2,834	$	295,033	$	8,675
	Disabled	3,519		318,946		7,553
	Beneficiaries	316		20,018		5,279
	Total	6,669	$	633,997	$	7,922
Plan C						
	Healthy	6	$	562	$	7,809
	Disabled	3		105		2,917
	Beneficiaries	0		0		N/A
	Total	9	$	667	$	6,178
Grand Totals		68,012		3,706,202		4,541

Exhibit C-2b
LACERA Membership – Retired Members as of June 30, 2020
Subtotaled by Retirement Type and Plan

Type	Plan	Number		Annual Benefits in Thousands		Average Monthly Benefit
Healthy Retirees						
	General A	14,384	$	950,852	$	5,509
	General B	621		38,314		5,141
	General C	376		20,598		4,565
	General D	14,668		658,871		3,743
	General E	13,536		404,773		2,492
	General G	57		935		1,367
	Safety A	2,146		237,932		9,239
	Safety B	2,834		295,033		8,675
	Safety C	6		562		7,809
	Total	48,628	$	2,607,870	$	4,469
Disabled Retirees						
	General A	1,431	$	60,612	$	3,530
	General B	57		2,121		3,101
	General C	49		1,674		2,847
	General D	2,155		75,801		2,931
	General E	N/A		N/A		N/A
	General G	3		104		2,890
	Safety A	2,888		285,300		8,232
	Safety B	3,519		318,946		7,553
	Safety C	3		105		2,917
	Total	10,105	$	744,663	$	6,141
Beneficiaries						
	General A	4,372	$	162,253	$	3,093
	General B	69		2,436		2,942
	General C	70		1,893		2,253
	General D	1,558		36,292		1,941
	General E	1,281		18,603		1,210
	General G	6		56		782
	Safety A	1,607		112,118		5,814
	Safety B	316		20,018		5,279
	Safety C	0		0		N/A
	Total	9,279	$	353,669	$	3,176
Grand Totals		68,012	$	3,706,202	$	4,541

Exhibit C-3
Age Distribution of Active Members as of June 30, 2020

	Age Groups						
	0-29	30-39	40-49	50-59	60-69	70+	Total
General Plans:							
Plan A							
Male	-	-	-	-	8	24	32
Female	-	-	-	-	33	27	60
Plan B							
Male	-	-	-	-	3	2	5
Female	-	-	-	-	14	3	17
Plan C							
Male	-	-	-	-	6	-	6
Female	-	-	-	1	18	6	25
Plan D							
Male	15	1,536	4,118	4,738	2,291	293	12,991
Female	9	3,287	9,015	9,712	4,482	502	27,007
Plan E							
Male	-	343	1,129	1,836	1,559	319	5,186
Female	2	652	2,185	4,388	3,458	479	11,164
Plan G							
Male	1,624	4,613	2,274	1,183	447	30	10,171
Female	3,487	9,675	4,215	2,192	664	33	20,266
Safety Plans:							
Plan A							
Male	-	-	-	-	2	-	2
Female	-	-	-	-	-	-	-
Plan B							
Male	34	1,721	3,029	2,872	169	3	7,828
Female	8	395	597	340	13	1	1,354
Plan C							
Male	1,548	1,574	244	58	6	-	3,430
Female	290	232	34	8	-	-	564
Grand Totals:	7,017	24,028	26,840	27,328	13,173	1,722	100,108

Exhibit C-4
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
All Plans

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	531	252	114	50	15	1	-	-	-	-	-	-	963
25-29	1,517	1,302	1,153	944	618	514	6	-	-	-	-	-	6,054
30-34	1,317	1,361	1,346	1,542	1,403	3,344	846	15	-	-	-	-	11,174
35-39	805	831	976	978	1,044	3,313	4,125	739	43	-	-	-	12,854
40-44	485	521	624	643	578	2,082	4,180	2,905	1,148	73	1	-	13,240
45-49	337	359	377	437	444	1,464	2,875	2,919	3,330	946	108	4	13,600
50-54	252	256	303	300	300	1,043	2,125	2,305	3,010	2,935	1,691	159	14,679
55-59	142	152	198	217	203	878	1,623	1,680	1,941	2,179	2,510	926	12,649
60-64	72	94	109	103	133	561	1,228	1,281	1,387	1,270	1,519	1,433	9,190
65 & Over	25	28	33	51	43	321	863	923	1,060	779	675	904	5,705
Total Count	5,483	5,156	5,233	5,265	4,781	13,521	17,871	12,767	11,919	8,182	6,504	3,426	100,108

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	58,113	61,957	63,532	66,090	65,992	48,312	-	-	-	-	-	-	60,287
25-29	58,814	62,140	65,876	70,115	71,464	74,892	78,390	-	-	-	-	-	65,312
30-34	65,286	66,651	67,179	71,643	71,247	78,960	84,390	82,506	-	-	-	-	72,867
35-39	69,780	73,997	74,107	75,843	75,335	87,104	91,527	90,712	103,576	-	-	-	84,054
40-44	64,358	73,802	73,384	75,299	80,911	90,249	92,691	94,478	99,587	117,288	113,820	-	89,384
45-49	65,120	68,681	71,449	74,939	79,201	87,143	91,492	97,172	103,209	109,992	113,315	142,887	93,843
50-54	65,694	67,002	74,316	74,159	73,743	83,123	87,012	96,853	101,971	112,085	115,502	114,533	98,431
55-59	61,486	74,103	71,247	73,032	77,502	83,568	80,370	86,954	92,924	103,911	108,204	108,945	94,461
60-64	68,859	69,374	68,640	76,854	75,822	83,346	78,565	84,041	88,785	96,541	104,866	100,955	91,139
65 & Over	90,499	86,984	82,328	121,636	100,157	86,695	76,885	82,690	80,320	84,604	95,546	96,894	86,163
Avg. Annual Compensation	$ 63,451	$ 67,728	$ 69,845	$ 73,603	$ 74,867	$ 84,409	$ 88,304	$ 92,401	$ 97,160	$ 104,684	$ 108,094	$ 102,722	$ 87,672

Exhibit C-4a
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
General Plan A

Count

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	-	-	3	3
65 & Over	-	-	-	-	-	-	1	4	10	7	5	62	89
Total Count	-	-	-	-	-	-	1	4	10	7	5	65	92

Compensation

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	-	-	63,192	63,192
65 & Over	-	-	-	-	-	-	110,880	92,007	119,719	77,595	83,885	114,522	109,428
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ 110,880	$ 92,007	$ 119,719	$ 77,595	$ 83,885	$ 112,153	$ 107,920

Exhibit C-4b
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
General Plan B

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	1	-	-	7	8
65 & Over	-	-	-	-	-	-	-	2	1	2	1	8	14
Total Count	-	-	-	-	-	-	-	2	2	2	1	15	22

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	58,932	-	-	104,643	98,930
65 & Over	-	-	-	-	-	-	-	137,850	60,132	126,420	135,408	104,436	111,398
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 137,850	$ 59,532	$ 126,420	$ 135,408	$ 104,533	$ 106,864

Exhibit C-4c
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
General Plan C

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	1	1
60-64	-	-	-	-	-	-	-	-	-	1	1	12	14
65 & Over	-	-	-	-	-	-	-	-	-	-	-	16	16
Total Count	-	-	-	-	-	-	-	-	-	1	1	29	31

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	192,036	192,036
60-64	-	-	-	-	-	-	-	-	-	65,208	68,028	74,256	73,165
65 & Over	-	-	-	-	-	-	-	-	-	-	-	103,226	103,226
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 65,208	$ 68,028	$ 94,301	$ 92,515

Exhibit C-4d
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
General Plan D

Count

Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
	Years of Service												
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	1	-	-	20	3	-	-	-	-	-	24
30-34	1	8	9	5	3	465	402	9	-	-	-	-	902
35-39	2	15	15	15	20	893	2,486	443	32	-	-	-	3,921
40-44	1	6	11	18	16	663	2,812	1,889	666	50	1	-	6,133
45-49	1	9	9	17	8	483	2,013	1,896	1,923	564	74	3	7,000
50-54	2	7	12	13	11	312	1,524	1,494	1,823	1,506	736	123	7,563
55-59	-	2	3	9	6	262	1,149	1,142	1,278	1,245	1,249	542	6,887
60-64	2	3	4	6	4	157	864	860	888	781	725	565	4,859
65 & Over	-	1	2	1	1	99	558	577	613	395	281	181	2,709
Total Count	9	51	66	84	69	3,354	11,811	8,310	7,223	4,541	3,066	1,414	39,998

Compensation

Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
	Years of Service												
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	78,276	-	-	55,910	54,488	-	-	-	-	-	56,664
30-34	47,580	66,722	76,759	74,738	65,552	78,478	70,775	66,308	-	-	-	-	74,704
35-39	107,538	86,906	85,991	86,826	95,285	92,275	84,145	84,452	97,397	-	-	-	86,236
40-44	194,760	125,454	89,174	84,619	106,624	96,973	88,906	91,380	91,607	110,971	113,820	-	91,105
45-49	131,784	107,476	77,735	107,352	93,624	97,986	90,483	94,940	96,584	101,601	108,664	127,556	95,044
50-54	105,648	168,537	144,905	106,680	120,886	89,421	86,806	96,477	98,464	103,982	100,344	113,523	97,063
55-59	-	250,530	131,576	86,629	137,568	90,828	82,413	89,822	94,538	102,606	106,728	112,174	96,738
60-64	107,256	124,284	94,173	84,086	143,331	87,596	81,003	88,593	95,425	101,155	109,545	109,847	96,150
65 & Over	-	36,684	88,266	48,492	76,236	87,545	77,428	86,024	81,750	87,848	101,627	118,578	87,367
Avg. Annual Compensation	$ 112,779	$ 110,740	$ 97,368	$ 92,187	$ 106,696	$ 91,159	$ 85,524	$ 91,838	$ 94,840	$ 101,496	$ 105,443	$ 112,214	$ 93,383

Exhibit C-4e
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
General Plan E

Count

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	2	-	-	-	-	-	-	2
30-34	-	-	-	-	1	87	125	2	-	-	-	-	215
35-39	-	-	-	-	-	136	524	118	2	-	-	-	780
40-44	-	-	-	-	-	100	601	502	184	4	-	-	1,391
45-49	-	-	-	-	-	106	488	563	616	140	10	-	1,923
50-54	-	-	-	-	-	73	422	502	641	709	428	22	2,797
55-59	-	-	-	-	-	85	419	448	504	686	969	316	3,427
60-64	-	-	-	-	-	74	350	399	476	459	752	812	3,322
65 & Over	-	-	-	-	-	54	292	336	432	368	382	629	2,493
Total Count	-	-	-	-	1	717	3,221	2,870	2,855	2,366	2,541	1,779	16,350

Compensation

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	54,060	-	-	-	-	-	-	54,060
30-34	-	-	-	-	61,668	72,108	60,784	79,332	-	-	-	-	65,543
35-39	-	-	-	-	-	77,774	71,747	70,056	57,810	-	-	-	72,506
40-44	-	-	-	-	-	82,014	77,065	74,200	74,773	87,528	-	-	76,114
45-49	-	-	-	-	-	88,734	76,089	78,942	81,072	78,230	74,058	-	79,363
50-54	-	-	-	-	-	85,607	75,340	75,749	82,100	87,298	80,395	87,563	81,131
55-59	-	-	-	-	-	84,328	68,779	71,501	76,136	90,283	91,907	86,704	83,100
60-64	-	-	-	-	-	90,616	71,663	71,999	74,367	85,886	97,239	91,870	85,207
65 & Over	-	-	-	-	-	105,663	74,168	76,261	76,882	79,893	90,493	87,951	82,427
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ 61,668	$ 84,232	$ 73,267	$ 74,748	$ 78,257	$ 86,202	$ 91,263	$ 89,514	$ 81,315

Exhibit C-4f
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
General Plan G

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	306	158	68	27	9	1	-	-	-	-	-	-	569
25-29	1,161	1,030	879	694	449	329	-	-	-	-	-	-	4,542
30-34	1,143	1,219	1,152	1,295	1,221	2,202	15	-	-	-	-	-	8,247
35-39	729	773	887	856	918	1,864	13	1	-	-	-	-	6,041
40-44	453	494	578	582	524	1,158	16	1	-	-	-	-	3,806
45-49	325	346	357	405	420	816	12	1	1	-	-	-	2,683
50-54	239	245	283	284	285	631	9	2	-	1	-	-	1,979
55-59	137	148	192	207	194	505	9	4	-	-	-	-	1,396
60-64	69	90	105	97	129	324	7	3	-	-	-	-	824
65 & Over	25	27	31	50	42	165	9	1	-	-	-	-	350
Total Count	4,587	4,530	4,532	4,497	4,191	7,995	90	13	1	1	-	-	30,437

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	45,057	47,898	49,302	50,196	47,587	48,312	-	-	-	-	-	-	46,643
25-29	52,310	55,327	57,921	60,407	60,667	61,117	-	-	-	-	-	-	56,781
30-34	62,785	64,491	62,982	66,751	66,779	71,505	71,534	-	-	-	-	-	66,623
35-39	68,302	72,950	72,265	72,721	71,692	79,810	79,329	71,316	-	-	-	-	74,195
40-44	62,807	72,399	71,791	73,163	78,450	84,034	143,093	143,412	-	-	-	-	75,971
45-49	64,433	67,451	70,418	72,546	77,809	78,809	120,026	67,224	41,040	-	-	-	73,550
50-54	63,949	63,521	69,967	72,259	71,417	78,529	107,431	299,760	-	38,700	-	-	72,097
55-59	60,306	71,280	69,125	72,180	73,754	77,356	171,955	107,679	-	-	-	-	73,335
60-64	67,518	66,604	67,667	76,407	73,729	78,708	85,370	92,996	-	-	-	-	74,100
65 & Over	90,499	88,847	81,945	123,099	100,727	79,165	106,504	44,904	-	-	-	-	90,437
Avg. Annual Compensation	$ 60,156	$ 64,717	$ 66,256	$ 69,593	$ 70,916	$ 76,945	$ 110,052	$ 125,852	$ 41,040	$ 38,700	$ -	$ -	$ 69,203

Exhibit C-4g
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
Safety Plan A

Count

	Years of Service												
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	1	-	-	1
65 & Over	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Count	-	-	-	-	-	-	-	-	-	1	-	1	2

Compensation

	Years of Service												
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-	-	166,344	-	-	166,344
65 & Over	-	-	-	-	-	-	-	-	-	-	-	134,724	134,724
Avg. Annual Compensation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 166,344	$ -	$ 134,724	$ 150,534

Exhibit C-4h
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
Safety Plan B

Count

	Years of Service												Total
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Count
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	1	-	38	3	-	-	-	-	-	42
30-34	1	1	5	7	-	250	302	4	-	-	-	-	570
35-39	3	5	4	4	8	240	1,096	177	9	-	-	-	1,546
40-44	2	4	4	8	7	103	748	512	298	19	-	-	1,705
45-49	-	-	2	2	2	39	362	457	790	242	24	1	1,921
50-54	-	-	4	-	-	16	170	305	546	719	527	14	2,301
55-59	1	-	2	-	-	10	46	86	159	248	292	67	911
60-64	-	-	-	-	-	3	7	19	22	28	41	34	154
65 & Over	-	-	-	-	-	2	3	3	4	7	6	7	32
Total Count	7	10	21	22	17	701	2,737	1,563	1,828	1,263	890	123	9,182

Compensation

	Years of Service												Average
Age	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Comp.
Under 25	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	104,748	-	108,426	102,292	-	-	-	-	-	107,901
30-34	84,636	91,896	102,744	103,233	-	110,954	112,632	120,537	-	-	-	-	111,664
35-39	92,620	103,814	91,467	103,341	106,607	114,228	117,775	120,263	135,719	-	-	-	117,357
40-44	89,028	112,812	115,143	103,022	111,242	114,484	118,347	125,697	132,745	140,176	-	-	122,925
45-49	-	-	105,594	114,852	101,100	113,118	116,922	128,943	136,675	147,921	144,013	188,880	132,078
50-54	-	-	145,020	-	-	108,247	116,750	132,009	137,006	153,603	165,183	165,784	146,476
55-59	115,416	-	147,936	-	-	119,441	117,023	128,401	133,170	148,159	168,599	186,472	151,123
60-64	-	-	-	-	-	136,112	115,951	129,471	134,091	141,151	162,909	182,169	152,307
65 & Over	-	-	-	-	-	127,176	140,124	125,056	139,014	144,276	135,510	155,210	141,107
Avg. Annual Compensation	$ 93,710	$ 106,222	$ 115,586	$ 104,301	$ 107,867	$ 112,790	$ 117,178	$ 127,443	$ 135,798	$ 150,915	$ 165,428	$ 181,169	$ 132,390

Exhibit C-4i
Age and Service Distribution of Active Members by Count and Average Compensation as of June 30, 2020
Safety Plan C

Count

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Total Count
Under 25	225	94	46	23	6	-	-	-	-	-	-	-	394
25-29	356	272	273	249	169	125	-	-	-	-	-	-	1,444
30-34	172	133	180	235	178	340	2	-	-	-	-	-	1,240
35-39	71	38	70	103	98	180	6	-	-	-	-	-	566
40-44	29	17	31	35	31	58	3	1	-	-	-	-	205
45-49	11	4	9	13	14	20	-	2	-	-	-	-	73
50-54	11	4	4	3	4	11	-	2	-	-	-	-	39
55-59	4	2	1	1	3	16	-	-	-	-	-	-	27
60-64	1	1	-	-	-	3	-	-	-	-	-	-	5
65 & Over	-	-	-	-	-	1	-	-	-	-	-	-	1
Total Count	880	565	614	662	503	754	11	5	-	-	-	-	3,994

Compensation

Age	Years of Service 0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	Average Comp.
Under 25	75,870	85,587	84,567	84,748	93,600	-	-	-	-	-	-	-	79,992
25-29	80,025	87,942	91,445	97,035	100,148	104,324	-	-	-	-	-	-	91,067
30-34	81,898	86,261	92,570	97,594	102,040	106,129	128,250	-	-	-	-	-	96,500
35-39	82,934	86,281	93,910	99,124	102,831	107,855	109,550	-	-	-	-	-	99,115
40-44	82,387	87,162	92,109	99,700	102,382	108,620	105,060	93,588	-	-	-	-	98,041
45-49	79,357	87,780	98,468	100,961	109,593	106,249	-	100,146	-	-	-	-	99,758
50-54	96,334	102,537	99,528	113,040	109,827	115,012	-	110,094	-	-	-	-	105,941
55-59	88,416	106,524	144,288	127,032	199,764	134,290	-	-	-	-	-	-	132,813
60-64	84,636	153,960	-	-	-	129,636	-	-	-	-	-	-	125,501
65 & Over	-	-	-	-	-	139,716	-	-	-	-	-	-	139,716
Avg. Annual Compensation	$ 79,880	$ 87,304	$ 91,816	$ 97,468	$ 102,334	$ 107,302	$ 111,725	$ 102,814	$ -	$ -	$ -	$ -	$ 93,801

Exhibit C-5
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
All Plans

Age	Retirement Year: Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	1	1	10	11	99	13	135	$ 1,072
35-39	-	-	-	-	-	-	2	4	15	73	3	97	2,513
40-44	-	-	-	-	-	1	2	18	65	120	13	219	3,056
45-49	-	-	-	-	-	2	41	59	93	159	13	367	3,090
50-54	-	-	-	1	16	71	119	107	176	639	133	1,262	3,517
55-59	-	-	-	5	70	139	155	159	536	2,345	478	3,887	5,580
60-64	-	-	11	45	107	138	173	441	1,860	3,426	523	6,724	5,184
65-69	-	11	58	84	101	157	461	1,806	3,241	5,323	631	11,873	4,656
70-74	7	94	180	146	181	640	2,152	3,382	4,309	3,191	271	14,553	4,630
75-79	20	140	185	212	591	1,655	2,803	2,550	1,905	1,386	127	11,574	4,689
80-84	57	109	153	452	1,199	1,588	1,691	1,041	660	1,049	89	8,088	4,203
85-89	77	105	340	684	1,238	915	546	314	275	749	76	5,319	3,996
90-94	61	167	382	452	564	242	158	154	158	407	19	2,764	3,608
95-99	33	115	194	193	119	59	59	49	57	117	6	1,001	3,073
100 & Over	20	34	29	13	11	10	9	7	11	4	1	149	2,947
Total Count	275	775	1,532	2,287	4,197	5,618	8,372	10,101	13,372	19,087	2,396	**68,012**	
Avg Monthly Benefit	$ 2,310	$ 2,973	$ 3,122	$ 3,558	$ 4,526	$ 4,449	$ 5,167	$ 4,478	$ 4,537	$ 4,569	$ 5,277		**$ 4,541**

Exhibit C-5a
Distribution of Retired Members by Age and Retirement Year as of June 30, 2020
General Plan A

Age	Retirement Year											Total Count	Average Monthly Benefit
	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24		
Under 35	-	-	-	-	-	-	-	2	2	7	-	11	$ 357
35-39	-	-	-	-	-	-	-	2	1	3	1	7	1,267
40-44	-	-	-	-	-	-	1	5	6	1	1	14	2,069
45-49	-	-	-	-	-	-	-	3	4	4	-	11	2,498
50-54	-	-	-	1	1	1	3	1	2	8	1	18	2,481
55-59	-	-	-	-	-	4	2	7	4	13	2	32	3,382
60-64	-	-	1	5	-	7	9	25	46	90	6	189	4,340
65-69	-	5	22	16	8	21	150	333	684	256	14	1,509	5,377
70-74	2	47	61	43	48	336	763	1,407	724	300	35	3,766	5,723
75-79	12	62	73	70	384	775	1,539	808	261	432	35	4,451	5,503
80-84	34	65	69	336	775	962	822	219	151	540	38	4,011	4,739
85-89	42	70	257	477	957	566	186	94	95	470	44	3,258	4,173
90-94	42	126	297	376	451	125	70	75	85	300	13	1,960	3,634
95-99	28	102	176	172	85	40	38	39	39	94	5	818	3,032
100 & Over	17	34	29	13	6	8	7	6	9	2	1	132	3,064
Total Count	177	511	985	1,509	2,715	2,845	3,590	3,026	2,113	2,520	196	**20,187**	
Avg Monthly Benefit	$ 1,778	$ 2,421	$ 2,520	$ 3,051	$ 4,378	$ 4,515	$ 6,123	$ 6,241	$ 6,224	$ 3,865	$ 3,497		**$ 4,845**

Exhibit C-5b
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
General Plan B

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	-	-	-	$ -
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-	-	1	-	1	2,738
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	1	1	2	4,215
60-64	-	-	-	-	1	1	-	11	7	31	5	56	5,335
65-69	-	-	-	-	-	1	7	19	74	59	1	161	6,055
70-74	-	-	1	5	3	7	21	59	73	25	1	195	5,360
75-79	-	-	2	3	5	13	38	31	23	7	1	123	4,403
80-84	-	-	-	3	4	17	35	20	11	5	-	95	4,065
85-89	-	-	1	3	10	27	6	7	3	7	-	64	3,326
90-94	-	-	3	3	13	8	3	3	-	7	-	40	1,964
95-99	-	-	-	3	3	-	1	-	-	2	-	9	2,154
100 & Over	-	-	-	-	1	-	-	-	-	-	-	1	4,071
Total Count	-	-	7	20	40	74	111	150	191	145	9	**747**	
Avg Monthly Benefit	$ -	$ -	$ 1,338	$ 1,418	$ 2,025	$ 2,492	$ 3,684	$ 4,716	$ 6,332	$ 6,130	$ 6,098		**$ 4,783**

Exhibit C-5c
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
General Plan C

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	2	-	2	$ 5,003
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	1	-	-	1	1,623
45-49	-	-	-	-	-	-	-	-	2	-	-	2	1,475
50-54	-	-	-	-	-	-	-	-	-	1	-	1	1,284
55-59	-	-	-	-	-	-	1	-	-	1	1	3	4,127
60-64	-	-	-	1	-	1	-	3	7	26	4	42	4,455
65-69	-	1	2	4	1	2	7	13	39	39	3	111	5,876
70-74	-	-	3	2	1	2	16	23	44	25	3	119	5,012
75-79	-	-	1	3	8	9	11	28	14	3	-	77	2,990
80-84	-	-	-	7	9	13	19	6	6	5	1	66	2,641
85-89	-	-	-	3	6	12	10	7	1	6	-	45	2,265
90-94	-	-	1	2	8	1	2	1	1	5	-	21	1,811
95-99	-	-	-	1	3	-	-	-	-	-	-	4	881
100 & Over	-	-	-	-	-	-	-	-	-	1	-	1	1,648
Total Count	-	1	7	23	36	40	66	81	115	114	12	**495**	
Avg Monthly Benefit	$ -	$ 1,844	$ 1,301	$ 1,016	$ 1,369	$ 2,119	$ 2,879	$ 3,361	$ 5,846	$ 5,418	$ 7,764		**$ 4,068**

Exhibit C-5d
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
General Plan D

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	2	6	45	7	60	$ 880
35-39	-	-	-	-	-	-	1	1	3	28	1	34	1,679
40-44	-	-	-	-	-	1	-	5	28	30	6	70	2,057
45-49	-	-	-	-	-	2	12	14	34	71	4	137	2,269
50-54	-	-	-	-	3	5	19	30	74	375	75	581	2,106
55-59	-	-	-	-	9	29	46	60	343	875	151	1,513	2,740
60-64	-	-	2	5	16	38	60	251	603	1,634	342	2,951	3,733
65-69	-	1	3	12	24	45	172	466	1,085	2,469	315	4,592	4,168
70-74	-	-	-	13	31	120	281	609	1,518	1,381	123	4,076	3,717
75-79	-	-	4	11	41	136	291	675	723	402	31	2,314	3,322
80-84	-	-	4	13	45	123	332	363	234	170	17	1,301	2,717
85-89	-	-	-	10	26	118	146	85	66	65	11	527	2,551
90-94	-	-	2	3	27	46	29	26	12	37	2	184	2,030
95-99	-	-	-	4	11	8	7	2	1	6	-	39	1,679
100 & Over	-	-	-	-	1	-	-	-	-	1	-	2	690
Total Count	-	1	15	71	234	671	1,396	2,589	4,730	7,589	1,085	**18,381**	
Avg Monthly Benefit	$ -	$ 2,872	$ 1,635	$ 1,620	$ 1,769	$ 2,035	$ 2,381	$ 2,796	$ 3,540	$ 3,954	$ 4,622		**$ 3,495**

Exhibit C-5e
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
General Plan E

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	1	-	3	1	19	-	24	$ 696
35-39	-	-	-	-	-	-	1	1	5	10	-	17	1,012
40-44	-	-	-	-	-	-	-	2	4	17	3	26	1,194
45-49	-	-	-	-	-	-	-	1	12	18	1	32	1,191
50-54	-	-	-	-	-	-	2	5	17	24	3	51	1,082
55-59	-	-	-	-	-	-	2	5	14	300	56	377	1,036
60-64	-	-	-	-	-	-	2	6	366	695	109	1,178	1,752
65-69	-	-	-	-	-	4	8	434	733	2,244	265	3,688	2,909
70-74	-	-	-	-	-	5	337	715	1,809	1,300	88	4,254	2,699
75-79	-	-	-	-	2	182	363	938	839	375	40	2,739	2,332
80-84	-	-	-	-	57	196	429	409	223	166	16	1,496	1,867
85-89	-	-	-	21	71	163	172	94	77	74	10	682	1,475
90-94	-	-	-	10	48	51	28	25	20	14	1	197	1,161
95-99	-	-	1	10	13	8	5	1	7	4	1	50	830
100 & Over	-	-	-	-	3	2	-	1	-	-	-	6	438
Total Count	-	-	1	41	194	612	1,349	2,640	4,127	5,260	593	**14,817**	
Avg Monthly Benefit	$ -	$ -	$ 81	$ 297	$ 555	$ 815	$ 1,275	$ 1,696	$ 2,596	$ 3,002	$ 3,305		**$ 2,381**

Exhibit C-5f
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
General Plan G

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	1	-	1	$ 2,430
35-39	-	-	-	-	-	-	-	-	-	1	-	1	1,289
40-44	-	-	-	-	-	-	-	-	-	1	-	1	2,361
45-49	-	-	-	-	-	-	-	-	-	2	-	2	1,024
50-54	-	-	-	-	-	-	-	-	-	1	1	2	247
55-59	-	-	-	-	-	-	-	-	-	1	5	6	680
60-64	-	-	-	-	-	-	-	-	-	7	2	9	742
65-69	-	-	-	-	-	-	-	-	-	15	7	22	1,029
70-74	-	-	-	-	-	-	-	-	-	10	5	15	2,269
75-79	-	-	-	-	-	-	-	-	-	5	-	5	2,364
80-84	-	-	-	-	-	-	-	-	-	2	-	2	1,715
85-89	-	-	-	-	-	-	-	-	-	-	-	-	-
90-94	-	-	-	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	-	-	-	-	-	-	-	46	20	**66**	
Avg Monthly Benefit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,568	$ 959		**$ 1,383**

Exhibit C-5g
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
Safety Plan A

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	2	2	4	8	$ -
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	1	1	-	2	6,667
45-49	-	-	-	-	-	-	-	-	-	1	-	1	5,134
50-54	-	-	-	-	-	-	3	-	1	2	-	6	5,867
55-59	-	-	-	-	2	-	1	-	2	13	1	19	5,296
60-64	-	-	1	1	1	1	3	6	47	20	6	86	10,117
65-69	-	4	21	24	21	41	43	282	160	74	15	685	9,653
70-74	5	47	109	67	82	144	679	412	68	122	16	1,751	8,602
75-79	8	78	102	125	143	530	533	63	36	157	19	1,794	8,135
80-84	23	44	80	92	308	275	53	22	34	160	17	1,108	7,268
85-89	35	35	81	169	167	28	25	27	32	124	10	733	6,792
90-94	19	41	79	58	16	11	26	24	40	43	3	360	5,919
95-99	5	13	17	3	4	3	8	7	10	11	-	81	5,761
100 & Over	3	-	-	-	-	-	2	-	2	-	-	7	3,567
Total Count	98	262	490	539	744	1,033	1,376	843	435	730	91	**6,641**	
Avg Monthly Benefit	$ 3,272	$ 4,054	$ 4,473	$ 5,815	$ 7,580	$ 8,422	$ 9,868	$ 10,357	$ 9,249	$ 6,793	$ 6,659		**$ 7,973**

Exhibit C-5h
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2020
Safety Plan B

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	1	3	-	21	2	27	$ 1,964
35-39	-	-	-	-	-	-	-	-	6	31	1	38	4,194
40-44	-	-	-	-	-	-	1	6	25	69	3	104	4,278
45-49	-	-	-	-	-	-	29	41	41	62	8	181	4,115
50-54	-	-	-	-	12	65	92	71	82	228	53	603	5,104
55-59	-	-	-	5	59	106	103	87	173	1,138	260	1,931	8,761
60-64	-	-	7	33	89	90	99	139	784	923	49	2,213	8,853
65-69	-	-	10	28	47	43	74	259	466	166	11	1,104	8,166
70-74	-	-	6	16	16	26	55	157	72	28	-	376	6,504
75-79	-	-	3	-	8	10	28	7	9	5	1	71	4,553
80-84	-	-	-	1	1	2	1	2	1	1	-	9	4,488
85-89	-	-	1	1	1	1	1	-	1	3	1	10	1,797
90-94	-	-	-	-	1	-	-	-	-	1	-	2	1,069
95-99	-	-	-	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	27	84	234	343	484	772	1,660	2,676	389	**6,669**	
Avg Monthly Benefit	$ -	$ -	$ 2,418	$ 2,614	$ 3,489	$ 3,831	$ 4,242	$ 6,370	$ 8,517	$ 9,380	$ 10,819		**$ 7,922**

Exhibit C-5i
Distribution of Retired Members and Beneficiaries by Age and Retirement Year
as of June 30, 2020
Safety Plan C

	Retirement Year												
Age	Pre-1975	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020-24	Total Count	Average Monthly Benefit
Under 35	-	-	-	-	-	-	-	-	-	2	-	2	$ 2,887
35-39	-	-	-	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-	1	-	1	2,976
45-49	-	-	-	-	-	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-	-	3	1	4	1,217
60-64	-	-	-	-	-	-	-	-	-	-	-	-	-
65-69	-	-	-	-	-	-	-	-	-	1	-	1	23,607
70-74	-	-	-	-	-	-	-	-	1	-	-	1	18,381
75-79	-	-	-	-	-	-	-	-	-	-	-	-	-
80-84	-	-	-	-	-	-	-	-	-	-	-	-	-
85-89	-	-	-	-	-	-	-	-	-	-	-	-	-
90-94	-	-	-	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	-	-	-	-	-	-	1	7	1	**9**	
Avg Monthly Benefit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,381	$ 5,162	$ 1,090		**$ 6,178**

Appendix D Member Contribution Rates

This section illustrates the member normal contribution rates and the normal plus cost-of-living contribution rates by entry age.

Exhibit D-1
Normal Member Contribution Rates

	General					Safety		
Entry Age	Plan A	Plan B	Plan C	Plan D	Plan G	Plan A	Plan B	Plan C
16	2.68%	5.36%	4.57%	4.57%	7.34%	4.17%	8.34%	11.17%
17	2.74%	5.48%	4.66%	4.66%	7.34%	4.17%	8.34%	11.17%
18	2.80%	5.59%	4.76%	4.76%	7.34%	4.17%	8.34%	11.17%
19	2.86%	5.71%	4.87%	4.87%	7.34%	4.25%	8.50%	11.17%
20	2.92%	5.83%	4.97%	4.97%	7.34%	4.34%	8.67%	11.17%
21	2.98%	5.95%	5.07%	5.07%	7.34%	4.42%	8.85%	11.17%
22	3.04%	6.08%	5.18%	5.18%	7.34%	4.51%	9.03%	11.17%
23	3.10%	6.21%	5.29%	5.29%	7.34%	4.61%	9.21%	11.17%
24	3.17%	6.34%	5.40%	5.40%	7.34%	4.70%	9.40%	11.17%
25	3.24%	6.47%	5.52%	5.52%	7.34%	4.74%	9.48%	11.17%
26	3.30%	6.61%	5.63%	5.63%	7.34%	4.78%	9.55%	11.17%
27	3.37%	6.75%	5.75%	5.75%	7.34%	4.87%	9.75%	11.17%
28	3.45%	6.89%	5.87%	5.87%	7.34%	4.97%	9.95%	11.17%
29	3.52%	7.04%	6.00%	6.00%	7.34%	5.08%	10.15%	11.17%
30	3.59%	7.19%	6.12%	6.12%	7.34%	5.14%	10.28%	11.17%
31	3.67%	7.34%	6.25%	6.25%	7.34%	5.20%	10.40%	11.17%
32	3.75%	7.50%	6.38%	6.38%	7.34%	5.31%	10.61%	11.17%
33	3.83%	7.66%	6.52%	6.52%	7.34%	5.41%	10.83%	11.17%
34	3.91%	7.82%	6.66%	6.66%	7.34%	5.52%	11.04%	11.17%
35	3.99%	7.98%	6.80%	6.80%	7.34%	5.63%	11.27%	11.17%
36	4.07%	8.14%	6.95%	6.95%	7.34%	5.75%	11.49%	11.17%
37	4.15%	8.30%	7.10%	7.10%	7.34%	5.86%	11.72%	11.17%
38	4.23%	8.47%	7.25%	7.25%	7.34%	5.98%	11.95%	11.17%
39	4.32%	8.63%	7.40%	7.40%	7.34%	6.09%	12.19%	11.17%
40	4.40%	8.80%	7.55%	7.55%	7.34%	6.21%	12.43%	11.17%
41	4.49%	8.97%	7.70%	7.70%	7.34%	6.34%	12.67%	11.17%
42	4.57%	9.15%	7.85%	7.85%	7.34%	6.45%	12.91%	11.17%
43	4.66%	9.32%	8.01%	8.01%	7.34%	6.56%	13.12%	11.17%
44	4.75%	9.49%	8.17%	8.17%	7.34%	6.65%	13.30%	11.17%
45	4.83%	9.66%	8.33%	8.33%	7.34%	6.70%	13.40%	11.17%
46	4.91%	9.83%	8.49%	8.49%	7.34%	6.70%	13.40%	11.17%
47	4.99%	9.97%	8.66%	8.66%	7.34%	6.70%	13.40%	11.17%
48	5.04%	10.09%	8.82%	8.82%	7.34%	6.70%	13.40%	11.17%
49	5.09%	10.18%	8.98%	8.98%	7.34%	6.70%	13.40%	11.17%
50	5.12%	10.23%	9.14%	9.14%	7.34%	6.70%	13.40%	11.17%
51	5.13%	10.25%	9.30%	9.30%	7.34%	6.70%	13.40%	11.17%
52	5.13%	10.25%	9.43%	9.43%	7.34%	6.70%	13.40%	11.17%
53	5.13%	10.25%	9.54%	9.54%	7.34%	6.70%	13.40%	11.17%
54	5.13%	10.25%	9.63%	9.63%	7.34%	6.70%	13.40%	11.17%
55	5.13%	10.25%	9.68%	9.68%	7.34%	6.70%	13.40%	11.17%
56	5.13%	10.25%	9.70%	9.70%	7.34%	6.70%	13.40%	11.17%
57	5.13%	10.25%	9.70%	9.70%	7.34%	6.70%	13.40%	11.17%
58	5.13%	10.25%	9.70%	9.70%	7.34%	6.70%	13.40%	11.17%
59	5.13%	10.25%	9.70%	9.70%	7.34%	6.70%	13.40%	11.17%
60	5.13%	10.25%	9.70%	9.70%	7.34%	6.70%	13.40%	11.17%

Exhibit D-2
Normal Plus Cost-of-Living Member Contribution Rates

	General					Safety		
Entry Age	Plan A	Plan B	Plan C	Plan D	Plan G	Plan A	Plan B	Plan C
16	4.94%	6.75%	5.80%	5.76%	9.10%	7.80%	11.09%	14.42%
17	5.05%	6.90%	5.91%	5.87%	9.10%	7.80%	11.09%	14.42%
18	5.16%	7.04%	6.04%	5.99%	9.10%	7.80%	11.09%	14.42%
19	5.28%	7.19%	6.18%	6.13%	9.10%	7.95%	11.31%	14.42%
20	5.39%	7.34%	6.30%	6.26%	9.10%	8.12%	11.53%	14.42%
21	5.50%	7.49%	6.43%	6.39%	9.10%	8.27%	11.77%	14.42%
22	5.61%	7.65%	6.57%	6.52%	9.10%	8.44%	12.01%	14.42%
23	5.72%	7.82%	6.71%	6.66%	9.10%	8.63%	12.25%	14.42%
24	5.85%	7.98%	6.85%	6.80%	9.10%	8.80%	12.50%	14.42%
25	5.98%	8.15%	7.00%	6.95%	9.10%	8.87%	12.61%	14.42%
26	6.09%	8.32%	7.14%	7.09%	9.10%	8.95%	12.70%	14.42%
27	6.22%	8.50%	7.29%	7.24%	9.10%	9.11%	12.97%	14.42%
28	6.36%	8.67%	7.44%	7.39%	9.10%	9.30%	13.24%	14.42%
29	6.49%	8.86%	7.61%	7.56%	9.10%	9.51%	13.50%	14.42%
30	6.62%	9.05%	7.76%	7.71%	9.10%	9.62%	13.68%	14.42%
31	6.77%	9.24%	7.93%	7.87%	9.10%	9.73%	13.84%	14.42%
32	6.92%	9.44%	8.09%	8.03%	9.10%	9.94%	14.11%	14.42%
33	7.06%	9.64%	8.27%	8.21%	9.10%	10.12%	14.41%	14.42%
34	7.21%	9.85%	8.45%	8.39%	9.10%	10.33%	14.69%	14.42%
35	7.36%	10.05%	8.62%	8.56%	9.10%	10.54%	14.99%	14.42%
36	7.51%	10.25%	8.81%	8.75%	9.10%	10.76%	15.29%	14.42%
37	7.66%	10.45%	9.00%	8.94%	9.10%	10.97%	15.59%	14.42%
38	7.80%	10.66%	9.19%	9.13%	9.10%	11.19%	15.90%	14.42%
39	7.97%	10.87%	9.38%	9.32%	9.10%	11.40%	16.22%	14.42%
40	8.12%	11.08%	9.57%	9.51%	9.10%	11.62%	16.54%	14.42%
41	8.28%	11.29%	9.76%	9.70%	9.10%	11.87%	16.85%	14.42%
42	8.43%	11.52%	9.95%	9.89%	9.10%	12.07%	17.17%	14.42%
43	8.60%	11.73%	10.16%	10.09%	9.10%	12.28%	17.45%	14.42%
44	8.76%	11.95%	10.36%	10.29%	9.10%	12.45%	17.69%	14.42%
45	8.91%	12.16%	10.56%	10.49%	9.10%	12.54%	17.83%	14.42%
46	9.06%	12.38%	10.77%	10.69%	9.10%	12.54%	17.83%	14.42%
47	9.20%	12.55%	10.98%	10.91%	9.10%	12.54%	17.83%	14.42%
48	9.30%	12.70%	11.18%	11.11%	9.10%	12.54%	17.83%	14.42%
49	9.39%	12.82%	11.39%	11.31%	9.10%	12.54%	17.83%	14.42%
50	9.44%	12.88%	11.59%	11.51%	9.10%	12.54%	17.83%	14.42%
51	9.46%	12.90%	11.79%	11.71%	9.10%	12.54%	17.83%	14.42%
52	9.46%	12.90%	11.96%	11.88%	9.10%	12.54%	17.83%	14.42%
53	9.46%	12.90%	12.10%	12.01%	9.10%	12.54%	17.83%	14.42%
54	9.46%	12.90%	12.21%	12.13%	9.10%	12.54%	17.83%	14.42%
55	9.46%	12.90%	12.28%	12.19%	9.10%	12.54%	17.83%	14.42%
56	9.46%	12.90%	12.30%	12.22%	9.10%	12.54%	17.83%	14.42%
57	9.46%	12.90%	12.30%	12.22%	9.10%	12.54%	17.83%	14.42%
58	9.46%	12.90%	12.30%	12.22%	9.10%	12.54%	17.83%	14.42%
59	9.46%	12.90%	12.30%	12.22%	9.10%	12.54%	17.83%	14.42%
60	9.46%	12.90%	12.30%	12.22%	9.10%	12.54%	17.83%	14.42%

Appendix E Historical Information

This section presents historical statistical information on LACERA's membership and the calculated contribution rates.

Exhibit E-1
Active Membership Data

	General Members					Safety Members					Total Members				
Valuation Date (June 30)	Number	Annual Salary (in millions)	Average Age	Average Service	Average Monthly Salary	Number	Annual Salary (in millions)	Average Age	Average Service	Average Monthly Salary	Number	Annual Salary (in millions)	Average Age	Average Service	Average Monthly Salary
1998	65,782	$ 2,837	44.7	12.9	$ 3,594	10,947	$ 725	39.9	13.8	$ 5,519	76,729	$ 3,562	44.0	13.0	$ 3,870
1999	68,652	$ 3,105	44.6	12.7	$ 3,769	11,024	$ 753	40.0	13.7	$ 5,696	79,676	$ 3,858	43.9	12.8	$ 4,035
2000	71,940	$ 3,353	44.4	12.5	$ 3,884	11,264	$ 790	39.8	13.8	$ 5,849	83,204	$ 4,143	43.8	12.6	$ 4,150
2001	75,048	$ 3,608	44.5	12.3	$ 4,006	12,021	$ 860	39.6	13.0	$ 5,967	87,069	$ 4,468	43.9	12.4	$ 4,277
2002	77,062	$ 3,833	44.7	12.3	$ 4,145	12,190	$ 894	39.6	13.8	$ 6,115	89,252	$ 4,727	44.0	12.5	$ 4,414
2003	75,995	$ 3,954	45.2	12.7	$ 4,336	11,765	$ 899	40.1	13.7	$ 6,370	87,760	$ 4,853	44.5	12.9	$ 4,609
2004	74,826	$ 3,967	45.6	13.1	$ 4,418	11,409	$ 885	40.6	14.7	$ 6,467	86,235	$ 4,852	44.9	13.3	$ 4,689
2005	75,167	$ 4,046	45.8	13.2	$ 4,486	11,217	$ 905	41.0	14.9	$ 6,722	86,384	$ 4,951	45.2	13.4	$ 4,777
2006	77,167	$ 4,267	45.7	13.0	$ 4,608	11,464	$ 969	41.2	15.0	$ 7,047	88,631	$ 5,236	45.1	13.3	$ 4,924
2007	79,829	$ 4,673	45.7	12.8	$ 4,878	12,267	$ 1,104	40.8	14.4	$ 7,499	92,096	$ 5,777	45.1	13.0	$ 5,227
2008	81,664	$ 5,017	45.8	12.8	$ 5,119	12,828	$ 1,187	40.5	13.7	$ 7,714	94,492	$ 6,204	45.1	12.9	$ 5,471
2009	82,878	$ 5,348	46.1	13.1	$ 5,377	12,910	$ 1,240	40.8	14.0	$ 8,002	95,788	$ 6,588	45.4	13.2	$ 5,731
2010	81,413	$ 5,318	46.6	13.6	$ 5,444	12,997	$ 1,257	41.3	14.5	$ 8,062	94,410	$ 6,575	45.9	13.7	$ 5,804
2011	80,145	$ 5,295	47.0	14.0	$ 5,506	12,641	$ 1,240	41.9	15.1	$ 8,172	92,786	$ 6,535	46.3	14.2	$ 5,869
2012	79,467	$ 5,272	47.3	14.4	$ 5,528	12,485	$ 1,230	42.3	15.5	$ 8,209	91,952	$ 6,502	46.7	14.6	$ 5,892
2013	79,006	$ 5,253	47.6	14.8	$ 5,541	12,539	$ 1,235	42.3	15.7	$ 8,207	91,545	$ 6,488	46.9	14.9	$ 5,906
2014	79,943	$ 5,488	47.6	14.9	$ 5,720	12,523	$ 1,253	42.6	15.8	$ 8,337	92,466	$ 6,741	47.0	15.0	$ 6,075
2015	81,228	$ 5,706	47.6	14.8	$ 5,854	12,446	$ 1,300	42.8	16.0	$ 8,702	93,674	$ 7,006	46.9	15.0	$ 6,233
2016	82,916	$ 5,950	47.4	14.6	$ 5,980	12,528	$ 1,343	42.8	16.0	$ 8,931	95,444	$ 7,293	46.8	14.8	$ 6,367
2017	84,513	$ 6,290	47.3	14.5	$ 6,202	12,698	$ 1,388	42.5	15.6	$ 9,110	97,211	$ 7,678	46.7	14.6	$ 6,582
2018	85,703	$ 6,610	47.2	14.4	$ 6,428	12,771	$ 1,452	42.2	15.3	$ 9,471	98,474	$ 8,062	46.6	14.5	$ 6,822
2019	86,392	$ 6,816	47.3	14.4	$ 6,574	12,794	$ 1,540	42.0	15.1	$ 10,032	99,186	$ 8,356	46.6	14.5	$ 7,020
2020	86,930	$ 7,186	47.3	14.4	$ 6,889	13,178	$ 1,591	41.4	14.4	$ 10,058	100,108	$ 8,777	46.5	14.4	$ 7,306

Exhibit E-2
Retired Membership Data

	General Members				Safety Members				Total Members			
Valuation Date (June 30)	Number	Annual Allowance (in millions)	Average Age	Average Monthly Benefit	Number	Annual Allowance (in millions)	Average Age	Average Monthly Benefit	Number	Annual Allowance (in millions)	Average Age	Average Monthly Benefit
1998	35,462	$ 692	71.1	$ 1,626	7,425	$ 267	62.5	$ 3,001	42,887	$ 959	69.6	$ 1,864
1999	35,837	$ 725	71.4	$ 1,686	7,674	$ 291	63.1	$ 3,166	43,511	$ 1,016	70.0	$ 1,947
2000	36,596	$ 780	71.4	$ 1,778	8,032	$ 324	63.1	$ 3,358	44,628	$ 1,104	69.9	$ 2,062
2001	37,077	$ 890	71.6	$ 2,001	8,319	$ 382	63.4	$ 3,828	45,396	$ 1,272	70.1	$ 2,336
2002	37,618	$ 914	71.8	$ 2,025	8,624	$ 403	63.7	$ 3,892	46,242	$ 1,317	70.3	$ 2,374
2003	38,283	$ 984	71.9	$ 2,142	8,949	$ 443	63.9	$ 4,128	47,232	$ 1,427	70.4	$ 2,518
2004	39,097	$ 1,056	72.0	$ 2,250	9,235	$ 478	64.2	$ 4,318	48,332	$ 1,534	70.5	$ 2,645
2005	40,251	$ 1,138	72.1	$ 2,355	9,518	$ 514	64.6	$ 4,504	49,769	$ 1,652	70.7	$ 2,766
2006	41,309	$ 1,224	72.2	$ 2,469	9,683	$ 549	65.0	$ 4,728	50,992	$ 1,773	70.8	$ 2,898
2007	41,584	$ 1,280	72.2	$ 2,565	9,808	$ 578	65.4	$ 4,914	51,392	$ 1,858	70.9	$ 3,013
2008	42,298	$ 1,356	72.4	$ 2,671	10,052	$ 623	65.8	$ 5,167	52,350	$ 1,979	71.1	$ 3,150
2009	42,825	$ 1,423	72.6	$ 2,768	10,244	$ 663	66.3	$ 5,394	53,069	$ 2,086	71.4	$ 3,275
2010	43,752	$ 1,514	72.7	$ 2,883	10,444	$ 706	66.7	$ 5,638	54,196	$ 2,220	71.6	$ 3,414
2011	44,726	$ 1,597	72.9	$ 2,976	10,645	$ 746	67.0	$ 5,836	55,371	$ 2,343	71.7	$ 3,526
2012	45,899	$ 1,686	73.0	$ 3,061	10,871	$ 789	67.3	$ 6,049	56,770	$ 2,475	71.9	$ 3,633
2013	46,939	$ 1,774	73.2	$ 3,149	11,147	$ 837	67.5	$ 6,261	58,086	$ 2,611	72.1	$ 3,746
2014	47,867	$ 1,836	73.4	$ 3,196	11,362	$ 876	67.8	$ 6,427	59,229	$ 2,712	72.3	$ 3,816
2015	48,958	$ 1,898	73.5	$ 3,231	11,648	$ 914	68.0	$ 6,541	60,606	$ 2,813	72.5	$ 3,867
2016	50,034	$ 1,988	73.6	$ 3,311	11,880	$ 965	68.3	$ 6,766	61,914	$ 2,952	72.6	$ 3,974
2017	51,083	$ 2,079	73.8	$ 3,391	12,241	$ 1,030	68.4	$ 7,012	63,324	$ 3,109	72.7	$ 4,091
2018	52,292	$ 2,192	73.9	$ 3,493	12,588	$ 1,104	68.5	$ 7,308	64,880	$ 3,296	72.8	$ 4,233
2019	53,560	$ 2,316	73.9	$ 3,603	12,947	$ 1,184	68.6	$ 7,620	66,507	$ 3,500	72.9	$ 4,385
2020	54,693	$ 2,436	74.0	$ 3,712	13,319	$ 1,270	68.8	$ 7,946	68,012	$ 3,706	73.0	$ 4,541

Exhibit E-3
Contribution Rates

	General Plans					Safety Plans					Total All Plans				
Valuation Date (June 30)	Calculated Normal Cost	Member Contributions	Net Employer Normal Cost	UAAL Rate	Total Employer Contribution	Calculated Normal Cost	Member Contributions	Net Employer Normal Cost	UAAL Rate	Total Employer Contribution	Calculated Normal Cost	Member Contributions	Net Employer Normal Cost	UAAL Rate	Total Employer Contribution
1998	10.27%	3.06%	7.21%	0.00%	7.21%	25.00%	8.70%	16.30%	0.00%	16.30%	13.27%	4.21%	9.06%	0.00%	9.06%
1999	10.98%	3.20%	7.78%	0.00%	7.78%	25.41%	9.12%	16.29%	0.00%	16.29%	13.81%	4.36%	9.45%	0.00%	9.45%
2000	10.91%	3.33%	7.58%	0.00%	7.58%	25.22%	9.44%	15.78%	0.00%	15.78%	13.66%	4.51%	9.15%	0.00%	9.15%
2001	11.27%	3.45%	7.82%	0.00%	7.82%	25.47%	9.27%	16.20%	0.00%	16.20%	14.01%	4.57%	9.44%	0.00%	9.44%
2002	12.04%	3.53%	8.51%	0.21%	8.72%	25.92%	9.37%	16.55%	0.21%	16.76%	14.66%	4.63%	10.03%	0.21%	10.24%
2003	12.25%	3.72%	8.53%	4.66%	13.19%	25.89%	9.55%	16.34%	4.66%	21.00%	14.80%	4.81%	9.99%	4.66%	14.65%
2004	12.20%	3.82%	8.38%	6.41%	14.79%	24.61%	9.61%	15.00%	6.41%	21.41%	14.48%	4.88%	9.60%	6.41%	16.01%
2005	12.22%	3.91%	8.31%	5.33%	13.64%	24.69%	9.68%	15.01%	5.33%	20.34%	14.50%	4.97%	9.53%	5.33%	14.86%
2006	12.22%	4.07%	8.15%	3.49%	11.64%	24.70%	9.70%	15.00%	3.49%	18.49%	14.54%	5.12%	9.42%	3.49%	12.91%
2007	13.15%	4.38%	8.77%	2.24%	11.01%	26.04%	10.18%	15.86%	2.24%	18.10%	15.67%	5.51%	10.16%	2.24%	12.40%
2008	13.18%	4.47%	8.71%	1.99%	10.70%	26.01%	10.22%	15.79%	1.99%	17.78%	15.68%	5.59%	10.09%	1.99%	12.08%
2009	13.29%	4.57%	8.72%	4.12%	12.84%	26.08%	10.21%	15.87%	4.12%	19.99%	15.75%	5.65%	10.10%	4.12%	14.22%
2010	13.32%	4.68%	8.64%	6.47%	15.11%	25.00%	10.19%	14.81%	6.47%	21.28%	15.59%	5.75%	9.84%	6.47%	16.31%
2011	13.36%	4.91%	8.45%	7.89%	16.34%	25.09%	10.50%	14.59%	7.89%	22.48%	15.65%	6.00%	9.65%	7.89%	17.54%
2012	13.50%	5.01%	8.49%	10.09%	18.58%	25.42%	10.52%	14.90%	10.09%	24.99%	15.81%	6.08%	9.73%	10.09%	19.82%
2013	13.25%	5.01%	8.24%	11.90%	20.14%	24.67%	10.26%	14.41%	11.90%	26.31%	15.47%	6.03%	9.44%	11.90%	21.34%
2014	13.14%	5.09%	8.05%	10.04%	18.09%	24.71%	10.23%	14.48%	10.04%	24.52%	15.37%	6.08%	9.29%	10.04%	19.33%
2015	13.28%	5.22%	8.06%	8.49%	16.55%	24.71%	10.26%	14.45%	8.49%	22.94%	15.46%	6.18%	9.28%	8.49%	17.77%
2016	14.51%	5.72%	8.79%	9.73%	18.52%	25.54%	10.57%	14.97%	9.73%	24.70%	16.62%	6.65%	9.97%	9.73%	19.70%
2017	14.62%	5.87%	8.75%	10.10%	18.85%	25.69%	10.56%	15.13%	10.10%	25.23%	16.70%	6.76%	9.94%	10.10%	20.04%
2018	14.77%	6.04%	8.73%	10.99%	19.72%	25.70%	10.59%	15.11%	10.99%	26.10%	16.80%	6.88%	9.92%	10.99%	20.91%
2019	16.24%	6.74%	9.50%	11.73%	21.23%	28.58%	11.78%	16.80%	11.73%	28.53%	18.54%	7.68%	10.86%	11.73%	22.59%
2020	16.31%	6.86%	9.45%	13.75%	23.20%	28.95%	11.88%	17.07%	13.75%	30.82%	18.69%	7.80%	10.89%	13.75%	24.64%

Exhibit E-4
Funded Status History

		Market Value Basis			Actuarial Value Basis						
Valuation Year	Actuarial Accrued Liability (AAL)	Market Value of Assets (MVA)[1]	Unfunded AAL (UAAL)/Surplus MVA Basis	Funded Ratio MVA Basis	Actuarial Value of Assets (AVA)[1]	Unfunded AAL (UAAL)/Surplus AVA Basis	Funded Ratio AVA Basis	Annual Total Payroll	Asset Smoothing Ratio (AVA / MVA)	Asset Volatility Ratio (MVA / Payroll)	Liability Volatility Ratio (AAL / Payroll)
1996 [2]	17,300	18,600	1,300	107.5%	17,700	400	102.3%	3,356	95.2%	5.5	5.2
1997 [2]	19,300	21,100	1,800	109.3%	19,600	300	101.6%	3,373	92.9%	6.3	5.7
1998	20,960	22,332	1,372	106.5%	20,851	(109)	99.5%	3,562	93.4%	6.3	5.9
1999	22,785	24,382	1,597	107.0%	23,536	751	103.3%	3,858	96.5%	6.3	5.9
2000	24,721	27,257	2,536	110.3%	25,427	706	102.9%	4,143	93.3%	6.6	6.0
2001	26,490	23,916	(2,574)	90.3%	26,490	-	100.0%	4,469	110.8%	5.4	5.9
2002	28,437	24,085	(4,352)	84.7%	28,262	(175)	99.4%	4,730	117.3%	5.1	6.0
2003	30,474	24,616	(5,858)	80.8%	26,564	(3,910)	87.2%	4,934	107.9%	5.0	6.2
2004	32,700	28,094	(4,606)	85.9%	27,089	(5,611)	82.8%	4,942	96.4%	5.7	6.6
2005	34,375	30,904	(3,471)	89.9%	29,497	(4,878)	85.8%	5,051	95.4%	6.1	6.8
2006	36,259	34,256	(2,003)	94.5%	32,820	(3,439)	90.5%	5,333	95.8%	6.4	6.8
2007	39,503	40,073	570	101.4%	37,042	(2,461)	93.8%	5,886	92.4%	6.8	6.7
2008	41,975	37,834	(4,141)	90.1%	39,662	(2,313)	94.5%	6,257	104.8%	6.0	6.7
2009	44,469	29,723	(14,746)	66.8%	39,542	(4,927)	88.9%	6,673	133.0%	4.5	6.7
2010	46,646	32,629	(14,017)	69.9%	38,839	(7,807)	83.3%	6,739	119.0%	4.8	6.9
2011	48,599	38,587	(10,012)	79.4%	39,194	(9,405)	80.6%	6,705	101.6%	5.8	7.2
2012	50,809	37,453	(13,356)	73.7%	39,039	(11,770)	76.8%	6,675	104.2%	5.6	7.6
2013	53,247	41,334	(11,913)	77.6%	39,932	(13,315)	75.0%	6,656	96.6%	6.2	8.0
2014	54,942	47,223	(7,719)	86.0%	43,654	(11,288)	79.5%	6,815	92.4%	6.9	8.1
2015	56,819	48,308	(8,511)	85.0%	47,328	(9,491)	83.3%	7,078	98.0%	6.8	8.0
2016	62,199	47,347	(14,852)	76.1%	49,358	(12,841)	79.4%	7,390	104.2%	6.4	8.4
2017	65,311	52,217	(13,094)	80.0%	52,166	(13,145)	79.9%	7,749	99.9%	6.7	8.4
2018	68,527	55,737	(12,790)	81.3%	55,233	(13,294)	80.6%	8,079	99.1%	6.9	8.5
2019	74,635	57,712	(16,923)	77.3%	57,617	(17,018)	77.2%	8,423	99.8%	6.9	8.9
2020	78,275	57,925	(20,350)	74.0%	59,763	(18,512)	76.3%	8,819	103.2%	6.6	8.9

1. *Asset values exclude non-valuation reserves*
2. *Only rounded values are available.*

Exhibit E-5
Reconciliation of Changes in Unfunded Actuarial Accrued Liability or Surplus

Valuation Year	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Prior Year UAAL	7,807	9,405	11,770	13,315	11,288	9,491	12,841	13,145	13,294	17,018
Normal Cost	1,200	1,237	1,430	1,163	1,068	1,118	1,246	1,243	1,352	1,553
Contributions	(1,461)	(1,646)	(1,455)	(1,824)	(1,936)	(1,902)	(1,880)	(2,116)	(2,303)	(2,459)
Interest	605	724	895	999	814	682	954	968	976	1,212
Changes in Assumptions/Methodology	221	457	511	-	-	2,922	-	-	2,528	-
Changes in Benefit Provisions	-	-	-	-	-	-	-	-	-	-
Expected Current Year UAAL	8,372	10,177	13,151	13,653	11,234	12,311	13,161	13,240	15,847	17,324
Actual Current Year UAAL	9,405	11,770	13,315	11,288	9,491	12,841	13,145	13,294	17,018	18,512
Total (Gain)/Loss on UAAL	1,033	1,593	164	(2,365)	(1,743)	530	(16)	54	1,171	1,188
Asset (Gains)/Losses	1,761	2,337	893	(1,664)	(1,263)	496	(421)	(411)	477	701
Salary Increases	(579)	(629)	(563)	(291)	79	162	277	223	486	388
All Other Actuarial (Gains)/Losses	(149)	(115)	(166)	(410)	(559)	(128)	128	242	208	99

Exhibit E-6
Reconciliation of Changes in Calculated Employer Contribution Rate

Valuation Year	Prior Year Contribution Rate	Changes in Existing Amortization Bases	Assumption/ Method Changes	Salary/Payroll Variations	Plan Amendments	Asset (Gains)/Losses	Demographic/Other (Gains)/Losses	Current Year Contribution Rate
2004	14.65%	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	16.01%
2005	16.01%	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	14.86%
2006	14.86%	-0.29%	0.00%	0.02%	0.00%	-1.82%	0.14%	12.91%
2007	12.91%	-0.28%	1.34%	0.61%	0.00%	-2.14%	-0.04%	12.40%
2008	12.40%	-0.17%	0.00%	0.21%	0.00%	-0.24%	-0.12%	12.08%
2009	12.08%	-0.04%	-1.76%	0.21%	0.00%	3.91%	-0.18%	14.22%
2010	14.22%	0.00%	-0.27%	-0.10%	0.00%	2.29%	0.17%	16.31%
2011	16.31%	0.00%	0.25%	-0.14%	0.00%	1.39%	-0.27%	17.54%
2012	17.54%	0.00%	0.54%	-0.11%	0.00%	1.92%	-0.07%	19.82%
2013	19.82%	0.00%	0.82%	-0.01%	0.00%	0.74%	-0.03%	21.34%
2014	21.34%	0.00%	0.00%	-0.15%	0.00%	-1.43%	-0.43%	19.33%
2015	19.33%	0.00%	0.00%	0.04%	0.00%	-1.04%	-0.56%	17.77%
2016	17.77%	0.00%	2.87%	0.20%	0.00%	0.39%	-0.02%	21.21%
2017	21.21%	0.00%	0.00%	0.05%	0.00%	-0.32%	0.06%	21.00%
2018	21.00%	0.00%	0.00%	0.04%	0.00%	-0.30%	0.17%	20.91%
2019	20.91%	0.00%	1.10%	0.20%	0.00%	0.42%	-0.04%	22.59%
2020	22.59%	0.00%	1.09%	0.04%	0.00%	0.58%	0.34%	24.64%

1. Data not available.

Exhibit E-7
Funding Policy History

	Description of changes, if any	Effective Date	Impact on Contribution Rate	Impact on Funded Ratio	Rationale
2009	Changed from 3-year to 5-year asset smoothing. Included STAR reserve as a valuation asset. Adopted 30-year layered amortization period.	June 30, 2009	-1.68% [1]	4.40%	See June 30, 2009 valuation report.
2010	Included STAR reserve as a valuation asset.	June 30, 2010	-0.52% [1]	1.40%	See June 30, 2010 valuation report.
2011	Included STAR reserve as a valuation asset.	June 30, 2011	-0.52% [1]	1.20%	See June 30, 2011 valuation report.
2012	Included STAR reserve as a valuation asset for 2012 and future valuations (adopted February 2013).	June 30, 2012	-0.53% [1]	1.20%	See June 30, 2012 valuation report.
2019	Adopted 20-year layered amortization period for new layers. Existing layers are set to be no greater than 22 years, so they are fully amortized no later than 2042.	June 30, 2019	0.30%	0.00%	See June 30, 2019 valuation report.

1. Note that savings due to inclusion of STAR reserve as valuation asset are not cumulative from year to year.

Exhibit E-8
History of Changes in Economic Assumptions

Valuation Year	Price Inflation	Wage Inflation	Real Wage Inflation[1]	Investment Return Assumption	Real Investment Return[2]	Effective Date	Change in Contribution Rate	Change in Funded Ratio
2004	3.50%	3.75%	0.25%	7.75%	4.25%	July 1, 2004	1.65%	N/A[3]
2007	3.50%	4.00%	0.50%	7.75%	4.25%	July 1, 2007	0.66%	-1.3%
2011	3.45%	3.95%	0.50%	7.70%	4.25%	July 1, 2011	0.25%	-0.3%
2012	3.35%	3.85%	0.50%	7.60%	4.25%	July 1, 2012	0.54%	-0.7%
2013	3.00%	3.50%	0.50%	7.50%	4.50%	July 1, 2013	0.37%	-0.1%
2016	2.75%	3.25%	0.50%	7.25%	4.50%	July 1, 2016	1.14%	-1.4%
2019	2.75%	3.25%	0.50%	7.00%	4.25%	July 1, 2019	2.20%	-2.3%

1. *Excess of assumed wage inflation over price inflation.*
2. *Excess of assumed investment return over price inflation.*
3. *Information not available.*

Exhibit E-9
History of Changes in Demographic and Other Non-Economic Assumptions

	Demographic Assumption Revisions	Effective Date	Change in Contribution Rate	Change in Funded Ratio	Rationale
2004	Mortality, merit salary scale, retirement, termination, probability of refund, probability of eligible survivor revised.	July 1, 2004	-0.63%	N/A[1]	Refer to the 2004 Investigation of Experience Report.
2007	Mortality, retirement, termination, probability of refund, merit salary scale for Safety members revised.	July 1, 2007	0.68%	N/A[1]	Refer to the 2007 Investigation of Experience Report.
2010	Mortality, retirement, termination, probability of refund, assumed benefit commencement age revised.	July 1, 2010	-0.27%	-0.1%	Refer to the 2010 Investigation of Experience Report.
2013	Mortality, retirement, termination, probability of refund, merit salary scale for Safety members, probability of eligible survivor, assumption for beneficiary age, reciprocity assumption revised.	July 1, 2013	0.45%	-0.6%	Refer to the 2013 Investigation of Experience Report.
2016	Mortality, retirement, termination, probability of eligible survivor, assumed benefit commencement age, reciprocity assumption revised.	July 1, 2016	1.73%	-2.5%	Refer to the 2016 Investigation of Experience Report.
2019	Mortality, retirement, termination, probability of refund, merit salary scale, assumed benefit commencement age.	July 1, 2019	0.80%	-0.4%	2019 Investigation of Experience.

1. Information not available.

Appendix F Glossary

The following definitions include excerpts from a list adopted by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to LACERA and include terms used exclusively by LACERA. Defined terms are capitalized throughout this Appendix.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based on a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Contingency Reserve

Reserves accumulated for future earning deficiencies, investment losses, and other contingencies. Additions include investment income and other revenues; deductions include investment expense, administrative expense, interest allocated to other reserves, funding the STAR Reserve, and distributions to the Contribution Credit Reserve. Amounts are allocated to the Contingency Reserve to the extent there are positive recognized earnings to allocate. The California Government Code (Sections 31592 and 31592.2) requires the Contingency Reserve to be set at a minimum of 1.0% of the market value of total assets.

County Contribution Credit Reserve

The accumulated balance of the County's proportionate share of excess earnings as stipulated in the Retirement System Funding Agreement between LACERA and the County. Additions include distributions from excess earning during the fiscal years ending 1994 through 1998 and related earnings. Deductions include payments, as the County authorizes, for future employer contributions due LACERA and for funding a portion of the Retiree Healthcare Program under the provisions of Internal Revenue Code 401(h).

Employer Reserve

The accumulation of employer contributions for future retirement benefit payments. Additions include contributions from employers and related earnings. Deductions include annuity payments to retired members and survivors, lump sum death benefit payments to member survivors, and supplemental disability payments.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit ages. 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 Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

Funded Ratio

A measurement of the funded status of the Plan. The Funded Ratio is calculated by dividing the Valuation Assets by the Actuarial Accrued Liability. For example, a Funded Ratio of 90% indicates assets are 10% less than liabilities.

Funding Goal

The Funding Goal is the funded status the Board of Investments would like LACERA to achieve. The main goal is to provide benefit security for its members as well as to achieve and maintain stable employer contributions that are as low as possible. A Funded Ratio equal to 100% is the Funding Goal.

Layered Amortization Period

Payment of each year's change in the Unfunded Actuarial Accrued Liability (UAAL) is amortized over separate closed periods. For LACERA, the original UAAL as of June 30, 2009 is being amortized over a closed 30-year period. Subsequent changes in the UAAL were amortized over new closed 30-year periods. Effective with the June 30, 2019 valuation all existing layers with more than 22 years remaining as of June 30, 2020 were re-amortized over closed 22-year periods. All new UAAL layers thereafter are amortized over closed 20-year periods beginning with the date the contribution is first expected to be made. All amortization payments are based on a level percent of pay.

Member Reserve

The accumulation of member contributions. Additions include member contributions and related earnings. Deductions include annuity payments to retirees and refunds to members.

Non-Valuation Reserves

Reserves excluded from the calculation of contribution rates, including the Contingency Reserve, the County Contribution Credit Reserve, and any other reserves specifically excluded by the Board of Investments.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Plan Year

A 12-month period beginning July 1 and ending June 30.

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

STAR Reserve

Reserves accumulated for the payment of cost-of-living benefits as defined in California Government Code Section 31874.3.

Supplemental Targeted Adjustment for Retirees (STAR) Benefits Supplemental cost-of-living payments to retired members to restore purchasing power at a specified percentage level, as described in California Government Code Section 31874.3.

Surplus Funding

The excess, if any, of the Actuarial Value of Assets over the Actuarial Accrued Liability. Standard actuarial terminology defines this as the “Funding Excess.” LACERA uses the term “Surplus Funding.”

Unfunded Actuarial Accrued Liability

The excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Valuation Date

The date upon which the Normal Cost, Actuarial Accrued Liability, and Actuarial Value of Assets are determined. Generally, the Valuation Date will coincide with the ending of a Plan Year.

Valuation Reserves

All reserves excluding the Non-Valuation Reserves.

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FOR INFORMATION ONLY

June 25, 2021

TO: Trustees – Board of Investments

FROM: Esmeralda del Bosque, Senior Investment Officer
Cindy Rivera, Senior Investment Analyst

FOR: July 14, 2021 Board of Investments

SUBJECT: **REAL ESTATE PROCESS WORKFLOW FINDINGS – UPDATE III**

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 Investment Division's real estate operations and incorporated responsibilities from LACERA's real estate, legal, accounting, internal audit, and investment departments. To facilitate enhanced investment operations for the 22 commingled funds and 98 Title Holding Companies ("THCs") that hold title to LACERA's separate account properties, the Team identified four categories of potential operational improvements: (i) the need for an independent book of record; (ii) enhancing safeguards with the real estate separate account bank; (iii) investment manager contract revisions; and (iv) internal process enhancements.

Updates to the July 2019 memo were provided at the January 2020 and November 2020 BOI meetings. This report is the third to include progress reviews for each of the four categories with expanded projects where applicable. Notably, many of the identified tasks that posed the most significant operational risk to LACERA's real estate program, namely independent accounting, wire management, asset valuation, and performance calculation, have been completed. The tasks that remain, fall under staff's broader review of THC operations and are addressed in this memo. These include evaluating the optimal provider of commercial banking services, improvement of reconciliation practices and cash management and other banking-related operational processes, and a review of the best practices for structuring the real estate separate account program.

REAL ESTATE PROCESS IMPROVEMENTS UPDATE

1. Independent Book of Record

The first category of improvements, which had initially identified the need to have an independent book of record and a refined reconciliation process for real estate, has been completed. LACERA's former real estate consultant, the Townsend Group, served the dual role of investment consultant and book of record for real estate asset values and performance. At the September 2020 BOI meeting, the Board approved hiring State Street Bank and Trust as the book of record, fulfilling two searches: Real Estate Administrator and total Fund Performance. LACERA investments and accounting staff have completed the onboarding of current real estate assets onto both platforms so that now, State Street provides accounting, administration, wire management, and performance services for every investment asset class at LACERA. Staff anticipates including the independently calculated real estate data as well as an enhanced reporting package into LACERA's fiscal year-end total fund performance Board report.

In the second update to the Board on real estate process workflow findings, staff noted that Meketa ("Meketa"), LACERA's general consultant, conducted a review of a new real estate procedure for reconciling valuation and returns between Townsend, the separate account managers, and audited financials. That reconciliation was conducted by real estate investment staff, adopted initially on a trailing-five-year-period ending June 30, 2019, and has been completed quarterly thereafter.

As a reminder, the Board of Investments approved the Stepstone Group to replace Townsend as LACERA's real estate consultant at its January 2021 meeting.

1 Independent Book of Record

Original Memo	Prior Updates	Current Update
▪ Identify Independent Book of Record for real estate accounting and performance	▪ Through the Administrative Services RFP, pursue an independent book of record	☑ Complete
	▪ Meketa conducts review of real estate performance measurement	☑ Complete
	▪ Staff to develop quarterly performance reconciliation process	☑ Complete
RFP Completion: 100%		
Onboarding Completion: 100%		

2. Enhance Fiduciary Safeguards with Banking Partner

Most items in the second category of improvements, which cover enhanced safeguards for THC banking through Bank of America, are complete. However, the balance of tasks will be addressed with a broader examination of the THC structure. As noted in previous memos, staff recognizes the outsized operational risks that the THC structure introduces to LACERA, many of which touch the THC banking model. THCs require a multi-department coordination and effort. As such, staff is reviewing best practices, taking recommendations from Meketa, asset managers, internal staff, and Stepstone to review banking, payment processing, reconciliation standards, and other operational duties that are currently led by LACERA staff.

Through this effort, there may be services that LACERA can move to its separate account real estate asset managers who already engage in these services for other clients. We may also identify the need to continue utilizing commercial banking services, and if so, we would seek to issue an RFP or include the service as part of the statement of work for LACERA's upcoming custody search. It should be noted that physical check processing was identified as a weakness in a recent audit finding relating to activity prior to 2019 and the improvements cited above should reduce our operational risk in this area.

Staff, with the input of Stepstone, anticipates addressing the findings of the best practices assessment, including an analysis of the overall role of THCs in the structure of real estate in an upcoming structure review.

2 Enhance Fiduciary Safeguards with Banking Partner

Original memo	Prior Updates	Current Update
▪ Evaluate the feasibility of moving the separate account investment manager accounts to LACERA's custodian, State Street Bank	▪ Added to Administrator RFP evaluation	**Complete;** Custodian does not provide commercial banking **In Progress** ▪ In collaboration with StepStone, reach conclusion on best practices review, considering manager takeover of commercial bank deposit accounts and/or RFP for commercial bank.
▪ Review authority levels of account access & fraud protections		
▪ Meet with the bank to refine several day-to-day tasks	▪ Authority levels of account access	**Complete**
	▪ Enhance fraud protections	**Complete**
	▪ Set-up a system to reconcile activity and balances for each investment manager account	**In Progress**
	▪ Improve cash management process: More wires, less physical checks	**In Progress** ▪ Internal audit and LACERA stakeholders recently reviewed physical check processing. Staff continues to refine applicable procedures.
	▪ Review account opening/closing procedures	**Complete**
	▪ Assess record keeping practices	**Complete**
	▪ Review and update operational procedures for banking relationship	**In Progress** ▪ RE Team continues to refine procedures as part of Investment Procedural Manual
Status of Completion: 70%		

3. Separate Account Investment Manager Contract Revisions

Previous memos also discussed the role that LACERA's Legal Division plays in the ongoing administration of LACERA's separate account assets and described ways to modify legal documentation to reflect changes in real estate operations. Insofar as the review of THC best practices identifies opportunities to transfer some operational functions from staff to asset managers, contracts will be updated.

3	Separate Account Investment Manager Contract Revisions	
Original Memo	**Prior Updates**	**Current Update**
▪ Amend agreements to expand responsibilities as part of investment manager's scope of work – Monitor and pay invoices and state registration fees – Engage financial auditors and tax preparers – Submit tax filings; monitor unclaimed property	▪ Staff is reviewing contract terms as a first step in identifying tasks that could potentially be transferred to the separate account investment managers ▪ Scope to include operations, alignment of interests, and capital commitment limits	**In Progress** ▪ Review of best practices is underway, followed by a legal review to identify which sections of manager contracts should be updated
Status of Completion: 25%		

4. Internal Process Enhancements

The fourth set of enhancements focused on internal processes. All internal process enhancement efforts originally identified have been completed. The Board retained Altus in October 2019 to serve as an independent appraisal advisory service provider. Staff has updated wire authorization levels and has enhanced contract compliance procedures. Since audits are conducted regularly, findings will be addressed as they occur. Additionally, process enhancements may be identified as a result of the THC structure and best practices review.

4	Internal Process Enhancements	
Original Memo	**Prior Updates**	**Current Update**
▪ Consider hiring an appraisal investment advisory service provider	▪ Appraisal Management RFP was issued	**Complete**
▪ Review internal wire authorization hierarchy	▪ In progress	**Complete**
▪ Update wire process to mimic other LACERA asset classes	▪ In progress	**Complete** ▪ Outside of wire activity from the commercial bank deposit accounts, with State Street as administrator, there is near complete uniformity across asset classes.
▪ LACERA's Internal Audit oversees real estate separate account asset manager contract compliance and THC financial audits – Findings forwarded to portfolio analytics team	▪ Next round of real estate audits slated for 1Q2020 – Findings forwarded to portfolio analytics team	**Current Audit Cycle Complete (future audits are ongoing)** ▪ Findings reviewed and addressed; next cycle of financial audits is underway; future audit findings will be addressed as necessary
Status of Completion: 100%		
Forthcoming Audits	Status bar will be updated per next audit cycle	

CONCLUSION

In July 2019, 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 Board. Four sub-categories of findings were identified, and since that time, staff has been working on the operational improvements. Today's memo represented the third update to Trustees on the progress of enhancements. Staff notes that two of the sub-categories initially identified are complete: (i) creating independent accounting, valuation, and performance book of records, (ii) enhancing other internal processes, leading to improved transparency, and strengthened controls. Both have reduced the operational risks of LACERA's real estate program. Although many accomplishments have been made, additional enhancements may be identified because of the THC best practices review. Findings from that exercise will be provided to the Board in the coming months.

Noted and Reviewed:

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Jonathan Grabel
Chief Investment Officer

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FOR INFORMATION ONLY

June 23, 2021

TO: Each Trustee
Board of Retirement
Board of Investments

FROM: Jonathan Grabel
Chief Investment Officer

Jude Pérez
Principal Investment Officer

Esmeralda del Bosque
Senior Investment Officer

FOR: July 7, 2021 Board of Retirement Meeting
July 14, 2021 Board of Investments Meeting

SUBJECT: **OPEB MASTER TRUST – STRATEGIC ASSET ALLOCATION UPDATE**

At the June 2021 Board of Investments ("BOI") meeting, the Board adopted a new Strategic Asset Allocation ("SAA") for the OPEB Master Trust ("OPEB Trust" or "Trust"). The last OPEB Trust SAA was approved in December 2017.

One of the BOI's core responsibilities is setting the OPEB Trust SAA as part of a regular, periodic review and consistent with LACERA policies. The SAA is the key driver of long-term risk and returns and, therefore, a vital component to establishing the SAA. Per the OPEB Trust Investment Policy Statement ("IPS"), the BOI reviews the Trust's asset allocation triennially or more frequently as the need arises. The objective of the SAA is to evaluate the structure of the OPEB Trust and select an asset allocation that optimizes the risk and return quotients consistent with the Trust's actuarial return, incorporating a long-term perspective of capital markets. SAA studies enable the BOI to evaluate alternatives to the current policy allocation while considering the Trust's investment goals and prevailing market conditions.

The SAA study was conducted over eleven months with input from LACERA's general consultant, the Meketa Investment Group, and staff. The Board approved an allocation for the OPEB Trust that further diversifies the Trust by expanding the set of asset classes for inclusion. The additional asset classes include Private Equity, Illiquid Credit, Natural Resources, Infrastructure, and Long-Term Government Bonds. Furthermore, the SAA will be implemented using private market investment structures for Private Equity, Illiquid Credit, Real Estate, and Infrastructure. Worth noting is that the addition of approximately 18% of private market assets reduces the liquidity profile of the Trust by a commensurate amount. However, the allocation ensures appropriate levels of portfolio liquidity, if needed. Additionally, LACERA reached out to the Los Angeles County and Superior Court regarding the adoption of private assets and addressed liquidity and cash flow needs. Both state that they were comfortable with the addition of illiquid assets and affirmed that they do not anticipate using the Trust as a source of benefit payments for the foreseeable future.

The expected time to implement the new SAA is 12 to 36 months as the OPEB Trust will migrate from a purely passive implementation to a hybrid passive/active blend, including private asset commitments that may be drawn over time.

Attachment 1 includes Staff's recommendation memo along with Meketa's presentation on the OPEB Trust SAA.

Attachment

JP:EDB

LACERA

ATTACHMENT 1

June 1, 2021

TO: Trustees – Board of Investments

FROM: Jonathan Grabel
Chief Investment Officer

Jude Pérez
Principal Investment Officer

Esmeralda del Bosque
Senior Investment Officer

FOR: June 9, 2021 Board of Investments Meeting

SUBJECT: **OPEB MASTER TRUST ASSET ALLOCATION RECOMMENDATION**

RECOMMENDATION

Staff recommends the Board of Investments ("Board" or "BOI") approve the Strategic Asset Allocation ("SAA") option B, on page 8 of Meketa Investment Group's presentation and within **Chart 1** of this memorandum, for the OPEB Master Trust ("OPEB Trust" or "Trust").

SUMMARY

The balance of this memorandum discusses how the recommended option B may improve upon the current BOI - approved strategic asset allocation ("Policy Allocation") while considering allocation options, portfolio analytics, and implementation considerations. The recommendation results from an 11-month effort to discuss multiple SAA subjects for both the Pension and OPEB Trust and reflect Board feedback provided through those discussions.

Below are series of observations related to Allocation B:

- Allocation B is a diversified portfolio consistent with LACERA's Investment Beliefs;
- Provides the same probability of achieving the OPEB Trust's 6.00% target return compared to the Trust's current allocation, with significantly lower volatility modeled using the current Policy Allocation, and certain model constraints;
- Delivers the highest expected Sharpe ratio[1] and amongst all policy options net of fees;
- Maintains a sufficient degree of liquidity to accommodate requests for Los Angeles County and Court withdrawals, for healthcare related expenses; and
- It is a mix of assets that the LACERA team could implement in the coming 36 months.

[1] Sharpe ratio measures excess return per unit of volatility or risk compared to the risk-free rate.

BACKGROUND

One of the BOI's core responsibilities is setting the OPEB Trust SAA as part of a regular, periodic review and consistent with LACERA policies. The SAA is the key driver of long-term risk and returns and is, therefore, a vital component to establishing the SAA. Furthermore, LACERA's Investment Beliefs express two key tenants on SAA:

1. **Long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes; and**

2. **Asset allocation has a greater effect on return variability than asset class investment structure or manager selection**

Per the OPEB Trust Investment Policy Statement ("IPS"), the Board reviews the Trust's asset allocation triennially or more frequently as the need arises. The objective of the SAA is to evaluate the structure of the OPEB Trust and select an asset allocation that optimizes the risk and return quotients consistent with the Trust's actuarial return, incorporating a long-term perspective of capital markets. With input from staff and the Meketa Investment Group ("Meketa"), the SAA study enables the BOI to evaluate alternatives to the current Policy Allocation while considering the OPEB Trust's investment goals and the prevailing market conditions.

COMMENTS

Alongside efforts on the Pension SAA review over the last eleven months, the Board has reviewed and discussed several topics that are relevant to the OPEB Trust SAA exercise. A sub-set of those subjects includes the effects of the coronavirus pandemic on the economy and capital markets, the implications of investing in a low global interest rate environment, and potential ways to refine the OPEB Trust by adding in private asset strategies such as direct Real Estate investments and Private Equity. In addition, the BOI participated in a survey to help design the objectives and framework for both the Pension and Trust SAA studies.

At the February 2021 BOI meeting, the main discussion points were to review the differences in asset allocation structures between the Pension and OPEB Trusts and introduce the potential addition of illiquid and alternative asset classes into the OPEB's SAA. Contemplating the addition of private market investments to the OPEB Trust is increasingly relevant given that the OPEB has grown to more than $2-billion-dollars in assets. The session highlighted that adding private market assets, which are less correlated to public market assets, could lead to a higher risk-adjusted profile for the Trust. As a reminder, the OPEB Trust allocation is primarily comprised of index funds.

At the March 2021 BOI meeting, the Board approved Meketa's capital market assumptions to be used in the asset allocation models for LACERA's Pension and OPEB Trusts. Following that approval, Meketa worked with staff and presented a review of the asset allocation process and potential asset allocation options to the BOI. In April, Meketa presented Policy Allocation options for the OPEB Trust that included private market asset classes.

Attached is Meketa's presentation on the OPEB Trust Asset Allocation Study. The six proposed asset allocation options are outlined on page 8 of Meketa's presentation.

The primary difference between the current OPEB Trust allocation and the proposed new options is the adoption of new asset classes into the policy mix. Of the six proposed options, three also introduce private market assets into the portfolio structure. Staff considers Option B, which includes the new asset classes plus private markets, as the most optimal portfolio. LACERA's Investment Beliefs, as mentioned above, expresses the core principles that can guide SAA decisions. These include "long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes" and "diversification across different risk factors is necessary for risk reduction."

Consistent with these beliefs, allocation B, as modeled, provides the benefit of diversification by expanding the set of asset classes and, at the same time, lowers the volatility of the portfolio over the current Policy Allocation. This is evidenced by allocation B's higher Sharpe ratio expectation (0.43) versus the current OPEB policy allocation (0.38), representing improved risk-adjusted return expectations.

To the point of diversification, the proposed allocation expands the set of asset classes for the OPEB Trust to include Private Equity, Illiquid Credit, Natural Resources, Infrastructure, and Long-term Government bonds. Furthermore, option B would be implemented using private market investment structures for Private Equity, Illiquid Credit, Real Estate, and Infrastructure. It is worth noting that exposure to private market assets would be capped at 18% within the proposed allocation models to ensure appropriate levels of portfolio liquidity as well as implementation considerations. Lastly, the Credit functional group will consist of liquid and illiquid sleeves; consolidating the liquid portions of Credit reduces granularity and provides greater implementation flexibility. The weightings of each asset category for the current and proposed allocation options are detailed below within **Chart 1** and on page 8 of Meketa's presentation.

Chart 1
Asset Allocation Policy Options

Asset Allocation Policy Options[1]

	CP Current Policy (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
Growth Assets	50	48	45	55	51	59	55
Global Equity	50	48	40	55	46	59	50
Private Equity	0	0	5	0	5	0	5
Credit	20	18	18	11	14	10	13
Liquid Credit	20	18	13	11	9	10	8
Illiquid Credit	0	0	5	0	5	0	5
Real Assets and Inlation Hedges	20	20	20	20	20	19	19
Real Estate	10	8	8	8	8	8	8
TIPS	6	6	6	6	6	5	5
Natural Resources	0	2	2	2	2	2	2
Commodities	4	2	2	2	2	2	2
Infrastructure	0	2	2	2	2	2	2
Risk Reducing and Mitigating	10	14	17	14	15	12	13
Cash Equivalents	2	2	2	2	2	2	2
Investment Grade Bonds	8	7	10	7	8	5	6
Long-term Government Bonds	0	5	5	5	5	5	5
Expected Return	*6.1*	*6.1*	*6.1*	*6.3*	*6.3*	*6.5*	*6.5*
Standard Deviation	*13.2*	*12.6*	*11.5*	*13.3*	*12.2*	*13.9*	*12.8*
Sharpe Ratio	*0.38*	*0.39*	*0.43*	*0.39*	*0.42*	*0.38*	*0.42*
% Illiquid	*0.0*	*0.0*	*18.0*	*0.0*	*18.0*	*0.0*	*18.0*

[1] Expected return and standard deviation are based upon Meketa Investment Group's 2021 Annual Asset Study. Throughout this document, returns for periods longer than one year are annualized.

Growth

The OPEB Trust's IPS, on the role of Growth, cites that the "primary role of assets in this category is to produce a sufficiently high level of long-term growth to provide the promised benefits." The proposed target policy weights for Growth range from 45-59%. Staff observes that for those proposed allocation options with a higher return expectation than the current policy, there is an increase to the Growth policy weight. Two Policy Allocation approaches are presented for the Growth category: one continues to express Growth using Global Equity only (scenarios A, C, and E), and the other introduces a discrete 5% Private Equity allocation into the policy mix (scenarios B, D, and F). The introduction of Private Equity can mostly be attributed to expectations of attractive relative returns from the asset class. Notably, for those Policy Allocations that introduce Private Equity into the Growth allocation mix, the weight to Global Equity matches or declines relative to the current Policy Allocation.

Credit

Compared to the current Policy Allocation, the proposed allocations reduce the weight to Credit across all scenarios. The range of reduction from the current 20% weight depends on the scenario and ranges from 2% to 10%. Notably, a 5% allocation to Illiquid Credit is introduced for the proposed options that include private assets. In those scenarios (B, D, and F), there is a reduction to Liquid Credit assets to make room for the Illiquid Credit allocation. Within the Credit space, Illiquid Credit assets are relatively higher returning when compared to Liquid Credit, as Illiquid Credit is modeled to have roughly a 3-4% expected return advantage over 20-years, therefore the allocation to Illiquid Credit increases. Also, as modeled for the Pension Trust, there is a proposed change to Credit dividing the allocation between Liquid and Illiquid Credit. Liquid credit is made up of the current strategies within Credit, including High Yield, Emerging Market Debt, and Bank Loans, while the proposed Illiquid Credit allocation may include assets like private debt. By consolidating Liquid Credit and adding a distinct Illiquid Credit sleeve, Credit's framework will be consistent with other functional asset categories, reduce granularity, and provide increased implementation flexibility. The proposed changes should increase the Credit portfolio's ability to achieve its IPS stated goal "to produce moderate long-term total returns that provide diversification from public equities."

Real Assets

The current 20% Policy Allocation weight for the Real Assets category stays the same for all but two portfolio options, which reduces Real Assets by 1%. However, at the sub-asset class level, there are notable changes: The allocation to Real Estate falls from 10% to 8% across all scenarios; the allocation to TIPS stays at 6% for all scenarios except E and F, where it drops to 5%; the 2% allocation to Commodities remains the same across scenarios; and for all portfolios, Natural Resources and Infrastructure are introduced to the portfolio at a 2% weight. In addition, for scenarios B, D, and F, the Real Estate and Infrastructure allocations are modeled to be implemented via private funds. The OPEB Trust's allocation to Real Estate is currently satisfied via a public market Real Estate Investment Trust ("REIT") index fund. REITs traditionally have a higher correlation to equities than traditional real estate investments, so pursuing a private market allocation to Real Estate should improve diversification for Real Assets as well as the OPEB Trust. The addition of inflation-hedging assets such as Natural Resources and Infrastructure as well as a private market implementation approach for Real Estate and Infrastructure should better position Real Assets to fulfill its stated role within the OPEB Trust IPS to "provide a hedge against unanticipated inflation and improve total fund diversification due to anticipated low correlation of returns with other asset classes."

Risk Mitigation

Compared to the current Policy Allocation, all scenarios show an increased allocation weight to Risk Mitigation. The current weight to Risk Mitigation is 10%, and the proposed scenarios increase that weight from 12% to 17%. Cash continues to be held at a 2% weight for all portfolios, and Investment Grade Bonds reduces from its 8% weight for all scenarios except Option B, which increases the weight to 10%. As with the pension, Long-term Government Bonds have been added as a discrete 5% allocation across all policy options. Long-term Government Bonds provide a higher degree of balance and downside protection to growth-like assets compared to Investment Grade Bonds. As such, introducing Long-term Government Bonds to the policy mix should help provide greater risk and return diversification benefits to the Risk Mitigation category and to the overall OPEB Trust. The proposed changes within Risk Mitigation may help satisfy the OPEB IPS objectives for this category, which is "to provide diversification and risk reduction."

Individual Allocation Option Characteristics

The points that follow highlight differences in asset classes, exposures, return expectations, and volatility (as measured by standard deviation) for scenarios A, C, D, E, and F versus the current Policy Allocation. A discussion on the recommended Option B follows.

- Option A decreases both Growth and Credit by 2%, holds Real Assets at its current Policy Allocation, and increases Risk Mitigation by 4%. No private market assets are introduced, so there is a 0% allocation to illiquid investments; however, the portfolio does add allocations to Natural Resources, Infrastructure, and Long-term Government Bonds. The expected return for the portfolio is in line with the current policy mix, but the volatility is lower, leading to a Sharpe ratio (0.39) that is slightly better than the current Policy Allocation (0.38).

- Option C increases both Growth and Risk Mitigation, by 5% and 4%, respectively, with a commensurate 9% decrease to Credit. Real Assets remains at the current Policy Allocation of 20%. The Growth component is increased through the additional allocation to Global Equity, and Liquid Credit is reduced. Similar to Option A, the sub-allocations to Real Assets and Risk Mitigation are the same, and there is no inclusion of private assets. This scenario generates a (0.39) Sharpe ratio due to its higher expected return of 6.3% versus the 6.1% return for the current policy. Still, it registers a higher standard deviation due to the meaningful increase in Global Equity.

- Option D has an expected return of 6.3% yet has a lower standard deviation (12.2%) than the current policy (13.2%) due to the introduction of sub-asset classes and private market investments. Scenario D introduces Long-term Government Bonds, Natural Resources, Private Infrastructure, Illiquid Credit, and Private Equity. Growth increases by 1% versus the current Policy Allocation with a decrease to Global Equity (4%) to make room for a 5% allocation to Private Equity. As with Options A and C, the weight to Real Assets remains 20%, and their sub-asset class weights align. The largest changes are to Credit, which reduces by 6%, and to Risk Mitigation, which steps up by 5%. For Credit, the most liquid assets within the group are reduced to include a 5% Illiquid Credit allocation. And for Risk Mitigation, the weight to Cash and Investment Grade Bonds matches the current policy, but the overall allocation increases by 5% through the addition of Long-Term Government Bonds. Overall, these changes lead to a Sharpe ratio of 0.42, which is an improvement over the current policy.

- Option E is modeled to have an expected return of 6.5% and has the highest volatility (13.9% standard deviation) of all scenarios. This portfolio has no exposure to private market assets and includes new allocations to Natural Resources, Infrastructure, and Long-term Government Bonds. Reflective of its higher volatility, the portfolio increases Growth through a 9% addition to Global Equities versus the current portfolio. The other substantive change is to Credit, whose weight is cut in half by reducing 10% of its Liquid Credit allocation. Real Assets drop by 1%, and Risk Mitigation grows by 2%. The Sharpe ratio for this scenario matches that of the current Policy Allocation.

- Option F is similar to option E, as its expected return is 6.5%, but with less volatility (12.8% standard deviation). Like portfolio D, this scenario includes Long-term Government Bonds, Natural Resources, Private Infrastructure, Illiquid Credit, and Private Equity. However, the weighting schema differs: Growth increases 5% with the introduction of Private Equity; Credit decreases by 7% by a reduction to Liquid Credit; Real Assets falls by 1% by trimming TIPS, and despite a decrease in Investment Grade Bonds, Risk Mitigation increases 3% through the 5% allocation to Long-term Government Bonds. The resulting portfolio registers a 0.42 Sharpe ratio, which is higher than the current portfolio.

Given the OPEB Trust's actuarial return target of 6%, Options E & F, with a 6.5% target return, may add more risk than necessary to achieve the Trust's actuarial return objective. These portfolios include the highest allocations to Growth assets (55 and 59%, respectively) while reducing Credit substantially. They also register the highest standard deviation and are more likely, among new policy options, of experiencing negative returns across time periods measured.

<u>Commentary on Risk-Adjusted Returns for Option B</u>

While each allocation option has elements to potentially enhance the portfolio beyond the current policy, Option B, as modeled, represents the Policy Allocation with the most consistent characteristics to benefit the Trust. Option B matches the current Policy Allocation return of 6.1%, but with a significant decrease in volatility: Option B's volatility is modeled at 11.5% while the current portfolio is 13.2%. Importantly, Option B has the distinction of having the best Sharpe Ratio amongst all portfolios. In addition, compared to the other options across various metrics, including stress tests, degree of change, probability analyses, and liquidity, Option B is comparable and, by some measurements, is expected to fare better. These will be discussed in further detail below.

Option B does have a one potential downside. As noted previously, the expected return for Option B does not improve upon the current Policy Allocation. However, this policy mix allows the Trust to meet its actuarial return, with meaningfully less risk, as modeled. Option B includes the addition of Long-term Government Bonds, Natural Resources, Private Infrastructure, Illiquid Credit, and Private Equity to the policy mix. Yet the weight to the potentially highest returning asset category – Growth is reduced by 5%. The addition of 7% to Risk Mitigation assets also neutralizes return enhancement. It must be noted that the SAA is modeled without potential alpha that the investment manager can garner, so there is the potential for additional return over time through implementation. Despite that, the additional asset classes increase portfolio diversification significantly, leading to the lowest expected standard deviation and, therefore, the highest Sharpe Ratio for Portfolio B, as modeled.

<u>Mean-Variance Optimization, Probability Analysis, and Stress-Testing</u>

The Mean Variance Optimization ("MVO")-Based Risk Analysis in **Chart 2** covers three distinct points of analysis. The top third of the page includes model outputs for each portfolio, demonstrating the worst return for one, five, ten, and twenty years. For those same periods, the middle of the page estimates the probability of experiencing negative returns, while the bottom third of the page provides the probability of achieving the OPEB Trust's 6.0% target return. Option B potentially provides the best downside protection for the worst-case scenario returns across all time periods shown. Consistent with that, portfolio B also has the lowest probability of experiencing negative returns. In terms of the likelihood of achieving at least a 6%

return, Option B also shows well - matching the current Policy portfolio as well as Option A. While the rest of the portfolios have a very slight advantage in meeting the target return, they do so with more significant downside risk.

In addition to the MVO and probability analysis, there are a series of stress tests that shock each portfolio option on various economic and market scenarios. As exhibited on the results from the stress tests found on pages 17 to 20 of Meketa's presentation, out of all scenarios, Option B performs the best in stressed economic regimes or negative market events. This agrees with the findings above that point to Option B as a portfolio built for resilience and downside protection. The opposite may also be true of Option B. For example, if US Equities rise 10-30%, Option B's return may not be as strong as other portfolios.

Chart 2
MVO-Based Risk Analysis: Worst Case Returns, Probability Negative Returns and Achieving OPEB Trust's Target Return of 6%

MVO-Based Risk Analysis

Scenario	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
Worst Case Returns[1]							
One Year	-20.4	-19.4	-17.4	-20.3	-18.4	-21.2	-19.3
Five Years (annualized)	-6.7	-6.2	-5.2	-6.6	-5.6	-7.0	-6.0
Ten Years (annualized)	-3.1	-2.8	-2.0	-3.0	-2.3	-3.2	-2.5
Twenty Years (annualized)	-0.5	-0.3	0.3	-0.4	0.2	-0.5	0.0
Probability of Experiencing Negative Returns							
One Year	31.7	31.0	29.3	31.2	29.7	31.5	30.0
Five Years	14.4	13.3	11.1	13.6	11.6	14.1	12.1
Ten Years	6.6	5.8	4.2	6.0	4.6	6.4	4.9
Twenty Years	1.7	1.3	0.7	1.4	0.9	1.6	1.0
Probability of Achieving at least a 6% Return							
One Year	50.1	50.1	50.1	50.8	50.8	51.2	51.4
Five Years	50.2	50.3	50.2	51.7	51.9	52.7	53.0
Ten Years	50.3	50.4	50.3	52.4	52.6	53.8	54.3
Twenty Years	50.4	50.5	50.4	53.4	53.7	55.4	56.1

Increased Risks

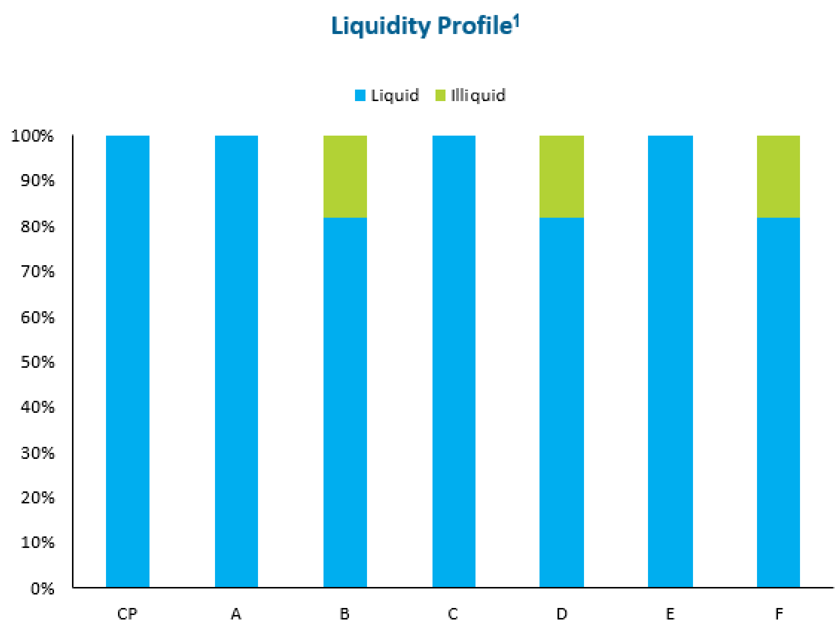
The proposed allocation options introduce new asset types across all portfolios, and for Options B, D, and F, exposure to private market investments. For the majority of allocation options, the impact of adding these assets provides a diversification effect that lowers expected portfolio volatility and have equal or higher Sharpe ratio expectations when compared to the current Policy Allocation. On a stand-alone basis, each newly adopted asset type presents its own set of risks. For the private markets, this includes illiquidity risk, which is discussed further in the next section of this memo. Given LACERA's long-standing experience investing in private markets, staff is capable of incorporating and monitoring private assets into the OPEB Trust. Additionally, LACERA's ability to measure and assess risk across the OPEB Trust is further enhanced by its comprehensive risk system.

Liquidity Profile

In reviewing liquidity levels for the proposed policy options, **Chart 4** demonstrates that there are two distinct portfolio liquidity options. The current policy and Options A, C, and E remain 100% invested in liquid vehicles (index or mutual funds) to express all asset class exposures within their policy mix. Options B, D, and F include allocating to illiquid private markets, but the model was constrained to allow a maximum illiquid allocation of 18%. Therefore, Options B, D, and F remain 82% liquid. The recommended Option B includes the 18% allocation, and that translates to 82% of the Trust being readily available to liquidate within 1-3 weeks. An estimate to liquidate the 18% illiquid portion could take anywhere from one quarter for strategies that offer quarterly liquidity to one year for private equity investments. It should be noted that liquidation of private assets may require selling the investments at a discount to net asset value. Nevertheless, as each portfolio option provides 80-100% liquidity, staff believes that each option has sufficient liquidity for the OPEB Trust. Furthermore, LACERA will utilize the recently adopted risk system for ongoing monitoring and management of liquidity levels.

LACERA reached out to the Los Angeles County and Superior Court regarding the adoption of private assets and addressed liquidity and cash flow needs. Both have stated that they are comfortable with the addition of illiquid assets and affirmed that they do not anticipate using the Trust as a source of benefit payments for the foreseeable future.

Chart 4
Liquidity Profile



- Each policy portfolio has at least 82 % allocated to liquid assets.

IMPLEMENTATION

Should the Board approve the recommended Option B for the OPEB Trust Asset Allocation, the expected time to implement the new strategic asset allocation is 12 to 36 months as Option B includes new asset classes and the introduction of private markets. This timeframe is reasonable given that the OPEB Trust will migrate from a purely passive implementation to a hybrid passive/active blend including private asset commitments that may be drawn down over time. Staff observes that at the functional level, target allocations can be met in a short period of time as the Trust currently includes liquid market alternatives.

If the Board adopts Policy B to include new asset categories and private market assets, the recommended implementation path for private market assets, as discussed in previous presentations, would likely be through a multi-asset mandate separate account or manager-of-managers model. This is a good first step for the OPEB Trust given its size. As the Trust grows in market value and complexity, staff will discuss with the BOI ways to implement private assets in a similar way to LACERA's Pension, including a review of resources. Last, the total investment fees for the Trust is expected to increase from 0.10% to an estimated 0.25-0.30%.

Subsequent to any Board SAA approval, Meketa and staff will present the BOI with an updated IPS that reflects the changes in target allocation, benchmarks, and rebalancing ranges. A timeline for implementation of the Pension Trust Asset Allocation is listed in **Table 1** below.

Table 1
Tentative Asset Allocation Implementation Timeline

Next Steps	Target Date for Completion
Determine benchmarks for the OPEB Trust Asset Allocation	June 2021
Update Investment Policy Statement	August 2021
Transition to updated Strategic Asset Allocation	June 2022 – June 2023

Staff will provide the Board with periodic status updates on the implementation process.

CONCLUSION

LACERA's 2021 SAA study for the OPEB Trust has led to the six allocation options presented and discussed in this memorandum. Each allocation has its merits and challenges, and through a thorough assessment of the portfolios, staff recommends that the Board approve SAA Option B for the OPEB Trust.

Attachments

MEKETA

INVESTMENT GROUP

Los Angeles County Employees Retirement Association - OPEB

June 2021

Asset Allocation Review and Risk Analysis

Agenda

1. Introduction
2. Proposed Policy Options
3. Diversification and Risk Analysis
4. Recommendation and Next Steps
5. Appendices

Introduction

Introduction

- LACERA's Investment Beliefs state that "Long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes."
- In December 2017, the BOI approved a new strategic asset allocation for the OPEB Trust.
- As of March 2021, the OPEB Trust assets have grown to $2.1B, bringing the OPEB to a feasible size to introduce illiquid and alternative asset classes.
- At the February BOI meeting, Meketa gave a presentation which;
  - Highlighted the differences in asset categories between the Pension and the OPEB Trusts and
  - Showed the potential benefits of adding private market asset classes which tend to be less correlated with traditional assets and produce higher expected returns than their liquid counterparts.
- At the April BOI meeting, Meketa reviewed allocation options for the OPEB Trust which included the use of illiquid asset classes.
- This presentation contains a set of policy options for the Board to consider for the OPEB Trust.

Goal

- Approval of a new Strategic Asset Allocation for the OPEB Trust.

Proposed Policy Options

Overview of Proposed Policy Options

- The OPEB Trust has an actuarial assumed rate of return of 6%.
- The OPEB Trust's current policy is expected to provide a 20-year expected return of 6.1% with a standard deviation of 13.2%.[1]
- Meketa developed the proposed policy options in collaboration with LACERA staff. Each of the the proposed policy options are designed to have expected returns which are similar to or greater than the current policy while reducing or maintaining the level of risk.
- The policy options are organized in two ways:
  - The options are delineated across expected returns ranging from 6.1% to 6.5%.
  - At each level of expected return there is an option which includes private market assets and an option which only utilizes liquid asset classes.
- The expected return range was "capped" at 6.5% because seeking returns above that level would involve a significant departure in expected risk from the current policy.
- The exposure to private market assets was "capped" at 18% across the proposed policy options based primarily on implementation considerations.

[1] Based upon Meketa Investment Group's 2021 Annual Asset Study.

Overview of Strategic Asset Allocation Policy Options

- **CP**: Current Policy.
- **Policy A: 6.1% without Private Markets** = The policy is designed to minimize risk while maintaining the 6.1% expected return of the Current Policy without private market assets.
- **Policy B: 6.1% with Private Markets** = The policy is designed to minimize risk while maintaining the 6.1% expected return of the Current Policy. The policy utilizes private market assets to further improve the expected risk adjusted return profile.
- **Policy C: 6.3% without Private Markets** The policy is designed to maintain the level of risk of the Current Portfolio while seeking a higher expected return without adding private market assets.
- **Policy D: 6.3% with Private Markets** = The policy is designed to match the level of expected return of Policy C and to further improve the expected risk adjusted return profile by utilizing private market assets.
- **Policy E: 6.5% without Private Markets** = The policy is designed to further enhance expected return by targeting a 6.5% expected return. With only public market assets this required some incremental risk when compared with the Current Policy.
- **Policy F: 6.5% with Private Markets** = The policy is designed to seek a 6.5% expected return with the inclusion of private market assets.

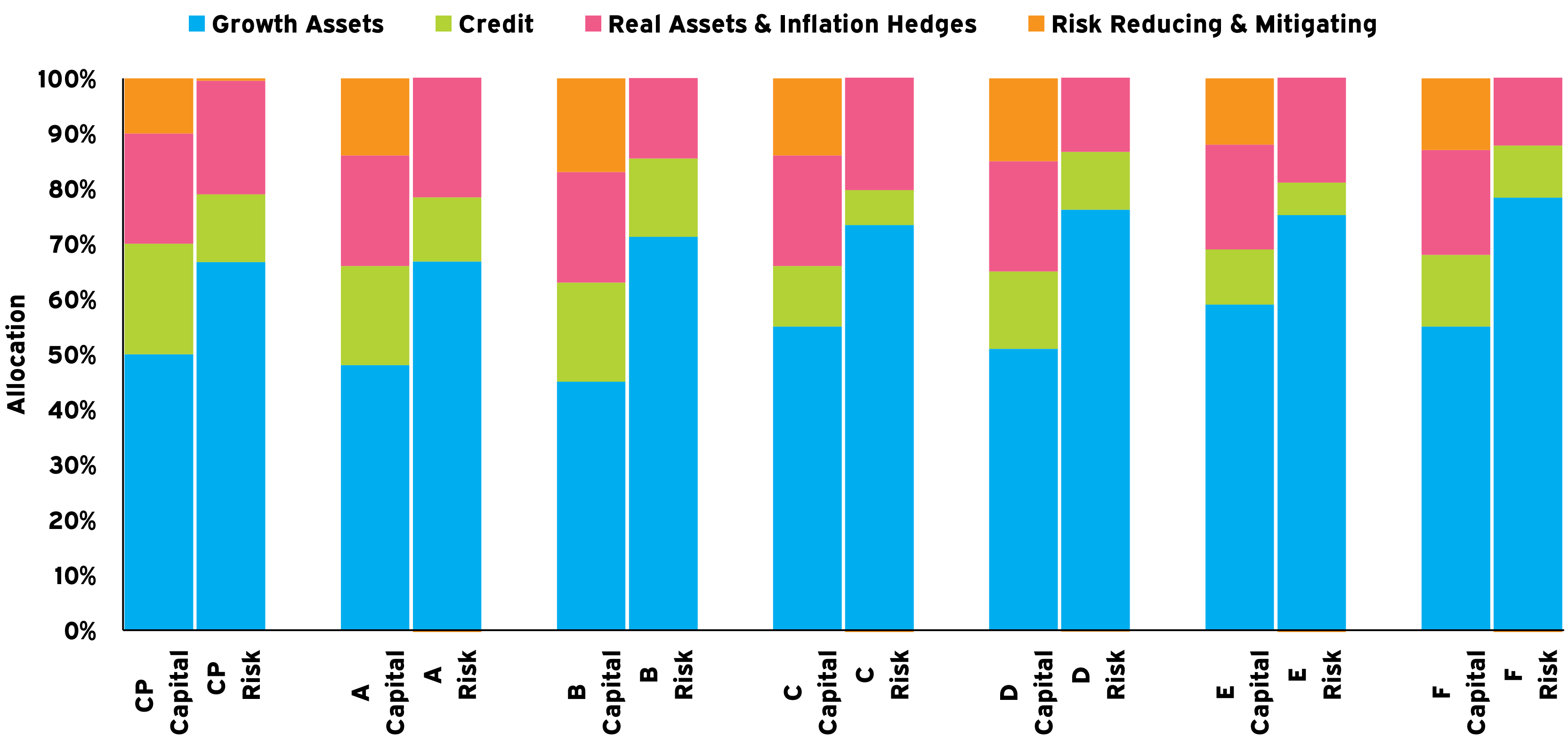
Asset Allocation Policy Options[1]

	CP Current Policy (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
Growth Assets	50	48	45	55	51	59	55
Global Equity	50	48	40	55	46	59	50
Private Equity	0	0	5	0	5	0	5
Credit	20	18	18	11	14	10	13
Liquid Credit	20	18	13	11	9	10	8
Illiquid Credit	0	0	5	0	5	0	5
Real Assets and Inlation Hedges	20	20	20	20	20	19	19
Real Estate	10	8	8	8	8	8	8
TIPS	6	6	6	6	6	5	5
Natural Resources	0	2	2	2	2	2	2
Commodities	4	2	2	2	2	2	2
Infrastructure	0	2	2	2	2	2	2
Risk Reducing and Mitigating	10	14	17	14	15	12	13
Cash Equivalents	2	2	2	2	2	2	2
Investment Grade Bonds	8	7	10	7	8	5	6
Long-term Government Bonds	0	5	5	5	5	5	5
Expected Return	*6.1*	*6.1*	*6.1*	*6.3*	*6.3*	*6.5*	*6.5*
Standard Deviation	*13.2*	*12.6*	*11.5*	*13.3*	*12.2*	*13.9*	*12.8*
Sharpe Ratio	*0.38*	*0.39*	*0.43*	*0.39*	*0.42*	*0.38*	*0.42*
% Illiquid	*0.0*	*0.0*	*18.0*	*0.0*	*18.0*	*0.0*	*18.0*

[1] Expected return and standard deviation are based upon Meketa Investment Group's 2021 Annual Asset Study. Throughout this document, returns for periods longer than one year are annualized.

Diversification and Risk Analysis

Risk Budgeting Analysis
(Capital Allocation vs. Risk Allocation)



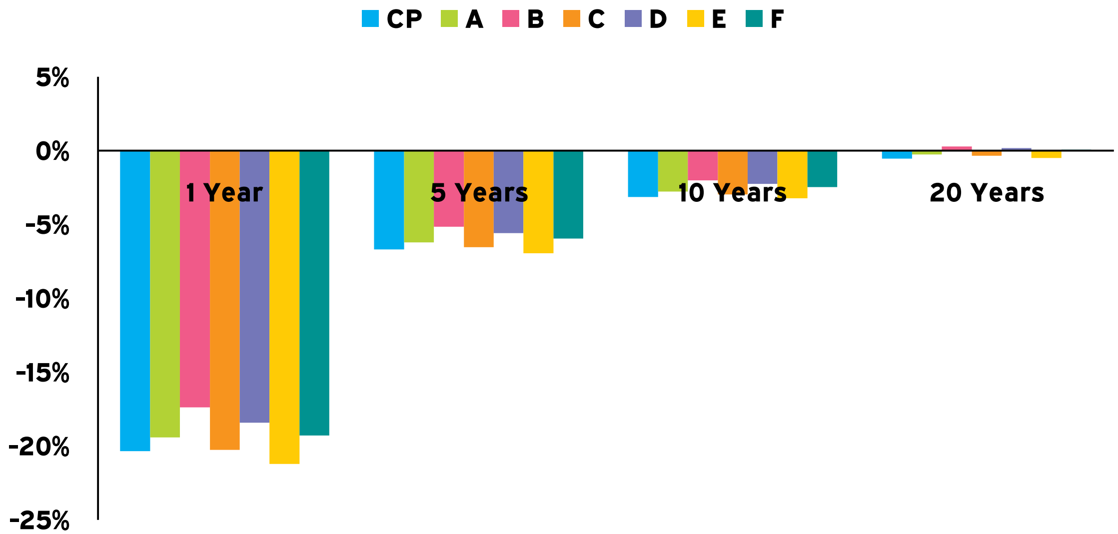
- Assets with low relative volatility, such as rate sensitive fixed income, contribute less to risk than their asset weighting implies.

MVO-Based Risk Analysis

Scenario	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
Worst Case Returns[1]							
One Year	-20.4	-19.4	-17.4	-20.3	-18.4	-21.2	-19.3
Five Years (annualized)	-6.7	-6.2	-5.2	-6.6	-5.6	-7.0	-6.0
Ten Years (annualized)	-3.1	-2.8	-2.0	-3.0	-2.3	-3.2	-2.5
Twenty Years (annualized)	-0.5	-0.3	0.3	-0.4	0.2	-0.5	0.0
Probability of Experiencing Negative Returns							
One Year	31.7	31.0	29.3	31.2	29.7	31.5	30.0
Five Years	14.4	13.3	11.1	13.6	11.6	14.1	12.1
Ten Years	6.6	5.8	4.2	6.0	4.6	6.4	4.9
Twenty Years	1.7	1.3	0.7	1.4	0.9	1.6	1.0
Probability of Achieving at least a 6% Return							
One Year	50.1	50.1	50.1	50.8	50.8	51.2	51.4
Five Years	50.2	50.3	50.2	51.7	51.9	52.7	53.0
Ten Years	50.3	50.4	50.3	52.4	52.6	53.8	54.3
Twenty Years	50.4	50.5	50.4	53.4	53.7	55.4	56.1

[1] "Worst Case" Return Projections assume a negative three standard deviation event (i.e., it encompasses >99% of possible outcomes).

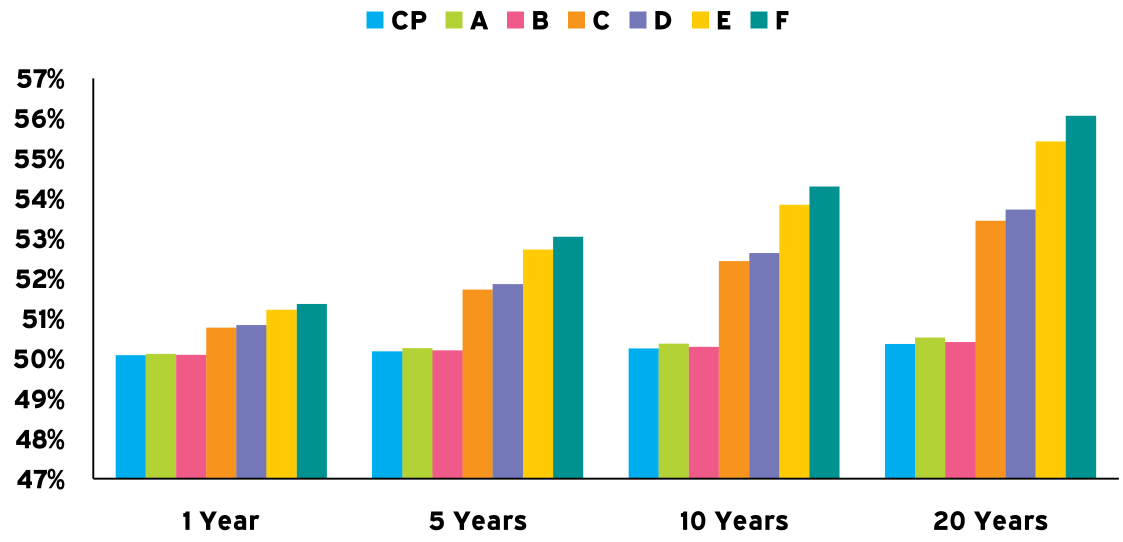
"Worst Case" Return Projections[1]



	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
1 Year	-20.4	-19.4	-17.4	-20.3	-18.4	-21.2	-19.3
5 Years	-6.7	-6.2	-5.2	-6.6	-5.6	-7.0	-6.0
10 Years	-3.1	-2.8	-2.0	-3.0	-2.3	-3.2	-2.5
20 Years	-0.5	-0.3	0.3	-0.4	0.2	-0.5	0.0

[1] "Worst Case" Return Projections assume a negative three standard deviation event (i.e., it encompasses >99% of possible outcomes).

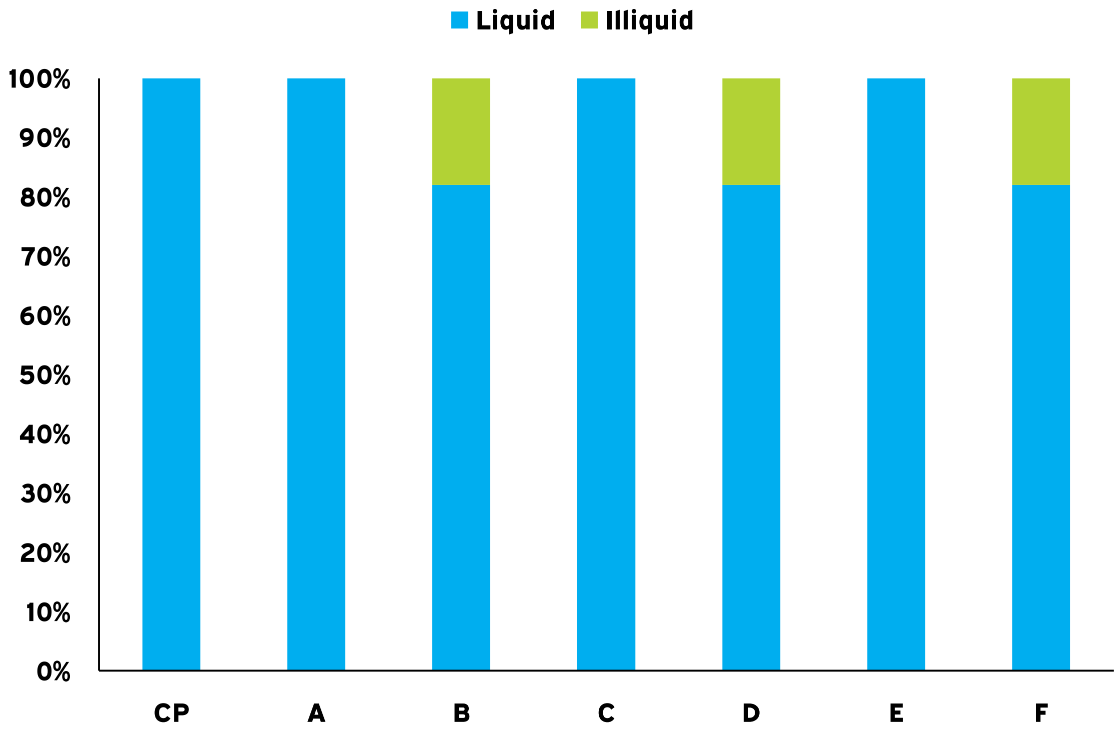
Probability of Achieving Target Return[1]



	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
1 Year	50.1	50.1	50.1	50.8	50.8	51.2	51.4
5 Years	50.2	50.3	50.2	51.7	51.9	52.7	53.0
10 Years	50.3	50.4	50.3	52.4	52.6	53.8	54.3
20 Years	50.4	50.5	50.4	53.4	53.7	55.4	56.1

[1] Represents the probability of achieving a 6.0% return over the specified time horizon.

Liquidity Profile[1]



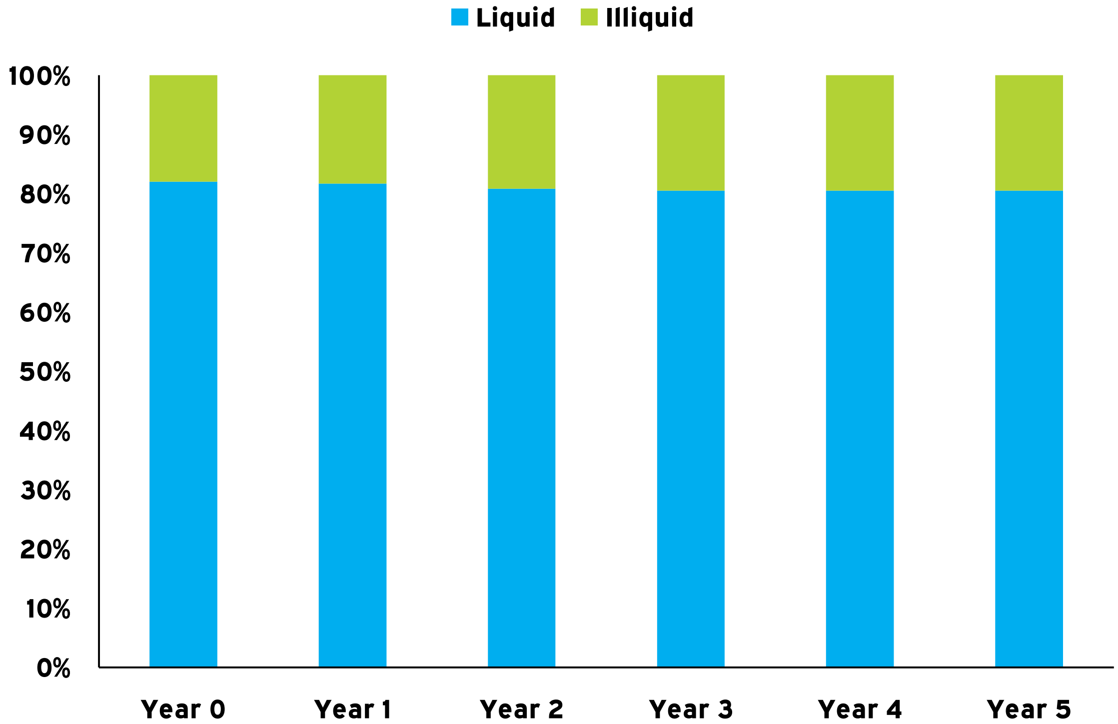
- Each policy portfolio has at least 82 % allocated to liquid assets.

[1] For this analysis, we categorize assets with monthly or more frequent liquidity as liquid. Illiquid assets are those with less than monthly liquidity (Private Equity, Illiquid Credit, Core Private Real Estate and Core Private Infrastrucuture).

Liquidity Stress Test Introduction

- We conducted an extreme stress test to analyze the Trust's liquidity.
- The scenario is designed to be extreme.
  - In Years 1 – 3, we use the returns produced by each asset class in 4Q07, 2008, and 1Q09, respectively. In Years 4 – 5, we assume flat (0%) returns for each asset class (i.e., no rebound).
  - We assume no cash flows.
  - We assume closed-end funds offer no liquidity in years 1 – 4, and very limited liquidity in year 5.
  - We assume open-end funds (Core Real Estate and Infrastructure) offer no liquidity in years 1 – 3, and limited liquidity in years 4 - 5.
  - We assume the Trust would rebalance toward its policy targets each year.
- We show the results for Policy F: 6.5% w/ PM on the following pages, as it is least liquid and highest risk profile of the policy options and thus represents the most extreme case.

Liquidity Stress Test: Liquidity Profile
(Policy F: 6.5% w/ PM)



- At the trough, the policy portfolio would still have nearly 80% of its assets in liquid vehicles.

Historical Negative Scenario Analysis
(*Cumulative* Return)

Scenario	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
COVID-19 Market Shock (Feb 2020-Mar 2020)	-25.6	-24.4	-18.4	-25.5	-19.5	-26.5	-20.7
Taper Tantrum (May - Aug 2013)	-3.1	-3.5	-1.7	-3.1	-1.6	-3.3	-1.5
Global Financial Crisis (Oct 2007 - Mar 2009)	-35.2	-32.5	-25.8	-34.8	-28.0	-36.3	-29.9
Popping of the TMT Bubble (Apr 2000 - Sep 2002)	-12.8	-13.3	-10.2	-16.7	-13.6	-19.3	-16.5
LTCM (Jul - Aug 1998)	-10.3	-9.4	-7.1	-9.4	-7.8	-10.8	-8.5
Rate spike (1994 Calendar Year)	2.4	1.6	2.8	2.4	2.9	2.0	3.2
Crash of 1987 (Sep - Nov 1987)	-13.0	-12.6	-9.2	-13.7	-10.4	-14.9	-11.3
Strong dollar (Jan 1981 - Sep 1982)	-1.5	-0.3	2.7	-1.3	1.2	-2.7	0.0
Volcker Recession (Jan - Mar 1980)	-5.1	-5.6	-4.9	-5.9	-5.0	-5.9	-4.9
Stagflation (Jan 1973 - Sep 1974)	-18.9	-20.3	-15.5	-21.9	-17.5	-23.9	-19.2

Historical Positive Scenario Analysis
(Cumulative Return)

Scenario	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
Global Financial Crisis Recovery (Mar 2009 - Nov 2009)	48.4	46.6	35.8	48.2	37.6	49.6	39.4
Best of Great Moderation (Apr 2003 - Feb 2004)	32.9	32.2	27.3	34.1	29.4	35.9	30.9
Peak of the TMT Bubble (Oct 1998 - Mar 2000)	31.2	30.1	32.6	32.2	35.7	35.8	37.7
Plummeting Dollar (Jan 1986 - Aug 1987)	66.8	66.5	55.1	72.1	60.6	76.6	64.4
Volcker Recovery (Aug 1982 - Apr 1983)	32.8	33.3	28.0	34.9	29.4	36.0	30.4
Bretton Wood Recovery (Oct 1974 - Jun 1975)	29.8	29.6	24.3	31.5	26.2	33.2	27.7

Stress Testing: Impact of Market Movements (Expected Return under Stressed Conditions)

Scenario	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
10-year Treasury Bond rates rise 100 bps	3.6	2.8	2.3	3.1	2.7	3.5	3.1
10-year Treasury Bond rates rise 200 bps	-1.1	-2.7	-2.7	-2.3	-2.3	-2.0	-1.9
10-year Treasury Bond rates rise 300 bps	-3.8	-6.1	-6.7	-5.8	-6.2	-5.2	-5.7
Baa Spreads widen by 50 bps, High Yield by 200 bps	-0.7	-0.2	0.4	-0.1	0.3	-0.2	0.2
Baa Spreads widen by 300 bps, High Yield by 1000 bps	-25.7	-24.4	-20.2	-25.5	-21.3	-26.3	-22.4
Trade Weighted Dollar gains 10%	-4.9	-4.6	-4.0	-5.0	-4.4	-5.3	-4.7
Trade Weighted Dollar gains 20%	-2.6	-2.2	-2.0	-2.3	-2.4	-2.9	-2.7
US Equities decline 10%	-5.6	-5.6	-4.7	-6.0	-5.2	-6.4	-5.6
US Equities decline 25%	-18.8	-18.1	-15.3	-18.9	-16.2	-19.7	-17.1
US Equities decline 40%	-31.5	-30.1	-24.8	-31.6	-26.4	-32.9	-27.7

Stress Testing: Impact of Positive Market Movements (Expected Return under Stressed Conditions)

Scenario	CP Targets (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
10-year Treasury Bond rates drop 100 bps	2.2	3.1	3.2	3.0	3.1	2.8	2.8
10-year Treasury Bond rates drop 200 bps	12.2	13.8	12.0	14.4	12.4	14.6	12.5
Baa Spreads narrow by 30bps, High Yield by 100 bps	6.9	6.8	6.4	7.1	6.7	7.3	7.0
Baa Spreads narrow by 100bps, High Yield by 300 bps	17.4	16.7	13.3	16.7	13.5	17.0	14.0
Trade Weighted Dollar drops 10%	8.2	8.1	7.2	8.4	7.5	8.8	7.8
Trade Weighted Dollar drops 20%	22.9	23.7	20.1	25.5	21.9	27.0	23.0
US Equities rise 10%	6.3	6.3	5.7	6.6	6.1	6.9	6.3
US Equities rise 30%	16.9	16.8	14.0	17.9	15.2	18.9	16.0

Asset Allocation Policy Options[1]

	CP Current Policy (%)	A 6.1 w/o PM (%)	B 6.1 w/ PM (%)	C 6.3 w/o PM (%)	D 6.3 w/ PM (%)	E 6.5 w/o PM (%)	F 6.5 w/ PM (%)
Growth Assets	50	48	45	55	51	59	55
Global Equity	50	48	40	55	46	59	50
Private Equity	0	0	5	0	5	0	5
Credit	20	18	18	11	14	10	13
Liquid Credit	20	18	13	11	9	10	8
Illiquid Credit	0	0	5	0	5	0	5
Real Assets and Inlation Hedges	20	20	20	20	20	19	19
Real Estate	10	8	8	8	8	8	8
TIPS	6	6	6	6	6	5	5
Natural Resources	0	2	2	2	2	2	2
Commodities	4	2	2	2	2	2	2
Infrastructure	0	2	2	2	2	2	2
Risk Reducing and Mitigating	10	14	17	14	15	12	13
Cash Equivalents	2	2	2	2	2	2	2
Investment Grade Bonds	8	7	10	7	8	5	6
Long-term Government Bonds	0	5	5	5	5	5	5
Expected Return	*6.1*	*6.1*	*6.1*	*6.3*	*6.3*	*6.5*	*6.5*
Standard Deviation	*13.2*	*12.6*	*11.5*	*13.3*	*12.2*	*13.9*	*12.8*
Sharpe Ratio	*0.38*	*0.39*	*0.43*	*0.39*	*0.42*	*0.38*	*0.42*
% Illiquid	*0.0*	*0.0*	*18.0*	*0.0*	*18.0*	*0.0*	*18.0*

[1] Expected return and standard deviation are based upon Meketa Investment Group's 2021 Annual Asset Study. Throughout this document, returns for periods longer than one year are annualized.

Recommendation and Next Steps

Recommendation and Next Steps

Recommendation:

- Meketa Investment Group believes that the alternative options presented above offer enhancements to help LACERA improve the likelihood of meeting the objectives of the OPEB Trust.
- There is no “right” or “an only prudent” choice, rather, there are tradeoffs to each option.
- Meketa is aware that Staff is recommending option B. Meketa believes that all of the options presented are reasonable for LACERA and we look forward to assisting the Board in selecting a strategic asset allocation.

Next Steps:

- Benchmark presentation and discussion.
- IPS Update to reflect Strategic Asset Allocation and benchmarks (July/August).
- Implementation (ongoing).

Appendices

Meketa Investment Group 2021 Annual Asset Study
Twenty-Year Annualized Return and Volatility Expectations for Major Asset Classes

Asset Class	Annualized Compounded Return (%)	Annualized Average Return (%)	Annualized Standard Deviation (%)
Rate Sensitive			
Cash Equivalents	1.1	1.1	1.0
Investment Grade Bonds	1.8	1.9	4.0
Long-term Government Bonds	2.5	3.2	12.0
TIPS	1.8	2.0	7.0
Credit			
High Yield Bonds	4.2	4.8	11.0
Bank Loans	4.0	4.4	9.0
Emerging Market Bonds (major; unhedged)	3.7	4.3	11.0
Emerging Market Bonds (local; unhedged)	3.9	4.9	14.0
Direct Lending	6.7	7.7	14.0
Mezzanine Debt	6.9	8.2	16.0
Distressed Debt	7.0	9.2	21.0
Equities			
Public US Equity	6.8	8.4	18.0
Public Developed Market Equity	7.1	8.9	19.0
Public Emerging Market Equity	8.1	11.0	24.0
Private Equity Composite	9.1	13.0	28.0
Real Assets			
REITs	7.2	10.6	26.0
Core Private Real Estate	5.5	6.2	12.0
Value Added Real Estate	7.2	9.7	20.0
Opportunistic Real Estate	9.2	12.6	26.0
High Yield Real Estate Debt	6.0	7.6	18.0
Natural Resources (Public)	7.3	9.9	23.0
Commodities	3.7	5.1	17.0
Infrastructure (Core)	7.0	8.0	14.0
Infrastructure (Non-Core)	9.0	11.4	22.0
Other			
Hedge Funds	4.3	4.5	7.0

Meketa Investment Group 2021 Annual Asset Study: Correlation Expectations

	Investment Grade Bonds	TIPS	High Yield Bonds	US Equity	Developed Market Equity	Emerging Market Equity	Private Equity	Real Estate	Natural Resources (Public)	Commodities	Core Infrastructure (private)	Hedge Funds
Investment Grade Bonds	1.00											
TIPS	0.77	1.00										
High Yield Bonds	0.23	0.41	1.00									
US Equity	0.02	0.19	0.75	1.00								
Developed Market Equity	0.10	0.24	0.76	0.89	1.00							
Emerging Market Equity	0.15	0.33	0.75	0.78	0.87	1.00						
Private Equity	0.00	0.05	0.70	0.85	0.80	0.75	1.00					
Real Estate	0.20	0.10	0.50	0.50	0.45	0.40	0.45	1.00				
Natural Resources (Public)	0.02	0.25	0.65	0.77	0.85	0.85	0.60	0.50	1.00			
Commodities	0.02	0.31	0.54	0.53	0.60	0.65	0.30	0.15	0.65	1.00		
Core Infrastructure (private)	0.30	0.30	0.60	0.55	0.55	0.50	0.45	0.60	0.60	0.35	1.00	
Hedge Funds	0.05	0.26	0.78	0.86	0.88	0.86	0.60	0.45	0.65	0.67	0.60	1.00

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

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PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

FOR INFORMATION ONLY

June 10, 2021

TO: Trustees – Board of Investments

FROM: Scott Zdrazil
Senior Investment Officer

Dale Johnson
Investment Officer

Crystal Milo
Senior Investment Analyst

FOR: July 14, 2021, Board of Investments Meeting

SUBJECT: **GLOBAL INVESTOR STATEMENT ON CLIMATE CHANGE**

Please find attached the updated Global Investor Statement to Governments on Climate Change ("Statement"), publicly released June 10, 2021, in advance of the 26th UN Climate Change Conference of the Parties ("COP26"). The Statement has been endorsed by 457 investors representing over US$41 trillion in assets. Endorsing investors include LACERA asset managers (such as DWS, State Street Global Advisors, and PIMCO), as well as several public plans, including California funds CalPERS, CalSTRS, and San Francisco Employees Retirement System.

LACERA initially endorsed the Statement in 2018 and participated in this year's updated Statement in adherence with the procedures and principles defined in LACERA's board-approved *Corporate Governance and Stewardship Principles* policy ("Principles") and upon review and approval of the Corporate Governance Committee Chair.

Background

LACERA's Principles recognize that climate change may pose financial risks and opportunities to individual investments and the broader market in which we invest. LACERA pursues stewardship strategies to encourage policies and practices aligned with its Principles. LACERA has signed onto the Statement since 2018, which asks that governments adopt policies that facilitate adherence to the Paris Agreement and reduce emissions linked to climate change, in order to mitigate the economic consequences of climate change for LACERA's portfolio and portfolio companies.

The Statement is released in advance of international climate change conventions, called "Conferences of the Parties," or COP, that are typically held annually (e.g. the Paris Agreement was adopted at COP21 in Paris in 2015). COP26 was delayed from 2020 due to the COVID-19 pandemic and will be held this fall.

The COP26 Statement is updated to reflect the pandemic and request that governments:

- Strengthen short-term policies to align 2030 trajectories with a 1.5 degree scenario and achieve net zero by 2050 or sooner;
- Outline interim targets for each carbon-intensive sector;
- Incentivize low-carbon investment and innovation in government policies;
- Ensure COVID recovery plans support a low carbon transition; and
- Require corporate reporting on climate risks consistent with the Task force on Climate-related Financial Disclosures (which LACERA has formally endorsed) to ensure consistent, comparable, reliable market data.

The Statement was coordinated by regionally-focused investor networks, including CERES, which coordinates investors and companies in North America addressing climate-related financial risk. CERES is also the regional coordinator for Climate Action 100+, which LACERA has formally endorsed and through which LACERA is collaborating with other investors to engage 160 of the most carbon intensive companies to report climate risks and reduce their carbon intensity.

Attachment

Noted and Reviewed:

____
Jonathan Grabel
Chief Investment Officer

ATTACHMENT

2021 Global Investor Statement to Governments on the Climate Crisis

This statement, coordinated by the seven Founding Partners of The Investor Agenda, is signed by 457 investors representing over USD $41 trillion in assets

We stand at the beginning of a pivotal decade in which institutional investors and government leaders worldwide have the power to raise ambition and accelerate action to tackle the climate crisis. If we do not meet this challenge and change course immediately, the world could heat in excess of 3-degrees Celsius this century[1] – far beyond the goal of the Paris Agreement to limit the global average temperature rise to no more than 1.5-degrees Celsius, which scientists say is necessary to avoid the worst impacts of climate change.

To achieve this common goal, we must work together to reduce global net carbon dioxide emissions by 45 percent from 2010 levels by 2030[2], with a dramatic reduction of all greenhouse gas emissions essential for reaching net-zero emissions by 2050 or sooner. Key to this is ensuring government leaders support sustainable COVID-19 economic recovery efforts consistent with net-zero emissions.

As the world prepares to gather for the 26th United Nations Climate Change Conference of the Parties (COP26), we encourage all countries to significantly strengthen their Nationally Determined Contributions (NDCs) for 2030 and to ensure a planned transition to net-zero emissions by 2050 or sooner. While we recognize the differentiated responsibilities and respective capabilities of countries, we believe that those who set ambitious targets in line with achieving net-zero emissions, and implement consistent national climate policies in the short-to-medium term, will become increasingly attractive investment destinations. Countries that fail to do so will find themselves at a competitive disadvantage.

In this shared global crisis, investors and governments each have a responsibility to act swiftly and boldly. Investors are taking climate action in line with The Investor Agenda, with more investors than ever before embedding net zero goals and strategies into their portfolio decisions, engaging companies to cut their emissions and calling on policymakers to deliver robust climate action. Investors are urgently seeking to decrease their exposure to climate risk as a core fiduciary duty and benefit from the opportunities associated with the transition to a net-zero emissions economy.

However, our ability to properly allocate the trillions of dollars needed to support the net-zero transition is limited by the ambition gap between current government commitments (as set out in NDCs) and the emission reductions needed to limit global average temperature rise to 1.5-degrees Celsius. In addition, as owners of (or those representing owners of) companies, we need access to adequate information on how these companies are assessing and managing the risks and opportunities presented by climate change. Government policy has a critical role to play in increasing our access to and affirmative disclosure of such information.

[1] https://www.unenvironment.org/emissions-gap-report-2020

[2] https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/

These gaps – in climate ambition, policy action and risk disclosure - need to be addressed with urgency.

We, therefore, call on all governments in 2021 to:

1. Strengthen their NDCs for 2030 before COP26, to align with limiting warming to 1.5-degrees Celsius and ensuring a planned transition to net-zero emissions by 2050 or sooner.

2. Commit to a domestic mid-century, net-zero emissions target and outline a pathway with ambitious interim targets including clear decarbonization roadmaps for each carbon-intensive sector.

3. Implement domestic policies to deliver these targets, incentivize private investments in zero-emissions solutions and ensure ambitious pre-2030 action through: robust carbon pricing, the removal of fossil fuel subsidies by set deadlines, the phase out of thermal coal-based electricity generation by set deadlines in line with credible 1.5-degrees Celsius temperature pathways, the avoidance of new carbon-intensive infrastructure (e.g. no new coal power plants) and the development of just transition plans for affected workers and communities.

4. Ensure COVID-19 economic recovery plans support the transition to net-zero emissions and enhance resilience. This includes facilitating investment in zero-emissions energy and transport infrastructure, avoiding public investment in new carbon-intensive infrastructure and requiring carbon-intensive companies that receive government support to enact climate change transition plans consistent with the Paris Agreement.

5. Commit to implementing mandatory climate risk disclosure requirements aligned with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, ensuring comprehensive disclosures that are consistent, comparable, and decision-useful.

Strong policies, in line with limiting global warming to no more than 1.5-degrees Celsius, can accelerate and scale up private capital flows towards the net-zero transition. Full implementation of the Paris Agreement will create significant investment opportunities in clean technologies, green infrastructure and other assets, products and services needed in this new economy. In turn, investors can use capital allocation and stewardship to support sustainable activities that generate jobs and economic growth, transition away from carbon-intensive activities and increase resilience. We encourage governments to engage closely with investors to make sure these opportunities are fully realized.

As investors, we are committed to working with governments to ensure policy mechanisms are developed and implemented to transition to a climate resilient net-zero emissions economy by 2050 or sooner.

We urge all governments to step up their collective response to the climate crisis.

Note: The following 457 investor signatories with over USD $41 trillion in assets are listed in alphabetical order by organisation name.

a.s.r. asset management
Aargauische Pensionskasse (APK)
Aberdeen Standard Investments
Absa Asset Management
Achmea Investment Management
Active Ownership Fund
Active Super
AIF Capital Limited
Aikya Investment Management
AIP Management
AkademikerPension
Aktia Bank
Alecta
Algebris Investments
AllianceBernstein
Allianz Global Investors
Alquity Investment Management Limited
Alternative Capital Partners SGR Spa
Amberside Capital
AMF
Amundi
Anaxis Asset Management
Andra AP-fonden (AP2)
Anesvad Foundation
Angel Oak Capital Advisors, LLC
Anima Sgr
AP Pension
AP3 Third Swedish National Pension Fund
AP4 Fourth Swedish National Pension Fund
AP6 Sixth Swedish National Pension Fund
AP7 Seventh Swedish National Pension Fund
APG Asset Management
ARDEA Investment Management
Arisaig Partners
Armstrong Asset Management
Artico Partners
Arvella Investments
As You Sow
Assenagon Asset Management S.A.
Asset Management One
ATISA Personalvorsorgestiftung der Tschümperlin-Unternehmungen
ATLAS Infrastructure
ATP
Ausbil Investment Management Limited
Australian Ethical Investment
AustralianSuper
Avaron Asset Management
Avera Health
Aviva Plc
Avon Pension Fund
Aware Super
AXA Investment Managers
Bamboo Capital Partners
BancoPosta Fondi Sgr
BankInvest
Bâtirente
BayernInvest Kapitalverwaltungsgesellschaft mbH
BBGI Global Infrastructure S.A.
BBVA Asset Management
Bernische Lehrerversicherungskasse
Bernische Pensionskasse BPK
BMO Asset Management Ltd
BNP Paribas Asset Management
BONUS Pensionskassen Aktiengesellschaft
Border to Coast Pensions Partnership
Boston Common Asset Management
Boston Trust Walden
Brawn Capital
Bridges Fund Management
British Columbia Investment Management Corporation (BCI)
British Columbia Municipal Pension Plan
British Dietetic Association
Brunel Pension Partnership
BT Pension Scheme
Bupa
Cadence Investment Partners LLP
Caisse Cantonale d'Assurance Populaire - CCAP
Caisse de dépôt et placement du Québec (CDPQ)
Caisse de pension du Comité international de la Croix-Rouge
Caisse de pension Hewlett-Packard Plus
Caisse de pensions de l'Etat de Vaud (CPEV)
Caisse de pensions du CERN
Caisse de pensions du personnel communal de Lausanne (CPCL)
Caisse de pensions ECA-RP
Caisse de prév. des Fonctionnaires de Police & des Etablissements Pénitentiaires
Caisse de Prévoyance de l'Etat de Genève
Caisse de Prévoyance des Interprètes de Conférence (CPIC)

Caisse de prévoyance du personnel communal de la ville de Fribourg
Caisse de prévoyance du personnel de l'Etat de Fribourg (CPPEF)
Caisse de prévoyance du personnel de l'Etat du Valais (CPVAL)
Caisse intercommunale de pensions (CIP)
Caisse paritaire de prévoyance de l'industrie et de la construction (CPPIC)
Caja Ingenieros
Caja Ingenieros Gestión SGIIC
California Public Employees Retirement System (CalPERS)
California State Controller
California State Teachers Retirement System
Calvert Research and Management
Canada Post Corporation Pension Plan
Candriam
CAP Prévoyance
Capital Dynamics
Capricorn Investment Group
Cardano
CareSuper
Carmignac
Cassa Nazionale di previdenza e assistenza forense
Castlefield Investment Partners
Cathay Financial Holdings
Cbus Super
CCLA
CCOO, FP
CenterSquare Investment Management
Central Finance Board of the Methodist Church
Christian Brothers Investment Services, Inc.
Christian Super
Church Commissioners for England
Church of England Pensions Board
Church of Scotland Investors Trust
Church of Sweden
CIEPP - Caisse Inter-Entreprises de Prévoyance Professionnelle
Clean Energy Venture Management, LLC
CleanCapital
CNP Assurances
Colchester Global Investors
Colonial First State
Committee on Mission Responsibility Through Investment of the Presbyterian Church U.S.A.
Cooler Future
Corporate Responsibility office - Province of Saint Joseph of the Capuchin Order
Crédit Mutuel Asset Management
Dana Investment Advisors
Danica Pension
Danske Bank Asset Management
DBAY Advisors Limited
Developing World Markets
DIF Capital Partners
Discovery Limited
Domini Impact Investments
Dominican Sisters of Sinsinawa
Dorval Asset Management
DPAM
Dragon Capital Group
DSM Capital Partners LLC
DWS Group
Dynam Capital, Ltd
Earth Capital
East Capital Group
Eastspring Investments Group Pte. Ltd.
Ecofi
EdenTree Investment Management
EGAMO
Ekkio Capital
Elo Mutual Pension Insurance Company
EMCORE AG
Environment Agency Pension Fund
Epworth Investment Management Limited
EQ Investors
ERAFP
Eric Sturdza Investments
ESG Portfolio Management
Etablissement Cantonal d'Assurance (ECA VAUD)
ETHENEA Independent Investors S.A.
Ethical Partners Funds Management
Ethos Foundation
Evanston Capital Management, LLC
Evenlode Investment
Evli Bank
Fairpointe Capital
Falkirk Council Pension Fund
FAMA Investimentos
Federated Hermes International
Fidelity International
FIM Asset Management
Finance in Motion
First Affirmative Financial Network
FMO - Dutch entrepreneurial development bank

Fondation de la métallurgie vaudoise du bâtiment (FMVB)
Fondation de Luxembourg
Fondation de prévoyance Artes & Comoedia
Fondation de prévoyance du Groupe BNP PARIBAS en Suisse
Fondation de prévoyance professionnelle en faveur de AROMED
Fondation de prévoyance Romande Energie
Fondation Interprofessionnelle Sanitaire de Prévoyance (FISP)
Fondation Leenaards
Fondation Patrimonia
Fonditel Pensiones EGFP
FONDO DE PENSIONES EMPLEADOS DE TELEFONICA
Fondoposte
Fonds de Prévoyance de CA Indosuez (Suisse) SA
Fonds interprofessionnel de prévoyance (FIP)
Foresight Group
Första AP-fonden (AP1)
Friends Fiduciary Corporation
Fulcrum Asset Management
FullCycle
GAM Investments
Gebäudeversicherung Luzern
Gebäudeversicherung St. Gallen
Generation Investment Management LLP
Gestion FÉRIQUE
GIB Asset Management
Glasswing Ventures
Glennmont Partners
GOOD GROWTH INSTITUT für globale Vermögensentwicklung mbH
Gore Street Capital
Greater Manchester Pension Fund
Green Century Capital Management
Groupama Asset Management
Groupe La Française
Handelsbanken Fonder AB
Handmaids of the Sacred Heart of Jesus
HESTA
Hexavest
Holberg Fondsforvaltning
HSBC Asset Management
HSBC Bank Pension Trust (UK) Limited
IFM Investors
Ilmarinen Mutual Pension Insurance Company
Impax Asset Management
Inherent Group
Insight Investment
Inspired Evolution Investment Management (Pty) Ltd
Intech Investment Management LLC
Investment Management Corporation of Ontario
Investor Advocates for Social Justice
Ircantec
ISGAM AG
J. Safra Sarasin Sustainable Asset Management
JAB Holding Company Sàrl
JLens Investor Network
Joseph Rowntree Charitable Trust
Jupiter Asset Management
KBI Global Investors
Keva
Khumo Capital (Pty) Ltd
Kinnerton Credit Management A/S
Kyma Investment Partners
La Banque Postale
La Financière de L'Echiquier
Lægernes Pension
Legal & General Investment Management
Lincluden Investment Management Ltd.
Liontrust Investment Partners LLP
Lloyds Banking Group Pensions Trustees Limited
Local Authority Pension Fund Forum
Local Pensions Partnership
LocalTapiola Asset Management ltd
Lombard Odier Investment Managers
London Pensions Fund Authority
Longlead Capital Partners Pte. Ltd.
Los Angeles County Employees Retirement Association (LACERA)
Luzerner Pensionskasse
M&G plc
Macroclimate LLC
MAIF
Maitri Asset Management
Majedie Asset Management
Man Group plc
Manulife Investment Management
Martin Currie Investment Management Limited
Mercer Investments
Merseyside Pension Fund
MFS Investment Management
Miller/Howard Investments, Inc.

MIMCO Capital S.à r.l.
Missionary Oblates/OIP Trust
Mistra, the Swedish Foundation for Strategic Environmental Research
Mitsubishi Corp.-UBS Realty Inc.
Mitsubishi UFJ Trust and Banking
MN
Montanaro Asset Management
MPC Capital
Munich Venture Partners
MV Credit Partners LLP
MYRA Investments
Nanuk Asset Management
National Grid UK Pension Scheme
Natural Investments
NatWest Group Pension Fund
NEI Investments
Nest Sammelstiftung
Neuberger Berman
Neumeier Poma Investment Counsel, LLC
New Forests
New York City Office of the Comptroller
New York State Comptroller
Newton Investment Management
NextEnergy Capital
NGS Super Fund
Nikko Asset Management Co., Ltd.
Ninety One
Nissay Asset Management Corporation
NN Investment Partners
Nomura Asset Management Co., LTD.
Nomura Real Estate Asset Management Co., Ltd.
Nordea Asset Management
Norsad Finance Limited
North East Scotland Pension Fund
Northern Ireland Local Government Officers' Superannuation Committee (NILGOSC)
NorthStar Asset Management, Inc.
Northwest Coalition for Responsible Investment
NZ Funds
OFI AM
Öhman Fonder
Oldfield Partners
OPTrust
Ossiam
Ostrum Asset Management
P+, Pensionskassen for Akademikere
P1 Investment Management Ltd
Pædagogernes Pension (PBU)
Palisade Investment Partners Limited
Pantheon Ventures
Pathfinder Asset Management
PenSam
Pensioenfonds Detailhandel
Pensioenfonds Metaal en Techniek (PMT)
PensionDanmark
Pensionskasse AR
Pensionskasse Bank CIC (Schweiz)
Pensionskasse Basel-Stadt
Pensionskasse Bühler AG Uzwil
Pensionskasse Caritas
Pensionskasse der Basler Kantonalbank
Pensionskasse der Stadt Frauenfeld
Pensionskasse der Stadt Winterthur
Pensionskasse Pro Infirmis
Pensionskasse Römisch-katholische Landeskirche des Kantons Luzern
Pensionskasse Schaffhausen
Pensionskasse SRG SSR
Pensionskasse Stadt Luzern
Pensionskasse Stadt St. Gallen
Pensionskasse Unia
Personalvorsorgekasse der Stadt Bern
PFA Pension
PGGM
Phitrust
PIMCO
PKA
Polden-Puckham Charitable Foundation
Postevita
Power Pacific Investment Management Inc.
Prévoyance Santé Valais (PRESV)
prévoyance.ne
PriorNilsson Fonder
Profelia Fondation de prévoyance
Prosperita Stiftung für die berufliche Vorsorge
Qualitas Equity Funds
Quintet Private Bank
Raiffeisen Pensionskasse Genossenschaft
RAM Active Investments SA
Rathbone Brothers PLC
Regroupement pour la Responsabilité Sociale des Entreprises (RRSE)
Rentes Genevoises
Resona Asset Management Co., Ltd.
Rize ETF
Robeco
Royal London Mutual Insurance Society
RP - Fonds institutionnel
RPMI Railpen

Ruffer LLP
Russell Investments
Sampension Administrationsselskab A/S
San Francisco Employees' Retirement System (SFERS)
Sant Charitable Foundation, Inc.
Santander Asset Management
Sarasin & Partners LLP
SAUL Trustee Company
Schroders
Scientific Beta
SCOR SE
Scottish Widows Group Limited
SEB Investment Management
Secunda Sammelstiftung
Servite Friars
Seventh Generation Interfaith Inc
SharePower Responsible Investing
Sisters of Mary Reparatrix
Sisters of St. Francis of Philadelphia
Sisters of the Holy Cross
Skandia Fonder
Skandia Liv
Smart Private Managers (Luxembourg) S.a.
Söderberg Partners Asset Management
Solaris Investment Management Limited
Sophia University
Sp-Fund Management Company Ltd
Spida Personalvorsorgestiftung
St. Galler Pensionskasse
St. James's Place Wealth Management
Stafford Capital Partners
State Street Global Advisors
Statewide Super
Stiftung Abendrot
Storebrand Asset Management
Strathclyde Pension Fund
Sumitomo Mitsui Trust Asset Management
Summit Charitable Foundation, Inc.
Sustainable Network
SVA Zürich
Swedbank Robur
Swiss Federal Pension Fund PUBLICA
Swisscanto Invest by Zürcher Kantonalbank
Sycomore Asset Management
Tabula Investment Management Limited
Tawreeq Holdings Limited
TBF Global Asset Management
Telligent Capital Management Limited
Terra Alpha Investments
Terre des hommes Schweiz
The Atmospheric Fund
The Barrow Cadbury Trust
The Church Pension Fund (Finland)
The Dai-ichi Life Insurance Company, Limited
The David Rockefeller Fund
The Highland Council Pension Fund
The Pension Protection Fund
The University of Glasgow
The William Leech Foundation Limited
Thematics Asset Management
TOBAM
Tribe Impact Capital LLP
Trillium Asset Management
Trinetra Investment Management LLP
Triple Point
UBS Asset Management
Unfallversicherungskasse des Basler Staatspersonals
Union Bancaire Privée, UBP SA
Union Investment
Unipol Group
UniSuper
Université de Genève (UNIGE)
Universities Superannuation Scheme - USS
University of Toronto Asset Management
Valo Ventures
Van Lanschot Kempen
Vancity Investment Management Ltd. (VCIM)
Varma Mutual Pension Insurance Company
Vauban Infrastructure Partners
Velliv
Vendis Capital
Verein Barmherzige Brüder von Maria-Hilf (Schweiz)
Veritas Investment Partners (UK) Limited
Vert Asset Management
VidaCaixa
Vision Super Pty Ltd
Vontobel
Vorsorge SERTO
Washington State Investment Board
Water Asset Management LLC
Wermuth Asset Management GmbH
Wespath Benefits and Investments
West Yorkshire Pension Fund
Wetherby Asset Management
WHEB Asset Management
Whitehelm Capital
Zevin Asset Management
Zurich Insurance Group

FOR INFORMATION ONLY

June 25, 2021

TO: Trustees – Board of Investments

FROM: Scott Zdrazil
Senior Investment Officer

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **PRINCIPLES FOR RESPONSIBLE INVESTMENT VOTING BALLOT**

Please find below an image of LACERA's member ballot for a mid-term board election of the United Nations-affiliated Principles for Responsible Investment (PRI), to which LACERA is a signatory. PRI conducted a mid-term election under the terms of its governing documents due to a board vacancy that arose with the March 2021 departure of board member Mr. Hiro Mizuno, who had previously been affiliated with the University of Tokyo endowment. One nominee was presented for signatories' consideration to serve the remainder of the three-year term: Mr. Takeshi Kimura, Special Advisory to the Board, Nippon Life Insurance Company.

Voting receipt - 2021 PRI Board Mid-Term Election

Receipt code: **FRTC**

Time of vote: **2021-06-25 19:54:38 Europe/London**

IP address: **63.193.71.3**

2021 PRI Board Mid-Term Election - Asset Owner Ballot

Takeshi Kimura: **For**

In adherence to the principles and procedures of LACERA's *Corporate Governance and Stewardship Principles* policy, staff consulted the Chair of the Corporate Governance Committee and executed LACERA's ballot in advance of the voting deadline.

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

LACERA

FOR INFORMATION ONLY

June 25, 2021

TO: Trustees – Board of Investments

FROM: Scott Zdrazil
Senior Investment Officer

FOR: July 14, 2021, Board of Investments Meeting

SUBJECT: **U.S. SECURITIES AND EXCHANGE COMMISSION COMMENT LETTER REGARDING CLIMATE CHANGE AND ESG DISCLOSURES**

Please find attached LACERA's comment letter to the U.S. Securities and Exchange Commission (SEC) in response to the SEC's March 15, 2021, request for market input regarding the adequacy of corporate disclosures related to financial risks and opportunities related to climate change and broader environmental, social, and governance (ESG) factors.

LACERA's comment letter (**ATTACHMENT**) supports efforts by the SEC to facilitate better consistency, comparability, and reliability of climate and ESG-related investment information. LACERA filed the comment letter consistent with the principles and procedures of our *Corporate Governance and Stewardship Principles* (Principles) which recognize climate change may present financial risks and opportunities to individual companies and the broader economy in which LACERA invests. Moreover, LACERA's Principles support timely, reliable, and comparable reporting of key financial and operating indicators of company performance to facilitate investment analysis and decisions.

Additional information about the SEC's request for input is available on the SEC's website at: https://www.sec.gov/news/public-statement/lee-climate-change-disclosures.

Attachment

Noted and Reviewed:

____
Jonathan Grabel
Chief Investment Officer

LACERA Los Angeles County Employees Retirement Association
300 N. Lake Ave., Pasadena, CA 91101 / PO Box 7060, Pasadena, CA 91109-7060 / www.lacera.com / 626/564-6000

June 10, 2021

Ms. Vanessa Countryman
Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-0609
via email at rule-comments@sec.gov

RE: Request for Comment on Climate Change Disclosures

Dear Ms. Countryman:

The Los Angeles County Employees Retirement Association (LACERA) appreciates the opportunity to submit comments in response to the Securities and Exchange Commission's (SEC or Commission) March 15, 2021, request for market input regarding corporate disclosures of financial risks and opportunities related to climate change and prospective further regulatory guidance.[1] We welcome the Commission's solicitation of feedback on "whether climate change disclosures adequately inform investors about known material risks, uncertainties, impacts, and opportunities," and whether climate-related disclosure requirements should be "one component of a broader ESG disclosure framework."[2] The Commission's attention to the reliability, consistency, and investment-usefulness of climate and environmental, social, and governance (ESG) disclosures is timely given market developments over the decade since the SEC's 2010 guidance on climate change reporting.[3]

LACERA is the largest county pension system in the United States, with approximately $70 billion in plan assets, as of May 31, 2021, including equity holdings in about 2,400 U.S. companies. LACERA's mission is "to produce, protect, and provide the promised benefits" for over 170,000 beneficiaries who serve the most populous county in the nation. We encourage public policies governing financial markets that promote sustainable value to enhance our ability to fulfill our mission.

Our comments to the Commission are guided by the investment beliefs and principles outlined in LACERA's *Investment Policy Statement*[4] and *Corporate Governance and Stewardship Principles*.[5] First, LACERA recognizes that ESG factors may shape the risk-return profile and financial performance of our investments and that material ESG factors may vary by the nature of a company's business strategy, industry, and geography, as well as investment time horizons.[6] Second, we

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[1] U.S. Securities and Exchange Commission. "Public Input Welcomed on Climate Change Disclosures." March 15, 2021. Available at: https://www.sec.gov/news/public-statement/lee-climate-change-disclosures.
[2] ibid.
[3] U.S. Securities and Exchange Commission. "Commission Guidance Regarding Disclosures Related to Climate Change." February 2, 2010. Available at: https://www.sec.gov/rules.interp/2010/33-9106.pdf.
[4] LACERA. Investment Policy Statement. December 11, 2019. Available at: https://www.lacera.com/BoardResourcesWebSite/BoardOrientationPDF/policies/invest_policy_stmt.pdf.
[5] LACERA. *Corporate Governance and Stewardship Principles.* March 2021. Available at: http://www.lacera.com/BoardResourcesWebSite/BoardOrientationPdf/policies/CorpGovPrinciples.pdf.
[6] LACERA. Investment Policy Statement. Revised December 11, 2019. Available at: https://www.lacera.com/BoardResourcesWebSite/BoardOrientationPDF/policies/invest_policy_stmt.pdf.

recognize that climate change in particular presents financial risks and opportunities for both individual portfolio companies as well as to the broader economy in which we invest.[7] Third, we consider that financial markets work most efficiently when investors have timely, reliable, and comparable information about material aspects of a firm's performance, including how they manage climate-related and broader ESG factors. Transparency of a firm's key financial and operating performance is critical for investors to assess a firm's financial viability and prospects for creating and sustaining financial value. And lastly, as a diversified, global investor with exposures in over 65 global markets, it is an integral component of our fiduciary duty to identify, diversify, and mitigate known investment risks in our portfolio. To the extent that a risk is not expected to be rewarded over the long-term or mitigated through diversification, LACERA endeavors to minimize it. Adequate information to identify and assess risks is of paramount importance to fulfill our fiduciary duty.

Consistent with the above, reliable disclosures on all material performance and risk indicators are critical to LACERA's investment process. We rely on companies to assess and disclose material risks so that they may pursue suitable, resilient business strategies and so that we as investors may adequately price risks and inform investment decisions. In recent years, we have incorporated climate and ESG data – to the extent it is available and reliable – into strategic asset allocation models, total fund portfolio analytics, and asset manager selection and monitoring, to highlight financial risks and opportunities and pursue deliberate strategies in line with our investment objectives.

However, current market disclosures of climate and ESG factors lack consistency, comparability, reliability, and often availability. By way of example, only 40% of LACERA's public market holdings disclose carbon emissions. Emissions are a critical baseline data point for further investment analysis, such as stress testing and scenario analyses of forward-looking investment risks, including prospective impacts related to a transition to a low-carbon economy and climate-related public policies. Emissions disclosures are more scant in private markets, where despite numerous efforts—such as investor demand, mandatory disclosures in some markets, and select industry-led initiatives (such as the Global Real Estate Sustainability Benchmark, or GRESB[8])—reporting remains incomplete and inconsistent.

Given piecemeal industry reporting, LACERA procures emissions and other climate-related data from multiple third party vendors in order to assess climate-related investment risks. These vendors model and estimate climate-related exposures for publicly-listed companies, such as scope 1, 2, and 3 carbon emissions. LACERA uses several data providers to mitigate the margin of error inherent in estimations, versus directly reported and assured corporate disclosures.

Third party data modelling is a suboptimal market solution for disclosure of material risks. It imposes expenses on capital providers and may privilege institutional investors with adequate resources over retail investors who may lack resources to access similar data points. Democratizing access to meaningful climate and ESG data could benefit all investors by equitably availing market information for investment analysis and decisions. Furthermore, facilitating comparable,

[7] LACERA's *Corporate Governance and Stewardship Principles,* page 24.
[8] Global Real Estate Sustainability Benchmark at https://gresb.com.

consistent, and timely data on material performance indicators, such as climate, can strengthen market efficiency and facilitate capital formation, in line with the SEC's mission and to investors' benefit, including diversified asset owners such as public pension plans.

LACERA has actively advocated policy and industry efforts to improve availability of material disclosures. LACERA formally endorsed the Task force on Climate-related Financial Disclosures (TCFD)[9] in 2018 and is a formal signatory to the Global Investor Statement to Governments on Climate Change,[10] which urges governments to facilitate climate-related corporate reporting. LACERA is a member of the Investor Advisory Group of the Sustainability Accounting Standards Board (SASB),[11] which has promulgated material, industry-led ESG reporting standards for 77 industries, among which climate factors are among the most prominent across industries. LACERA is active in the Climate Action 100+ to urge climate risk reporting and emissions reductions at 160 of the most carbon-intensive global companies, which collectively account for an estimated 80% of global industrial emissions and about half of LACERA's public market Scope 1 and 2 carbon footprint.[12]

The SEC can play a constructive role in facilitating better corporate disclosures of climate and ESG data. In the SEC's stated effort to "evaluate our disclosure rules with an eye toward facilitating the disclosure of consistent, comparable, and reliable information," LACERA suggests the Commission give consideration to the following suggestions:

1. Mandatory Disclosures of Baseline Climate, Human Capital, and Corporate Political Spending Information

The SEC should facilitate reporting of a select number of key, broadly applicable climate and ESG metrics that enable investors to assess individual registrant performance and exposures, as well as to evaluate systemic market risks:

- *Climate Change*: Core metrics like greenhouse gas emissions are a foundational building block to identify concentrated risks and conduct portfolio analysis. Voluntary reporting to date has been too slow to yield consistent, comparable data for investor use.

- *Human Capital*: LACERA reiterates the positions articulated in our October 22, 2019, letter to the SEC encouraging the Commission to require both principles-based and rules-based disclosures of core human capital metrics.[13] Certain consistent, universally applicable metrics would facilitate a base level of disclosures and comparability on matters such as workforce composition and

[9] Task Force on Climate-Related Financial Disclosures. https://www.fsb-tcfd.org.
[10] 2021 Global Investor Statement to Governments on the Climate Crisis. https://www.lacera.com/investments/corporate_governance/global_investor_statement_climate_crisis.pdf.
[11] Sustainability Accounting Standards Board. https://www.sasb.org.
[12] Climate Action 100+. https://www/climateaction100.org.
[13] LACERA. Letter to the U.S. Securities and Exchange Commission regarding Regulation S-K and enhanced human capital disclosures. October 19, 2019. https://www.lacera.com/investments/corporate_governance/lacera_letter_to_sec.pdf

structure (such as the number of full-time, part-time, and contingent workers, as well as diversity data consistent with the Equal Employment Opportunity Commission's EEO-1 reporting, where permissible), indicators of workforce stability (such as turnover), and data points enabling investors to assess a registrant's return on human capital investments.

- *Corporate Political Spending*: Corporate expenditures on elections and lobbying should be consistent with the interests of a firm and its investors. While engagement with policymakers may benefit investors by shaping effective policies, using corporate treasury monies in the political arena also creates certain compliance, legal, reputational, and operational risks for companies. LACERA has long called on portfolio companies to ensure board oversight and full transparency of all political and lobbying expenditures. Transparency promotes accountability that any expenditures are in line with investors' interests. However, market disclosures remain piecemeal and incomplete. While companies may disclose some categories of spending – such as direct candidate expenditures and political spending through trade associations – they often omit any spending via organizations which are not legally required to be disclosed. Pocketed reporting risks creating an incentive for significant expenditures to be funneled through undisclosed channels, such as organizations registered under IRS Code 501(c)(4). LACERA supports complete and thorough reporting and believes the SEC should require comprehensive reporting for all corporate assets spent on political activities.

2. Leverage and Facilitate Market Adoption of ESG Reporting Consistent with Standards Promulgated by an Independent Standards-Setting Organization (or Organizations)

LACERA recognizes that financially-relevant ESG factors may vary by a company's business strategy, industry, geography, and investment time horizon. Moreover, materiality may be dynamic, in that new financially-impactful factors may emerge, such as cybersecurity and ransomware, as well as global health threats like the COVID-19 pandemic.

In addition to the core climate and ESG metrics outlined above, the SEC should leverage significant industry-led initiatives and provide guidance to facilitate market reporting consistent with recognized, independent, industry-led standard-setting bodies, such as SASB and the TCFD. Suitable independent standard setters are positioned to maintain regular market input on dynamic ESG metrics and consider industry variations in materiality, where appropriate.

3. Global Harmonization

LACERA is a global investor with investment exposures in over 65 markets. About a quarter of our assets are invested with entities domiciled outside of the U.S. Among the U.S. domiciled firms, many portfolio companies have operations in various non-U.S. markets.

As global investors, we encourage the Commission to consider effective measures to harmonize any forthcoming regulatory guidance with significant international efforts to establish ESG reporting standards, such as the current effort by the International Financial Reporting Standards (IFRS) Foundation.[14]

4. Assurance and Verification

The SEC should give consideration to effective measures to promote the credibility and reliability of climate and ESG disclosures, and mitigate the risks of "window dressing" or "green washing." We find helpful narrative descriptions of methodologies employed, references to any standards used to guide calculations, and "comply or explain" approaches of whether disclosures have been assured and verified.

5. Safe Harbors

Methodologies for calculating some climate and ESG metrics are nascent and evolving. We recognize market participants may seek safe harbors from legal liabilities for ESG reporting. In considering any prospective safe harbors, we encourage the SEC to carefully study and assess the prospective impact of safe harbors to avoid unintended consequences which may undermine the reliability and investment-usefulness of disclosures.

…

We commend the Commission for soliciting market input. We reiterate our belief that the Commission's review of the current effectiveness and availability of disclosures related to climate change and broader ESG factors is timely and wholly in line with the SEC's mission to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation.

Please contact the undersigned at 1 (626) 564-6000 or jgrabel@lacera.com if you would like to further discuss any of the above remarks.

Sincerely,

Jonathan Grabel
Chief Investment Officer

CC: The Honorable Gary Gensler, Chair
The Honorable Caroline A. Crenshaw, Commissioner
The Honorable Allison Herren Lee, Commissioner
The Honorable Hester Peirce, Commissioner
The Honorable Elad L. Roisman, Commissioner

[14] IFRS Foundation. https://www.ifrs.org.

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FOR INFORMATION ONLY

June 17, 2021

TO: Trustees – Board of Investments

FROM: Jude Pérez
Principal Investment Officer

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **OPEB MASTER TRUST - INVESTMENT POLICY STATEMENT UPDATE**

At the July 2020 Board of Investments ("BOI") meeting, staff presented a plan to update the Investment Policy Statement ("IPS") for the OPEB Master Trust ("OPEB Trust"). It was communicated that the OPEB Trust IPS would reflect the framework, format, and design of the revised Pension Plan IPS approved by the Board in November 2018. In addition, staff noted that any updates resulting from Board-approved changes from the OPEB Trust SAA would be incorporated and brought to the Board within a few months following the OPEB SAA recommendation. Staff anticipates providing Trustees the revised OPEB IPS within the next couple of Board meetings.

For your reference, the presentation that staff provided to the Board last year is attached to this memo (**Attachment)**.

Attachment

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JP:EDB

ATTACHMENT

OPEB Master Trust Investment Policy Statement Update Review

LACERA Investments
July 8, 2020

Jude Pérez - Principal Investment Officer
Esmeralda V. del Bosque – Senior Investment Officer

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Table of Contents

Review of Project Objectives and Rationale

IPS should serve as unified source for fundamental guidance of the OPEB Master Trust investment program

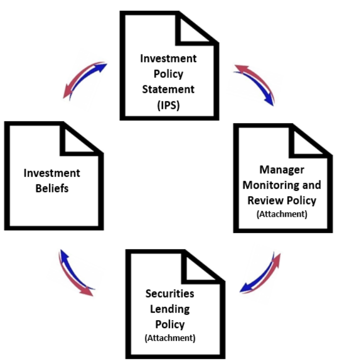
1. **Enhance clarity of fund objectives and policy**
   - Elevate IPS and affirm as primary guiding document
   - Incorporate key aspects of investment program in line with best practices (e.g. risk)
   - Improve accessibility of the investment policy
     - into a streamlined document
     - for all stakeholders (current and new Board and staff members, service providers, and plan constituents)

2. **Extract, unify, and harmonize procedural guidance**
   - Continue to consolidate investment procedures into a “Procedural Manual”
   - OPEB Master Trust (“OPEB”) possesses its own procedural manual separate from the pension plan

3. **Revise OPEB IPS in parallel with the upcoming Strategic Asset Allocation study; the updated IPS will be presented to the Board shortly after the OPEB asset allocation is approved**

Using the Pension Plan IPS as a Model

Summary of Policy Structure



Elevate IPS as the OPEB's primary guiding policy

OPEB Investment Policy Statement (IPS)

Incorporating attachments and new language, such as:

- Risk Policy
- Investment Beliefs
- Legal Authority
- Functional Categories

Continue buildout of a centralized binder of procedures describing how to implement governing IPS statements

Comprehensive OPEB Investment Procedural Manual

Prospective Outline

I. Purpose of Manual

II. Asset Class Specific Procedures and Guidelines

III. Glossary and Definitions

Using the Pension Plan IPS as a Model
Comprehensive Process and Inputs

The Pension Plan IPS update process was comprehensive

- Numerous staff presentations & discussion on IPS versions with the BOI
  - July 2018 Offsite
  - September 2018
  - October 2018
  - November 2018 – IPS Approved including 21 requested edits that were incorporated in final draft

The Pension Plan IPS was derived from many sources and inputs

- CFA Institute template and guidance
- Review of peer plans' IPS statements
- Investment office working group
- Meketa template and discussions
- Legal Office consultation

Suggested Revisions for the OPEB IPS:
Table of Contents

Previous Version

- Introduction
- Investment Goals
- Asset Allocation Policy
- Asset Allocation Rebalancing Policy
- Performance Objectives & Strategy and Guidelines
- Investment Management Policies
- Duties of Responsible Parties
- Tables
  - Table 1: Correlation Matrix
  - Table 2: Ten-year Annualized Return and Volatility Expectations
- List of Attachments

OPEB Investment Procedures Manual

Updated Version

About LACERA

Statement of Purpose

WHY IPS exists, under what legal authority, and BOI's oversight

Investment Policy

I. Investment Philosophy and Strategy

WHAT LACERA's investment program *is*

II. Investment Process

HOW LACERA's investment program *is implemented*

III. Roles and Responsibilities

WHO has which key delegated authorities

Appendix

- Investment Tables
  - Table 1: Approved Asset Allocation
  - Table 2: Benchmark Table
  - Table 3: Ten-Year Annualized Return and Volatility Expectations
  - Table 4: Correlation Matrix
  - CIO Delegated Authorities

List of Attachments

- Corporate Governance Principles
- Corporate Governance Policy

Suggested Revisions for the OPEB IPS:
High-Level Overview of Pertinent Changes

The six items listed below describe significant changes to the OPEB IPS

Mirror changes adopted for the Pension IPS in order to:

- advance the organization's IPS to be in line with industry best practices
- improve its utility and accessibility

Item Changed	Detail
1. Investment Beliefs	Elevated to first section of IPS
2. Legal Authority	Added section per recommendation of LACERA Counsel
3. Risk Policy	Revised and moved to the body of the IPS; no longer a separate document
4. Roles and Responsibilities	BOI Powers Reserved previously not referenced; BOI is named fiduciary
5. Procedural Language Relocated	Sections will be consolidated into a procedural manual (Prohibited Transactions, Manager Selection/Termination Criteria, Securities Lending)
6. Diversity & Inclusion	Elevated Diversity & Inclusion language as a dedicated section

Proposed Timeline

July 2020

BOI Project Overview

Preview OPEB Master Trust IPS structure, mirroring Pension Plan IPS with Trustees

3Q-4Q 2020

OPEB IPS Updates

Update OPEB IPS with the relevant Pension IPS language, structure, and format

1Q 2021

OPEB SAA Recommendation

OPEB Strategic Asset Allocation presented to the BOI

1Q-2Q 2021

Final OPEB IPS To BOI

Revised OPEB IPS, reflecting approved SAA changes presented to the Board for approval

Questions & Answers

LACERA

FOR INFORMATION ONLY

July 6, 2021

TO: Trustees – Board of Investments

FROM: Vache Mahseredjian, CFA, CAIA, FRM, ASA VM
Principal Investment Officer

Chad Timko, CFA, CAIA CT
Senior Investment Officer

Quoc Nguyen, CFA
Investment Officer

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **POLAR ASSET MANAGEMENT UPDATE REGARDING CRIMINAL AND SEC ACTIONS AGAINST TRADER**

BACKGROUND AND UPDATE

Polar Asset Management ("Polar") is a Canadian-based multi-strategy hedge fund with approximately $7B in net assets under management that was founded in 1991. As part of our risk mitigating hedge fund portfolio, LACERA made two investments with the firm - $300M in May 2020 and $75M in April 2021. LACERA's investment value is currently about $465M.

LACERA was informed by Polar on Friday, July 2nd that, Sean Wygovsky, a trader employed at Polar since 2013, was charged by the U.S. Attorney's Office in the Southern District of New York with securities fraud and wire fraud in connection with his scheme to steal confidential information about trade orders from his employer. Polar stated that it had notified LACERA within hours of learning about the allegations made against Wygovsky by the Department of Justice. Wygovsky is accused of front-running over 700 transactions that netted him and his relatives more than $3.6M in illegal profits from approximately January 2015 to April 2021. On July 2nd, Wygovsky was arrested in Austin, TX, and presented before a U.S. Magistrate Judge, and the U.S. Securities and Exchange Commission announced a parallel action asserting fraud charges against Wygovsky. The Department of Justice press release, **Attachment 1**, and SEC press release, **Attachment 2**, are provided. These attached documents do not identify Polar by name, and Polar is not a party to the action.

On July 2nd, Polar made a comment to the Wall Street Journal as follows: "Today Polar learned of disturbing allegations against one of its employees. The alleged behavior is inconsistent with the values that Polar has developed over its 30-year history. Polar is fully-cooperating with authorities."

Along with Albourne Partners, LACERA's hedge funds consultant, we will fully investigate this matter promptly in keeping with our fiduciary duty. This memo is written to provide notification of the matter and assist the Board in the performance of its fiduciary duty. Additional time is needed to deliberate available options before reaching any potential recommendation.

Attachments

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

United States Department of Justice

THE UNITED STATES ATTORNEY'S OFFICE
SOUTHERN DISTRICT of NEW YORK

U.S. Attorneys » Southern District of New York » News » Press Releases

Department of Justice

U.S. Attorney's Office

Southern District of New York

FOR IMMEDIATE RELEASE Friday, July 2, 2021

Trader At Large Canadian Asset Management Firm Charged With Insider Trading For Engaging In Multimillion-Dollar Front Running Scheme

Sean Wygovsky Stole Confidential Trade Information from His Employer to Place Hundreds of Timely, Profitable Trades in Years-Long Scheme

Audrey Strauss, the United States Attorney for the Southern District of New York, and William F. Sweeney Jr., the Assistant Director-in-Charge of the New York Field Office of the Federal Bureau of Investigation ("FBI"), announced today that SEAN WYGOVSKY, a trader at a large Canadian asset management firm (the "Employer Firm"), was charged in a Complaint in Manhattan federal court with securities fraud and wire fraud in connection with his scheme to steal confidential information about the trade orders of the Employer Firm in order to conduct hundreds of timely, profitable personal securities trades in the same stocks as the Employer Firm. WYGOVSKY attempted to hide his conduct by trading or causing trading in brokerage accounts held in the names of his close relatives. WYGOVSKY was arrested this morning in Austin, Texas, and is expected to be presented in federal court this afternoon before a U.S. Magistrate Judge for the Western District of Texas.

Manhattan U.S. Attorney Audrey Strauss said: "As alleged, Sean Wygovsky illegally exploited his access to his employer firm's yet-to-be-executed trade orders to make numerous trades in anticipation of the bump or dip the firm's buying or selling would cause. To conceal the scheme, Wygovsky allegedly made his front running trades through brokerage accounts of certain of his relatives. As alleged, Wygovsky made or directed over 700 timely transactions that netted him more than $3.6 million in illegal profits. Now Sean Wygovsky is in custody and facing serious criminal charges."

FBI Assistant Director William F. Sweeney Jr. said: "Over the course of several years, as alleged, Wygovsky made hundreds of short-term trades based on inside information that ultimately reaped more than $3 million in profits. Schemes like the one alleged here grossly affect the integrity of our financial markets and remain a top priority for our financial fraud investigative teams."

As alleged in the Complaint unsealed today in Manhattan federal court:[1]

SEAN WYGOVSKY has been employed at the Employer Firm since approximately 2013. The Employer Firm is an asset management firm based in Toronto, Canada, with at least approximately $19 billion in assets under management. WYGOVSKY has a number of close relatives who live in the United States, including a relative in North Carolina ("Relative-1") and two relatives in Virginia ("Relative-2" and Relative-3") who are married to each other.

The Front Running Scheme

Based on his position as a trader at the Employer Firm, WYGOVSKY had access to the trade information and trade orders of the Employer Firm. Like most large asset managers, the Employer Firm had rules and regulations concerning employees' personal trading, including requirements about the confidentiality of client information and prohibitions against insider trading and personal trading in the same securities as the Employer Firm. The size of the Employer Firm's trade orders often caused slight, temporary movements in the price of the securities traded. For example, if the Employer Firm engaged in a large purchase of stock, the increased demand could cause a slight rise in the stock price, and if the Employer Firm engaged in a large sale of stock, the increased supply could cause a slight drop in the stock price. Because WYGOVSKY had access to the Employer Firm's trade orders, he knew in advance when a particular stock price would move slightly up or down based on that trading.

WYGOVSKY's relatives maintained brokerage accounts for the personal purchase and sale of securities. In particular, Relative-1 maintained at least one brokerage account and Relative-2 and Relative-3 maintained at least four brokerage accounts (the "Subject Accounts"). From at least 2015 through April 2021, after obtaining information about the Employer Firm's upcoming trading activity but before those trades were executed, WYGOVSKY caused the Subject Accounts to buy or sell the same securities the Employer Firm would be buying or selling, in order to profit through the subsequent movement of the stock that would often result from the Employer Firm's trading. WYGOVSKY would then cause the Subject Accounts to exit those positions once the Employer Firm's trading was underway, often within hours of when the Subject Accounts had first entered the positions. For example, if WYGOVSKY knew that the Employer Firm would be buying a particular stock, WYGOVSKY would cause one or more of the Subject Accounts to purchase that stock beforehand in relatively small amounts. Then, as the Employer Firm made relatively large purchases, the stock price would increase and WYGOVSKY would cause the Subject Accounts to sell their holdings at a profit.

At times, WYGOVSKY personally conducted the trading on behalf of both the Employer Firm and the Subject Accounts. For example, on occasion, IP log-ins from the Subject Accounts show the Subject Accounts were being accessed from locations where WYGOVSKY was travelling. On other occasions, WYGOVSKY would cause others to execute the timely, profitable trading in the Subject Accounts. Over an approximately five-year period, WYGOVSKY caused the Subject Accounts to engage in more than 700 such short-term timely, profitable trades, resulting in at least over $3.6 million of profits in the Subject Accounts.

Financial Transfers Back to Wygovsky

During the course of the front running scheme, Relative-2 and Relative-3 caused at least approximately hundreds of thousands of dollars to be sent back to WYGOVSKY from the Subject Accounts. For example, between 2015 and 2020, Relative-2 and Relative-3 moved millions of dollars from the Subject Accounts to bank accounts that they controlled, and wrote checks to WYGOVSKY and his immediate family members for hundreds of thousands of dollars. Furthermore, in or about late 2017 and early 2018, Relative-2 and Relative-3 transferred hundreds of thousands of dollars to a Slovenian bank for the benefit of certain relatives of WYGOVSKY's wife.

* * *

WYGOVSKY, 40, of Ontario, Canada, is charged with one count of securities fraud, which carries a maximum sentence of 20 years in prison, and one count of wire fraud, which carries a maximum sentence of 20 years in prison. The maximum potential sentences in this case are prescribed by Congress and are provided here for informational purposes only, as any sentencing of the defendant will be determined by the judge.

Ms. Strauss praised the work of the FBI. Ms. Strauss further thanked the U.S. Securities and Exchange Commission, which today filed a parallel civil action, for their cooperation and assistance in this investigation.

This case is being handled by the Office's Securities and Commodities Fraud Task Force. Assistant U.S. Attorney Daniel Tracer is in charge of the prosecution.

The allegations contained in the Complaint are merely accusations, and the defendant is presumed innocent unless and until proven guilty.

[1] As the introductory phrase signifies, the entirety of the text of the Complaint, and the description of the Complaint set forth herein, constitute only allegations, and every fact described should be treated as an allegation.

Attachment(s):
Download Sean Wygovsky complaint (21 mag 6663).pdf

Topic(s):
Securities, Commodities, & Investment Fraud

Component(s):
USAO - New York, Southern

Contact:
James Margolin, Nicholas Biase
(212) 637-2600

Press Release Number:
21-161

Updated July 2, 2021

ATTACHMENT 2

Press Release

SEC Charges Hedge Fund Trader in Lucrative Front-Running Scheme

FOR IMMEDIATE RELEASE
2021-118

Washington D.C., July 2, 2021 — The Securities and Exchange Commission today announced fraud charges against Sean Wygovsky, a trader at a major Canada-based asset management firm, in connection with a long-running and lucrative front-running scheme that Wygovsky perpetrated in the accounts of his close family members, netting more than $3.6 million in illicit gains.

According to the SEC's complaint, from approximately January 2015 through at least April 2021, Wygovsky repeatedly traded in his family members' accounts held at brokerage firms in the United States ahead of large trades that were executed on the same days in the accounts of his employer's advisory clients. On over 600 occasions, Wygovsky allegedly bought or sold a stock for one his relatives' accounts either before the client accounts began executing a large order for the same stock on the same side of the market, or during the time period when tranches of such a large order were being executed. Then, typically before the client accounts completed their executions, Wygovsky allegedly closed out the just-established positions in his relatives' accounts, nearly always at a profit.

"As alleged in our complaint, Wygovsky abused his position and his employer's trust by front-running the very securities transactions that he was tasked with executing for his employer's advisory clients," said Joseph G. Sansone, Chief of the SEC Enforcement Division's Market Abuse Unit. "Thanks to the SEC's development and use of sophisticated data analytics tools, Wygovsky's alleged scheme was uncovered and his efforts to evade detection by using family members' accounts failed."

In a parallel action, the U.S. Attorney's Office for the Southern District of New York today announced criminal charges against Wygovsky.

The SEC's complaint, filed in federal court in New York, charges Wygovsky with violating the antifraud provisions of the federal securities laws and seeks disgorgement of ill-gotten gains plus interest, penalties, and injunctive relief.

The SEC's investigation, which is continuing, has been conducted by Ann Marie Preissler, John D. Marino, John Rymas, and Simona Suh of the Market Abuse Unit and Melissa Coppola of the New York Regional Office. The case has been supervised by Mr. Sansone. The SEC's litigation will be led by Ms. Preissler and Ms. Suh. The SEC appreciates the assistance of the U.S. Attorney's Office for the Southern District of New York and the Federal Bureau of Investigation.

###

Related Materials

- SEC Complaint

FOR INFORMATION ONLY

July 2, 2021

TO: Each Trustee
Board of Investments

FROM: Michael D. Herrera
Senior Staff Counsel

FOR: Board of Investments Meeting of July 14, 2021

SUBJECT: U.S. Supreme Court Decision in *Goldman Sachs Group, Inc. v. Arkansas Teachers Retirement System.*

Last month the U.S. Supreme Court issued its long-awaited decision in *Goldman Sachs Group, Inc. v. Arkansas Teachers Retirement System,* which reaffirmed (and for all intents and purposes left intact) the "fraud on the market" presumption — a presumption that has long been a crucial and valuable tool for investors seeking to prove reliance on a class-wide basis in a securities fraud case. A copy of the Supreme Court's decision is attached for your information.

By way of brief background, the investor plaintiffs in the case alleged that Goldman's statements about adhering to high ethical standards when managing conflicts of interests were false and misleading when made, which caused the price for Goldman's stock to be artificially inflated during a four-year period from 2006 to 2010. At issue before the Supreme Court was whether generic statements made by Goldman had a "price impact" on its share prices because those allegedly false statements involved a key aspect of Goldman's success – namely, its reputation for integrity and its purportedly robust conflict-of-interests controls, both of which helped. Goldman's shares trade at a premium to those of its peers.

In its decision delivered by Justice Amy Coney Barrett, the Supreme Court ruled in plaintiffs' favor in holding that defendants *do* bear the ultimate burden of persuasion as to price impact and refused to overturn the trial court's decision to certify the class. In addressing the issue, the Court reiterated the fundamental importance of the fraud on the market presumption to establish reliance under the federal securities laws. However, because it was unclear from the record whether the Second Circuit had properly considered the generic nature of Goldman's alleged misrepresentations in reviewing the issue of price impact, the Supreme Court vacated the Second Circuit's judgment and remanded for the latter court's determination as to that discrete question.

While not a game-changer, we believe the decision is an overall net positive for defrauded investors seeking to hold corporate wrongdoers accountable on a class-wide basis. This is because it largely affirms the current state of the law and recognizes a plaintiff's rights to invoke the fraud on the market presumption, and correctly keeps the burden of persuasion for rebuttal of that presumption on the defendants.

Reviewed and Approved:

Steven P. Rice
Chief Counsel

Attachment

cc: Santos H. Kreimann
JJ Popowich
Jonathan Grabel

MDH/IS
L:Legal/seclit/BOI Memo re Goldman Sachs Decision_070221

Syllabus

SUPREME COURT OF THE UNITED STATES

Syllabus

GOLDMAN SACHS GROUP, INC., ET AL. *v.* ARKANSAS TEACHER RETIREMENT SYSTEM, ET AL.

CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

No. 20–222. Argued March 29, 2021—Decided June 21, 2021

Respondent shareholders (Plaintiffs) filed this securities-fraud class action alleging that The Goldman Sachs Group, Inc., and certain of its executives (collectively, Goldman) violated securities laws and regulations prohibiting material misrepresentations and omissions in connection with the sale of securities. 15 U. S. C. §78j(b); 17 CFR §240.10b–5. Plaintiffs allege that Goldman maintained an artificially inflated stock price by repeatedly making false and misleading generic statements about its ability to manage conflicts. Under Plaintiffs' inflation-maintenance theory, Goldman's alleged misrepresentations caused its stock price to remain inflated until the market reacted to the truth about Goldman's practices—at which point Goldman's stock price dropped and Plaintiffs suffered losses. Seeking to certify a class of Goldman shareholders harmed by reliance on Goldman's alleged misrepresentations, Plaintiffs invoked the presumption, endorsed by the Court in *Basic Inc*. v. *Levinson*, 485 U. S. 224, that investors are presumed to rely on the market price of a company's security, which in an efficient market will reflect all of the company's public statements, including misrepresentations. The *Basic* presumption allows class-action plaintiffs to prove reliance through evidence common to the class. Goldman in turn sought to defeat class certification by rebutting the *Basic* presumption through evidence that its alleged misrepresentations had no impact on its stock price. After an initial round of litigation which resulted in a remand from the Second Circuit, the District Court certified the class based on Goldman's failure to establish by a preponderance of the evidence that its alleged misrepresentations had no price impact. The Second Circuit authorized an appeal under Federal Rule of Civil Procedure 23(f), and affirmed in a divided decision, finding that the District Court's price impact determination was not an abuse of discretion. Goldman now argues that the Second Circuit erred twice: first, by holding that the generic nature of Goldman's alleged misrepresentations is irrelevant to the price impact inquiry; and second, by assigning Goldman the burden of persuasion to prove a lack of price impact.

Held:

1. The generic nature of a misrepresentation often is important evidence of price impact that courts should consider at class certification, including in inflation-maintenance cases. That is true even though the same evidence may be relevant to materiality, an inquiry reserved for the merits phase of a securities-fraud class action. See *Amgen Inc.* v. *Connecticut Retirement Plans and Trust Funds*, 568 U. S. 455. A court has an obligation before certifying a class to determine that Rule 23 is satisfied, *Comcast Corp*. v. *Behrend*, 569 U. S. 27, 35, and a court cannot make that finding in a securities-fraud class action without considering all evidence relevant to price impact. See *Halliburton Co.* v. *Erica P. John Fund, Inc.*, 573 U. S. 258, 284 (*Halliburton II*). The parties now accept this legal framework but dispute whether the Second Circuit properly considered the generic nature of Goldman's alleged misrepresentations. Because the Court concludes that the Second Circuit's opinions leave sufficient doubt on this question, the Court remands for the Second Circuit to consider all record evidence relevant to price impact, regardless whether that evidence overlaps with materiality or any other merits issue. Pp. 6–9.

2. Defendants bear the burden of persuasion to prove a lack of price impact by a preponderance of the evidence at class certification. The Court has held that nothing in Federal Rule of Evidence 301 constrains the Court's authority to change customary burdens of persuasion under a federal statute, see *NLRB* v. *Transportation Management Corp.*, 462 U. S. 393, 404, n. 7, and the Court has exercised this authority to reassign the burden of persuasion to the defendant in other contexts. Goldman does not challenge the Court's relevant precedents, but questions whether the Court exercised this authority in establishing the *Basic* framework pursuant to the securities laws. The Court concludes that *Basic* and *Halliburton II* did allocate to defendants the burden of persuasion to prove a lack of price impact. As relevant here, *Basic* explains that defendants may rebut the presumption of reliance if they "*show* that the misrepresentation *in fact* did not lead to a distortion of price" by making "[a]ny *showing* that *severs the link* between the alleged misrepresentation and . . . the price received (or paid) by the plaintiff." 485 U. S., at 248 (emphasis added). Similarly, *Halliburton II* held that defendants may rebut the *Basic* presumption at class cer-

tification "by *showing* . . . that the particular misrepresentation at issue did not affect the stock's market price." 573 U. S., at 279 (emphasis added). These references to a defendant's "showing" require a defendant to do more than produce some evidence relevant to price impact; the defendant must "in fact" "seve[r] the link" between a misrepresentation and the price paid by the plaintiff. Moreover, *Halliburton II*'s holding that plaintiffs need not directly prove price impact to invoke the *Basic* presumption, 573 U. S., at 278–279, would be negated in almost every case if a defendant could shift the burden of persuasion to the plaintiffs by mustering any competent evidence of a lack of price impact (including, for example, the generic nature of the alleged misrepresentations). Thus, the best reading of the Court's precedents assigns defendants the burden of persuasion to prove a lack of price impact by a preponderance of the evidence. Even so, that allocated burden will be outcome determinative only in the rare case in which the evidence is in perfect equipoise. Pp. 9–12.

955 F. 3d 254, vacated and remanded.

BARRETT, J., delivered the opinion of the Court, in which ROBERTS, C. J., and BREYER, KAGAN, and KAVANAUGH, JJ., joined in full; in which THOMAS, ALITO, and GORSUCH, JJ., joined as to Parts I and II–A; and in which SOTOMAYOR, J., joined as to Parts I, II–A–1, and II–B. SOTOMAYOR, J., filed an opinion concurring in part and dissenting in part. GORSUCH, J., filed an opinion concurring in part and dissenting in part, in which THOMAS and ALITO, JJ., joined.

SUPREME COURT OF THE UNITED STATES

No. 20–222

GOLDMAN SACHS GROUP, INC., ET AL., PETITIONERS *v.* ARKANSAS TEACHER RETIREMENT SYSTEM, ET AL.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

[June 21, 2021]

JUSTICE BARRETT delivered the opinion of the Court.

This case involves a securities-fraud class action filed by several pension funds against The Goldman Sachs Group, Inc., and three of its former executives (collectively, Goldman). Plaintiffs allege that Goldman maintained an artificially inflated stock price by making generic statements about its ability to manage conflicts—for example, "We have extensive procedures and controls that are designed to identify and address conflicts of interest." Plaintiffs say that Goldman's generic statements were false or misleading in light of several undisclosed conflicts of interest, and that once the truth about Goldman's conflicts came out, Goldman's stock price dropped and shareholders suffered losses.

Below, this securities-fraud class action proceeded in typical fashion. Plaintiffs sought to certify a class of Goldman shareholders by invoking the presumption endorsed by this Court in *Basic Inc.* v. *Levinson*, 485 U. S. 224 (1988). The *Basic* presumption is premised on the theory that investors rely on the market price of a company's security, which in an efficient market incorporates all of the company's public misrepresentations. For its part, Goldman sought to defeat class certification by rebutting the *Basic* presumption through evidence that its alleged misrepresentations actually had no impact on its stock price. After determining that Goldman had failed to carry its burden of proving a lack of price impact, the District Court certified the class, and the Second Circuit affirmed.

In this Court, Goldman argues that the Second Circuit erred twice: first, by holding that the generic nature of its alleged misrepresentations is irrelevant to the price impact inquiry; and second, by assigning Goldman the burden of persuasion to prove a lack of price impact.

On the first question, the parties now agree, as do we, that the generic nature of a misrepresentation often is important evidence of price impact that courts should consider at class certification. Because we conclude that the Second Circuit may not have properly considered the generic nature of Goldman's alleged misrepresentations, we vacate and remand for the Court of Appeals to reassess the District Court's price impact determination. On the second question, we agree with the Second Circuit that our precedents require defendants to bear the burden of persuasion to prove a lack of price impact by a preponderance of the evidence. We emphasize, though, that the burden of persuasion should rarely be outcome determinative.

I

A

Section 10(b) of the Securities Exchange Act of 1934 and its implementing regulation, Rule 10b–5, prohibit material misrepresentations and omissions in connection with the sale of securities. 48 Stat. 881, as amended, 15 U. S. C. §78j(b); 17 CFR §240.10b–5 (2020). We have inferred from these provisions an implied private cause of action permitting the recovery of damages for securities fraud. *Halliburton Co.* v. *Erica P. John Fund, Inc.*, 573 U. S. 258, 267

(2014) (*Halliburton II*). To recover damages, a private plaintiff must prove, among other things, a material misrepresentation or omission by the defendant and the plaintiff's reliance on that misrepresentation or omission. *Ibid.*

This case concerns the element of reliance. The "traditional (and most direct) way" for a plaintiff to prove reliance is to show that he was aware of a defendant's misrepresentation and engaged in a transaction based on that misrepresentation. *Ibid.* (internal quotation marks omitted). In *Basic*, however, we held that a plaintiff may also invoke a rebuttable presumption of reliance based on the fraud-on-the-market theory. 485 U. S., at 241–247.

The "fundamental premise" of the fraud-on-the-market theory underlying *Basic*'s presumption is "that an investor presumptively relies on a misrepresentation so long as it was reflected in the market price at the time of his transaction." *Erica P. John Fund, Inc.* v. *Halliburton Co.*, 563 U. S. 804, 813 (2011). To invoke the *Basic* presumption, a plaintiff must prove: (1) that the alleged misrepresentation was publicly known; (2) that it was material; (3) that the stock traded in an efficient market; and (4) that the plaintiff traded the stock between the time the misrepresentation was made and when the truth was revealed. *Halliburton II*, 573 U. S., at 268. The defendant may then rebut the presumption through "[a]ny showing that severs the link between the alleged misrepresentation and either the price received (or paid) by the plaintiff, or his decision to trade at a fair market price." *Basic*, 485 U. S., at 248.

Although the *Basic* presumption "can be invoked by any Rule 10b–5 plaintiff," it has "particular significance in securities-fraud class actions." *Amgen Inc.* v. *Connecticut Retirement Plans and Trust Funds*, 568 U. S. 455, 462 (2013). The presumption allows class-action plaintiffs to prove reliance through evidence common to the class. That in turn makes it easier for plaintiffs to establish the predominance requirement of Federal Rule of Civil Procedure 23, which requires that "questions of law or fact common to class members predominate" over individualized issues. Fed. Rule Civ. Proc. 23(b)(3). Indeed, without the *Basic* presumption, individualized issues of reliance ordinarily would defeat predominance and "preclude certification" of a securities-fraud class action. *Amgen*, 568 U. S., at 462–463; see *Halliburton II*, 573 U. S., at 281–282.

As a result, class-action plaintiffs must prove the *Basic* prerequisites before class certification—with one exception. In *Amgen*, we held that materiality should be left to the merits stage because it does not bear on Rule 23's predominance requirement. 568 U. S., at 466–468. The remaining *Basic* prerequisites—publicity, market efficiency, and market timing—"must be satisfied" by plaintiffs "before class certification." *Halliburton II*, 573 U. S., at 276.

Satisfying those prerequisites, however, does not guarantee class certification. We held in *Halliburton II* that defendants may rebut the *Basic* presumption at class certification by showing "that an alleged misrepresentation did not actually affect the market price of the stock." *Id.,* at 284. If a misrepresentation had no price impact, then *Basic*'s fundamental premise "completely collapses, rendering class certification inappropriate." *Id.,* at 283.

B

Respondents here—whom we'll call Plaintiffs—are Goldman shareholders. They brought this securities-fraud class action against Goldman in the Southern District of New York, alleging violations of §10(b) and Rule 10b–5.

The specific theory of securities fraud that Plaintiffs allege is known as inflation maintenance. Under this theory, a misrepresentation causes a stock price "to *remain* inflated by preventing preexisting inflation from dissipating from the stock price." *FindWhat Investor Group* v.

FindWhat.com, 658 F. 3d 1282, 1315 (CA11 2011).[1]

Plaintiffs allege here that between 2006 and 2010, Goldman maintained an inflated stock price by making repeated misrepresentations about its conflict-of-interest policies and business practices. The alleged misrepresentations are generic statements from Goldman's SEC filings and annual reports, including the following:

- "We have extensive procedures and controls that are designed to identify and address conflicts of interest." App. 216 (emphasis and boldface deleted).
- "Our clients' interests always come first." *Id.,* at 162 (same).
- "Integrity and honesty are at the heart of our business." *Id.,* at 163 (same).

According to Plaintiffs, these statements were false or misleading—and caused Goldman's stock to trade at artificially inflated levels—because Goldman had in fact engaged in several allegedly conflicted transactions without disclosing the conflicts. Plaintiffs further allege that once the market learned the truth about Goldman's conflicts from a Government enforcement action and subsequent news reports, the inflation in Goldman's stock price dissipated, causing the price to drop and shareholders to suffer losses.

After Goldman unsuccessfully moved to dismiss the case, Plaintiffs moved to certify the class, invoking the *Basic* presumption. In response, Goldman sought to rebut the *Basic* presumption by proving a lack of price impact. Both parties submitted extensive expert testimony on the issue.

The District Court certified the class, but the Second Circuit authorized a Rule 23(f) appeal and vacated the class-

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[1] Although some Courts of Appeals have approved the inflation-maintenance theory, this Court has expressed no view on its validity or its contours. We need not and do not do so in this case.

certification order. 879 F. 3d 474 (2018). The Second Circuit held that Goldman, as the defendant, bears the burden of persuasion to prove a lack of price impact by a preponderance of the evidence. But it concluded that the District Court erred by holding Goldman to a higher burden of proof and by refusing to consider some of Goldman's price impact evidence.

On remand, the District Court certified the class again, finding that Goldman's expert testimony failed to establish by a preponderance of the evidence that its alleged misrepresentations had no price impact. The Second Circuit again authorized a Rule 23(f) appeal and this time affirmed in a divided decision. 955 F. 3d 254 (2020). As relevant here, the Court of Appeals held that the District Court's price impact determination was not an abuse of discretion. In dissent, Judge Sullivan concluded that "the generic quality of Goldman's alleged misstatements, coupled with" Goldman's expert testimony, compelled the conclusion that Goldman proved a lack of price impact. *Id.,* at 278–279.

We granted certiorari. 592 U. S. ___ (2020).

II

Goldman argues that the Second Circuit erred in two respects: first, by concluding that the generic nature of alleged misrepresentations is irrelevant to the price impact question; and second, by placing the burden of persuasion on Goldman to prove a lack of price impact. We address these arguments in turn.

A

1

On the first question—whether the generic nature of a misrepresentation is relevant to price impact—the parties' dispute has largely evaporated. Plaintiffs now concede that the generic nature of an alleged misrepresentation often will be important evidence of price impact because, as a rule of thumb, "a more-general statement will affect a security's price less than a more-specific statement on the same question." Brief for Respondents 15; see Tr. of Oral Arg. 6–7, 59, 79. The parties further agree that courts may consider expert testimony and use their common sense in assessing whether a generic misrepresentation had a price impact. See Tr. of Oral Arg. 12, 64. And they likewise agree that courts may assess the generic nature of a misrepresentation at class certification even though it also may be relevant to materiality, which *Amgen* reserves for the merits. See *id.,* at 23, 65.

We share the parties' view. In assessing price impact at class certification, courts "'should be open to *all* probative evidence on that question—qualitative as well as quantitative—aided by a good dose of common sense.'" *In re Allstate Corp. Securities Litig.*, 966 F. 3d 595, 613, n. 6 (CA7 2020) (quoting Langevoort, Judgment Day for Fraud-on-the-Market: Reflection on *Amgen* and the Second Coming of *Halliburton*, 57 Ariz. L. Rev. 37, 56 (2015); emphasis added). That is so regardless whether the evidence is also relevant to a merits question like materiality. As we have repeatedly explained, a court has an obligation before certifying a class to "determin[e] that Rule 23 is satisfied, even when that requires inquiry into the merits." *Comcast Corp.* v. *Behrend*, 569 U. S. 27, 35 (2013); see *Wal-Mart Stores, Inc.* v. *Dukes*, 564 U. S. 338, 351, and n. 6 (2011). And under *Halliburton II*, a court cannot conclude that Rule 23's requirements are satisfied without considering *all* evidence relevant to price impact. See 573 U. S., at 284.[2]

[2] We recognize that materiality and price impact are overlapping concepts and that the evidence relevant to one will almost always be relevant to the other. But "a district court may not use the overlap to refuse to consider the evidence." *In re Allstate*, 966 F. 3d, at 608. Instead, the district court must use the evidence to decide the price impact issue "while resisting the temptation to draw what may be obvious inferences for the closely related issues that must be left for the merits, including

The generic nature of a misrepresentation often will be important evidence of a lack of price impact, particularly in cases proceeding under the inflation-maintenance theory. Under that theory, price impact is the amount of price inflation maintained by an alleged misrepresentation—in other words, the amount that the stock's price would have fallen "without the false statement." *Glickenhaus & Co.* v. *Household Int'l, Inc.*, 787 F. 3d 408, 415 (CA7 2020). Plaintiffs typically try to prove the amount of inflation indirectly: They point to a negative disclosure about a company and an associated drop in its stock price; allege that the disclosure corrected an earlier misrepresentation; and then claim that the price drop is equal to the amount of inflation maintained by the earlier misrepresentation. See, *e.g., id.,* at 413–417; *In re Vivendi, S. A. Securities Litig.*, 838 F. 3d 223, 233–237, 253–259 (CA2 2016).

But that final inference—that the back-end price drop equals front-end inflation—starts to break down when there is a mismatch between the contents of the misrepresentation and the corrective disclosure. That may occur when the earlier misrepresentation is generic (*e.g.,* "we have faith in our business model") and the later corrective disclosure is specific (*e.g.,* "our fourth quarter earnings did not meet expectations"). Under those circumstances, it is less likely that the specific disclosure actually corrected the generic misrepresentation, which means that there is less reason to infer front-end price inflation—that is, price impact—from the back-end price drop.

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The parties do not dispute any of this. They disagree only about whether the Second Circuit properly considered the generic nature of Goldman's alleged misrepresentations.

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materiality." *Id.,* at 609.

Because the Second Circuit's opinions leave us with sufficient doubt on this score, we remand for further consideration.[3] On remand, the Second Circuit must take into account *all* record evidence relevant to price impact, regardless whether that evidence overlaps with materiality or any other merits issue.

B

Goldman also argues that the Second Circuit erred by requiring Goldman, rather than Plaintiffs, to bear the burden of persuasion on price impact at class certification. Goldman relies exclusively on Federal Rule of Evidence 301, which provides in full:

> "In a civil case, unless a federal statute or these rules provide otherwise, the party against whom a presumption is directed has the burden of producing evidence to rebut the presumption. But this rule does not shift the burden of persuasion, which remains on the party who had it originally."

According to Goldman, Rule 301 applies to the *Basic* presumption at class certification, and, as a result, a plaintiff's satisfaction of the *Basic* prerequisites shifts only the burden of *production* to the defendant. Once a defendant discharges that burden by producing any competent evidence of a lack of price impact, Goldman says, the *Basic* presumption is rebutted and the plaintiff must carry the burden of *persuasion* to show price impact.

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[3] Compare 955 F. 3d 254, 268 (2020) ("Whether alleged misstatements are too general to demonstrate price impact has *nothing to do* with the issue of whether common questions predominate over individual ones" (emphasis added)); *id.,* at 270 ("The inflation-maintenance theory does not discriminate between general and specific misstatements"), with 879 F. 3d 474, 485–486 (2018) (correctly requiring the District Court to consider Goldman's price impact evidence notwithstanding overlap with materiality).

We disagree. We have held that Rule 301 "in no way restricts the authority of a court . . . to change the customary burdens of persuasion" pursuant to a federal statute. *NLRB* v. *Transportation Management Corp.*, 462 U. S. 393, 404, n. 7 (1983). And we have at times exercised that authority to reassign the burden of persuasion to the defendant upon a prima facie showing by the plaintiff. See, *e.g., Teamsters* v. *United States*, 431 U. S. 324, 359, and n. 45 (1977); *Franks* v. *Bowman Transp. Co.*, 424 U. S. 747, 772–773 (1976).

Goldman does not ask us to revisit these precedents. So the threshold question here is not whether we have the authority to assign defendants the burden of persuasion to prove a lack of price impact, but instead whether we already exercised that authority in establishing the *Basic* framework pursuant to the securities laws. We conclude that *Basic* and *Halliburton II* did just that.

Basic held that defendants may rebut the presumption of reliance if they "*show* that the misrepresentation *in fact* did not lead to a distortion of price." 485 U. S., at 248 (emphasis added). To do so, *Basic* said, defendants may make "[a]ny *showing* that *severs the link* between the alleged misrepresentation and . . . the price received (or paid) by the plaintiff." *Ibid.* (emphasis added). Similarly, *Halliburton II* held that defendants may rebut the *Basic* presumption at class certification "by *showing* . . . that the particular misrepresentation at issue did not affect the stock's market price." 573 U. S., at 279 (emphasis added).

Goldman and JUSTICE GORSUCH argue that these references to a defendant's "showing" refer to the defendant's burden of production. *Post,* at 6–8 (dissenting opinion) (hereinafter the dissent). On this reading, *Basic* and *Halliburton II* require a defendant merely to offer "evidence that, if believed, would support a finding" of a lack of price impact. *Post,* at 5. But *Basic* and *Halliburton II* plainly require more: The defendant must "in fact" "seve[r] the link" between a misrepresentation and the price paid by the plaintiff—and a defendant's mere production of *some* evidence relevant to price impact would rarely accomplish that feat.[4]

Accepting Goldman and the dissent's argument would also effectively negate *Halliburton II*'s holding that plaintiffs need not directly prove price impact in order to invoke the *Basic* presumption. 573 U. S., at 278–279. If, as they urge, the defendant could defeat *Basic*'s presumption by introducing *any* competent evidence of a lack of price impact—including, for example, the generic nature of the alleged misrepresentations—then the plaintiff would end up with the burden of directly proving price impact in almost every case. And that would be nearly indistinguishable from the regime that *Halliburton II* rejected.

Thus, the best reading of our precedents—as the Courts of Appeals to have considered the issue have recognized—is that the defendant bears the burden of persuasion to prove a lack of price impact. See *Waggoner* v. *Barclays PLC*, 875 F. 3d 79, 99–104 (CA2 2017) ("the phrase '[a]ny showing that severs the link' aligns more logically with imposing a burden of persuasion rather than a burden of production"); *In re Allstate*, 966 F. 3d, at 610–611 ("*Basic* said that '[a]ny showing *that severs the link*' would be sufficient to rebut the presumption, not that mere production of evidence would defeat the presumption" (citation omitted)). We likewise agree with the Courts of Appeals that the defendant must carry that burden by a preponderance of the evidence. See *Waggoner*, 875 F. 3d, at 99; *In re Allstate*, 966 F. 3d, at 610.

Although the defendant bears the burden of persuasion,

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[4] The dissent points out that, as a general rule, presumptions shift only the burden of production. *Post,* at 2–4. We don't disagree, but we read *Basic* and *Halliburton II* as a clear departure from that general rule.

the allocation of the burden is unlikely to make much difference on the ground. In most securities-fraud class actions, as in this one, the plaintiffs and defendants submit competing expert evidence on price impact. The district court's task is simply to assess all the evidence of price impact—direct and indirect—and determine whether it is more likely than not that the alleged misrepresentations had a price impact. The defendant's burden of persuasion will have bite only when the court finds the evidence in equipoise—a situation that should rarely arise. Cf. *Medina* v. *California*, 505 U. S. 437, 449 (1992) (preponderance of the evidence burden matters "only in a narrow class of cases where the evidence is in equipoise").

* * *

The Second Circuit correctly placed the burden of proving a lack of price impact on Goldman. But because it is unclear whether the Second Circuit properly considered the generic nature of Goldman's alleged misrepresentations in reviewing the District Court's price impact determination, we vacate the judgment of the Second Circuit and remand the case for further proceedings consistent with this opinion.

It is so ordered.

SUPREME COURT OF THE UNITED STATES

No. 20–222

GOLDMAN SACHS GROUP, INC., ET AL., PETITIONERS *v.* ARKANSAS TEACHER RETIREMENT SYSTEM, ET AL.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

[June 21, 2021]

JUSTICE SOTOMAYOR, concurring in part and dissenting in part.

I agree with the Court's answers to the questions presented, and I accordingly join Parts I, II–A–1, and II–B of the Court's opinion. Under *Basic Inc.* v. *Levinson*, 485 U. S. 224 (1988), securities plaintiffs may demonstrate reliance by invoking the rebuttable presumption that investors rely on any misrepresentations reflected in a security's market price. *Id.,* at 241–247. The *Basic* presumption is particularly useful to class-action plaintiffs who, without the presumption, ordinarily could not demonstrate that questions common to the class predominate over individual ones. *Ante,* at 3–4. Defendants, for their part, may rebut the *Basic* presumption by demonstrating that the alleged misrepresentations did not in fact affect the security's price. *Ante,* at 3. So-called "price impact" may be disproved with a variety of evidence, alone or in combination. As the Court holds today, one potentially relevant piece of evidence may be the "generic nature" of the misrepresentation. *Ante,* at 6–8.

I do not, however, join the Court's judgment to vacate and remand because I believe the Second Circuit "properly considered the generic nature of Goldman's alleged misrepresentations." *Ante,* at 8. On appeal, Goldman did not contend that the District Court improperly refused to consider the generic nature of the alleged misstatements as evidence of price impact (or lack thereof). Instead, Goldman argued that "general statements, like those challenged here, are incapable of impacting a company's stock price as a matter of law" because they are "'too general to cause a reasonable investor to rely upon them.'" Brief for Appellants in No. 18–3667 (CA2), pp. 43, 46. Goldman reasoned that "the challenged statements are incapable of maintaining inflation in a stock price for the same reasons that those statements are immaterial as a matter of law (as well as fact)." *Id.,* at 48.

The Second Circuit properly rejected Goldman's argument. The court explained that although "Goldman is not formally asking for a materiality test," its proposed rule would "essentially requir[e] courts to ask" at the class-certification stage "whether the alleged misstatements are, in Goldman's words, 'immaterial as a matter of law.'" 955 F. 3d 254, 267 (2020). But "materiality is irrelevant at the Rule 23 stage." *Id.,* at 268 (citing *Amgen Inc.* v. *Connecticut Retirement Plans and Trust Funds*, 568 U. S. 455, 468 (2013)). "If general statements cannot maintain price inflation *because* no reasonable investor would have relied on them, then the question of inactionable generality is common to the class." 955 F. 3d, at 268.

In declining to adopt Goldman's proposed rule that generic misstatements cannot have a price impact (as a matter of law), the Second Circuit nowhere held that the generic nature of an alleged misstatement could not serve as evidence of price impact (as a matter of fact). Nor did the Second Circuit refuse to consider such evidence in affirming the District Court's finding that Goldman failed to rebut the *Basic* presumption. The Court nevertheless reads a handful of sentences in the Second Circuit's opinion to create "doubt" over whether the Court of Appeals refused to consider "*all* record evidence relevant to price impact." *Ante,* at 9; see also *ante,* at 9, n. 3. But such statements must be viewed in the context of Goldman's now-abandoned argument that generic misrepresentations have no price impact as a matter of law. Take, for example, the Second Circuit's statement that "[w]hether alleged misstatements are too general to demonstrate price impact has nothing to do with the issue of whether common questions predominate over individual ones." 955 F. 3d, at 268. Fairly read in light of Goldman's appellate briefing, that sentence addresses only Goldman's argument that general statements are always *per se* irrelevant. That is why the Second Circuit observed several sentences later that "Goldman's test is materiality by another name." *Ibid.* At the same time, the court was careful to emphasize that defendants "may attempt to disprove [price impact] at class certification" even though the inquiry "resembles materiality."* *Id.,* at 267.

In short, the Second Circuit did not address whether the generic nature of a misstatement may be used as evidence to disprove price impact for a simple reason: Goldman identified no error in the District Court's treatment of such evidence. Goldman did not press the argument in the Second Circuit that it now urges here, and the Second Circuit did not reject the proposition that this Court now adopts. Thus, the argument Goldman seeks to press on remand is unpre-

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*Indeed, in a prior appeal in this case, an earlier Second Circuit panel vacated an order of the District Court in part because it had refused to consider price-impact evidence that overlapped with materiality. See 879 F. 3d 474, 486 (2018) (holding that "[a]lthough price impact touches on materiality, which is not an appropriate consideration at the class certification stage," courts nonetheless must consider evidence regarding "[w]hether a misrepresentation was reflected in the market price at the time of the transaction"). It is hard to imagine that the Second Circuit here was unaware of (or intended to depart from) the prior panel's holding.

served, and nothing in the Second Circuit's opinion misstates the law. Because affirmance is appropriate under these circumstances, I respectfully dissent from Part II–A–2 of the Court's opinion and from the judgment of the Court.

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[June 21, 2021]

JUSTICE GORSUCH, with whom JUSTICE THOMAS and JUSTICE ALITO join, concurring in part and dissenting in part.

I join all but Part II–B of the Court's opinion. There, the Court holds that the defendant, rather than the plaintiff, "bear[s] the burden of persuasion on price impact." *Ante*, at 9. Respectfully, I disagree.

We start from common ground. *Basic Inc.* v. *Levinson*, 485 U. S. 224, 245–247 (1988), sought to import fraud on the market theory from economics into securities litigation. In doing so, *Basic* posited two things—first, in an efficient market a company's stock price generally reflects any public and material information about the company; second, investors generally rely on a company's stock price as an indicator of the firm's true value. *Ibid.* Given these economic assumptions, the Court held that securities fraud plaintiffs can presumptively meet their burden of proving reliance on an alleged misrepresentation by proving four things: (1) the defendant's alleged misrepresentation was publicly known; (2) it was material; (3) the stock traded in an efficient market; and (4) the plaintiff purchased the stock at the market price between the time the misrepresentation was made and the truth was revealed. See *Halliburton Co.* v. *Erica P. John Fund, Inc.*, 573 U. S. 258, 277–278 (2014)

(*Halliburton II*).

The presumption of reliance not only helps a plaintiff prove one of the essential elements of a securities fraud claim. Certain class actions require that "questions of law or fact common to class members predominate over any questions affecting only individual members." Fed. Rule Civ. Proc. 23(b)(3). So to the extent a court is able to presume reliance by everyone who purchased an affected stock, *Basic* can help avoid individualized questions that otherwise might stand in the way of proceeding with a securities fraud action on a classwide basis. *Erica P. John Fund, Inc.* v. *Halliburton Co.*, 563 U. S. 804, 809–811 (2011) (*Halliburton I*).

At the same time, *Basic*'s presumption of reliance has only ever been just that. Everyone accepts that, if a defendant undermines one of the assumptions on which it rests, the presumption dissipates. So, for example, if the defendant's alleged misrepresentation did not actually affect the market price, there can be no ground for presuming anyone relied on that misrepresentation when purchasing the stock. *Halliburton II*, 573 U. S., at 279. Similarly, if a particular plaintiff did not care about the integrity of the market price when purchasing a stock, there is no basis for presuming that individual's reliance. *Id.*, at 276.

Before us, the only meaningful dispute concerns what burden a defendant bears when it comes to rebutting the *Basic* presumption. Does the defendant carry only a burden of *production*, or does the defendant sometimes carry a burden of *persuasion*? In my view, only a burden of production is involved.

Start with what we have said about presumptions like *Basic*'s. This Court has long recognized that a "'"presumption" properly used refers only to a device for allocating the production burden.'" *Texas Dept. of Community Affairs* v. *Burdine*, 450 U. S. 248, 255, n. 8 (1981). Throughout the law, courts have sometimes created presumptions to help plaintiffs prove their cases when direct evidence can be hard to come by. See *Basic*, 485 U. S., at 245. These presumptions operate by allowing the plaintiff to prove only certain specified "predicate fact[s]" at the outset. *St. Mary's Honor Center* v. *Hicks*, 509 U. S. 502, 506 (1993). If the plaintiff does so, an inference or "presumption" arises that the plaintiff has met its burden of persuasion, at least "in the absence" of some competing "explanation." *Ibid.* (internal quotation marks omitted). At that point, the defendant bears a burden of production to present evidence that, if "taken as true," would "permit the conclusion" that the presumption in the plaintiff's favor is mistaken. *Id.*, at 509 (emphasis deleted). If the defendant produces such evidence, the presumption "drops from the case." *Id.*, at 507 (internal quotation marks omitted). "[T]he trier of fact" then "proceeds to decide the ultimate question." *Id.*, at 511. Throughout this whole back-and-forth process, the burden of persuasion never shifts: The "plaintiff at all times bears the ultimate burden of persuasion" to prove all aspects of its cause of action. *Ibid.* (internal quotation marks omitted).

The Court has explained that nearly "all presumptions" operate in this way. *Id.*, at 507. The Federal Rules of Evidence confirm the point too. Rule 301, titled "Presumptions in Civil Cases Generally," provides that "the party against whom a presumption is directed has the burden of producing evidence to rebut the presumption," but "the burden of persuasion . . . remains on the party who had it originally." Again, a burden of production may shift to the defendant, but never the burden of persuasion.

Title VII practice offers a familiar illustration of these principles. There, the plaintiff bears the ultimate burden of proving that his employer intentionally discriminated against him because of his race or some other unlawful factor. See *St. Mary's Honor Center*, 509 U. S., at 511. But because direct evidence of intentional discrimination can be "elusive," the Court has created a presumption. See *id.*, at 506 (internal quotation marks omitted). If a plaintiff proves certain "predicate fact[s]"—for example, that he is black, that he was fired from a job for which he was qualified, and that the job remained open and was ultimately filled by a white person—an inference or presumption of intentional discrimination arises. *Ibid.* At that point, the defendant bears the burden of producing evidence that, if accepted as true, shows it fired the plaintiff for only legitimate business reasons. *Id.*, at 506–507. Should that happen, the presumption of intentional discrimination disappears and the trier of fact must weigh the parties' competing proof. *Id.*, at 510–511. None of that means the plaintiff's indirect evidence of discrimination *also* disappears. It simply means the trier of fact must consider any inferences arising from that indirect evidence while also considering the defendant's evidence and any other proof the plaintiff submits. See *id.*, at 511. "[A]t all times" throughout the litigation, however, the plaintiff bears the "ultimate burden of persuading the trier of fact that he has been the victim of intentional discrimination." *Id.*, at 507–508 (brackets and internal quotation marks omitted).

Since the Court first started tangling with the fraud on the market theory in *Basic*, it has followed these traditional rules. Consistently, our decisions have "made clear" that *Basic*'s "presumption" of reliance is "just that." *Halliburton I*, 563 U. S., at 811. Much as the Court said it created the Title VII presumption to help prove the "elusive" question of intentional discrimination, *Basic* said it created *its* presumption of reliance to relieve "an unnecessarily unrealistic evidentiary burden" on securities fraud plaintiffs. 485 U. S., at 245. And when creating its presumption *Basic* expressly cited Rule 301. *Ibid.*

The process *Basic* outlined matches traditional understandings too. The Court explained that a plaintiff's ability to prove certain "threshold facts"—about market operations and the publicity of the misstatement—gives rise to a "presumption" of reliance. See *id.*, at 248, and n. 27. After such a showing, the Court continued, a defendant may then proceed to "rebut the presumption." *Id.*, at 248. Nowhere in any of this did *Basic* suggest the order of operations governing its presumption should differ in any way from those governing others commonly found in the law and subject to Rule 301. Nor is there any doubt which party has the burden of persuasion on the question of reliance in securities fraud cases like ours. From start to finish, the plaintiff has the burden to satisfy that essential element of its claim. *Basic*'s presumption of reliance thus "does not shift" any burden of persuasion—that always "remains" with the plaintiff. Fed. Rule Evid. 301; see also *St. Mary's Honor Center*, 509 U. S., at 506–508.

Consider how all this works in routine securities fraud cases. Once a plaintiff proves the four "predicate facts" *Basic* specified, see *supra*, at 1, a presumption of reliance attaches. At that point, the defendant bears the burden of producing evidence that, if believed, would support a finding that the plaintiff did not actually rely on its alleged misrepresentation. As we have seen, a defendant might do so by producing evidence suggesting that its alleged misrepresentation did not have an impact on market price or that the plaintiff was indifferent to the alleged misrepresentation. Upon such a showing, the presumption of reliance drops from the case and the trier of fact must decide the question of reliance *vel non*, cognizant of the fact the plaintiff bears the burden of proving reliance like any other essential elements of its claim. Again, that does not mean the plaintiff's indirect proof disappears. A court *may* still infer from the *Basic* predicates that a particular misstatement was incorporated into the stock price and that the plaintiff relied on the integrity of that price. Both sides are free to present additional proof too. It's simply that a court no longer *must* find reliance. See *St. Mary's Honor Center*, 509

U. S., at 511.

The Court disputes none of this. It does not even try to defend on the merits its unusual suggestion that the *defendant* carries some burden of persuasion in a *plaintiff's* claim for securities fraud. Instead, the Court contends only that precedent ties our hands.

Primarily, the Court points to a single clause in a single sentence in *Basic* observing that a defendant may rebut the presumption of reliance with "[a]ny showing that severs the link between the alleged misrepresentation" and the stock price. See *ante*, at 10 (quoting *Basic*, 485 U. S., at 248) (emphasis deleted). The Court then splices that clause together with another clause in a preceding sentence explaining that, before *Basic*, lower courts had said a defendant rebuts the fraud on the market presumption by showing "that the misrepresentation in fact did not lead to a distortion of price." *Ante*, at 10 (quoting *Basic*, 485 U. S., at 248; emphasis deleted).

But what does this prove? Surely this language confirms an important and by now familiar point: Once a defendant produces evidence that, if believed, shows that fraud on the market theory does not hold in its particular case because its alleged misrepresentation in fact failed to affect the stock price, the presumption of reliance drops away. On the Court's reading today, however, this language doesn't just carry that obvious meaning. We are told it *also* must mean that *Basic* intended to shift the "burden of persuasion" with respect to "price impact" to the defendant—at least "at class certification"—because the "mere production of *some* evidence relevant to price impact would rarely accomplish th[e] feat" of "in fact" "sever[ing] the link between a misrepresentation and the price paid" for the stock. *Ante*, at 10–11 (internal quotation marks omitted; emphasis deleted).

That much does not follow. Not only has this Court often said it is a mistake to parse terms in a judicial opinion with the kind of punctilious exactitude due statutory language.

See *Reiter* v. *Sonotone Corp.*, 442 U. S. 330, 341 (1979). Even read for all they are worth, the handful of words on which the Court rests its entire holding today—a "showing" that "in fact" "sever[s] the link"—cannot begin to carry the weight the Court assigns them. See *ante*, at 10 (emphasis deleted). These terms do not even appear together in *Basic*: The Court has to pluck the phrase "in fact" from one sentence and the phrase "[a] showing that severs the link" from another, and then combine them to create a *new* clause that appears nowhere in the U. S. Reports—a "showing" that "in fact sever[s] the link." *Ante*, at 10 (internal quotation marks omitted). Even then, the Court's newly handcrafted phrase does not so much as *mention* the terms "burden of persuasion" or "price impact."

The hard truth is that in the 30-plus years since *Basic* this Court has never (before) suggested that plaintiffs are relieved from carrying the burden of persuasion on any aspect of their own causes of action. To the contrary, when discussing the presumption it created, *Basic* expressly referenced Rule 301 and invoked its normal order of operations. And this Court has long explained that presumptions "properly used" refer only to devices "for allocating the production burden," and not the burden of persuasion. *Burdine*, 450 U. S., at 255, n. 8 (internal quotation marks omitted). Are we really to believe that *Basic*—while referencing traditional understandings embodied in Rule 301 and just seven years after *Burdine*—secretly meant to depart from traditional and "proper" understandings about how presumptions work? Thanks to spliced clauses found in two sentences this Court has never before read that way? All while using words that carry another and much more natural meaning? To state the theory is to refute it.

If *Basic* doesn't command today's result, the Court offers a backup theory. Separately, it insists, *Halliburton II* requires us to shift a burden of persuasion to the defendant. Specifically, the Court points to the fact that *Halliburton II* reaffirmed *Basic*'s holding that a plaintiff need not show reliance "directly," but may do so "presumptively" by carrying the burden of proving the four *Basic* factual predicates. 573 U. S., at 278. A decision holding that the defendant merely bore the burden of producing evidence suggesting a lack of price impact at class certification, the Court now submits, "would be nearly indistinguishable from the regime that *Halliburton II* rejected." *Ante*, at 11.

That much does not follow either. Like *Basic*, *Halliburton II* concerned what facts a plaintiff must produce to *generate* a presumption of reliance. This case is about what defendants must do to *rebut* that presumption. Deciding one does not resolve the other. To say these issues are "indistinguishable" is to miss the entire point of a presumption: It allows the plaintiff to state a prima facie case based on inference and requires the defendant to bear the burden of producing evidence in response; once the defendant does so, the presumption has served its purpose and drops from the case. At that point, the factfinder now has the benefit of evidence from both sides and must decide the case with reference to the plaintiff's burden of persuasion. Nothing in *Halliburton II* suggests a departure from these principles, let alone that some burden of persuasion secretly shifts to the defendant in a plaintiff's claim for securities fraud. To the contrary, that decision arose in the class certification context and expressly *reaffirmed* that "[t]he *Basic* presumption does not relieve plaintiffs of the burden of proving" they have satisfied "the predominance requirement of Rule 23(b)(3)." 573 U. S., at 276.

The Court has no answer to any of this. Instead, it replies only by touting the fact that two Court of Appeals decisions have read *Basic* and *Halliburton II* as it does. *Ante*, at 11. But this is a non sequitur. The Court does not suggest that a pair of lower court opinions represents some robust judicial consensus. Nor does the Court suggest those opinions free us from having to interpret the law for ourselves. After all, "[o]ur duty is to follow the law as we find it, not to follow rotely whatever lower courts might once have said about it." *BP p.l.c.* v. *Mayor and City Council of Baltimore*, 593 U. S. ___, ___–___ (2021) (slip op., at 11–12). The fact remains that nothing in our prior decisions has ever placed a burden of persuasion on the defendant with respect to any aspect of the plaintiff's case. It is incumbent on the plaintiff to prove reliance, not the defendant to disprove it. If a majority of the Court today really believes some novel new burden of persuasion *should* be placed on the defendant, it ought to say so. Past decisions—by this Court or others—cannot be blamed for today's result.

Perhaps recognizing the incongruity of its conclusion, the Court goes out of its way to downplay its significance. We're told that "on the ground" today's holding "is unlikely to make much difference" because "[i]n most securities-fraud class actions . . . the plaintiffs and defendants submit competing expert evidence on price impact." *Ante*, at 12. And in cases like these, "[t]he district court's task," according to the Court, "is simply to assess all the evidence of price impact" and "determine whether it is more likely than not that the alleged misrepresentations had a price impact." *Ibid.*

This is a curious disavowal. Obviously, the Court thinks the issue important enough to spend the time and effort to rejigger the burden of persuasion. Now, though, it says none of this matters because most cases come down to a dispute over evidence of price impact irrespective of the presumption. The Court's suggestion that the burden of persuasion will "rarely" make a "difference" misses the point too. The whole reason we allocate the burden of persuasion is to resolve close cases by providing a tie breaker where the burden *does* make a difference. That close cases may not be common ones is no justification for indifference about how the law resolves them.

Respectfully, I dissent.

LACERA

FOR INFORMATION ONLY

June 28, 2021

TO: Trustees,
Board of Investments

FROM: Christine Roseland CR
Senior Staff Counsel

FOR: July 14, 2021 Board of Investments Meeting

SUBJECT: **Legal Projects**

Attached is the monthly report on the status of Board-directed investment-related projects handled by the Legal Division as of July 14, 2021.

Attachment

c: Santos H. Kreimann
Jonathan Grabel
JJ Popowich
Vache Mahseredjian
Christopher Wagner
Ted Wright
Jim Rice
Jude Perez
Steven Rice
John Harrington
Soo Park
Margo McCabe
Lisa Garcia

LACERA Legal Division
Board of Investments Projects
Monthly Status Report - Pending as of July 1, 2021

	Project/ Investment	Description	Amount	Board Approval Date	Completion Status	% Complete	Notes
EQUITIES/FIXED INCOME	PineBridge Investments	Investment Management Agreement	TBD	April 14, 2021	Completed	100%	Completed.
HEDGE FUNDS	Innocap	Engagement Agreement	N/A	March 10, 2021	In Progress	40%	Legal negotiations in process.
	AM Asia Strategies Fund LP	Subscription	$100,000,000.00	June 9, 2021	Completed	100%	Completed.
PRIVATE EQUITY	GHO Capital III, L.P.	Subscription	€ 100,000,000.00	May 19, 2021	Completed	100%	Completed.
REAL ASSETS	AXIUM Infrastructure North America	Subscription	$415,000,000.00	June 9, 2021	In Progress	25%	Legal negotiations in process.

LACERA

FOR INFORMATION ONLY

June 25, 2021

TO: Each Trustee
Board of Retirement
Board of Investments

FROM: Barry W. Lew
Legislative Affairs Officer

FOR: July 7, 2021 Board of Retirement Meeting
July 14, 2021 Board of Investments Meeting

SUBJECT: **Monthly Status Report on Legislation**

Attached is the monthly report on the status of legislation that staff is monitoring or on which LACERA has adopted a position. Also included is a support letter that was recently sent for H.R. 82 (Social Security Fairness Act of 2021), which would repeal the Windfall Elimination Provision and Government Pension Offset.

Reviewed and Approved:

Steven P. Rice, Chief Counsel

Attachments
LACERA Legislative Report Index
LACERA Legislative Report
H.R. 82: Social Security Fairness Act of 2021 (Support Letter)

cc: Santos H. Kreimann
JJ Popowich
Steven P. Rice
Jon Grabel
Tony Roda, Williams & Jensen
Joe Ackler, Ackler & Associates

LACERA Legislative Report
2021-22 Legislative Session
Status as of June 25, 2021

PUBLIC RETIREMENT

CA AB 551

AUTHOR: Rodriguez [D]
TITLE: Teachers' Retirement System: Individual Plans
INTRODUCED: 02/10/2021
DISPOSITION: Pending
SUMMARY:

Authorizes the State Teachers' Retirement System to administer an individual retirement plan as described in Section 408 of Title 26 of the United States Code. Eliminates the requirement that the administration of these plans be for the purpose of accepting a rollover from an annuity contract or custodial account offered by the system.

STATUS:

06/03/2021 In ASSEMBLY. To Inactive File.

CA AB 627

AUTHOR: Waldron [R]
TITLE: Recognition of Tribal Court Orders: Retirement Plans
INTRODUCED: 02/12/2021
DISPOSITION: To Governor
SUMMARY:

Establishes a procedure pursuant to which one or both of the parties to a tribal court proceeding may file an application for recognition of a tribal court order that establishes a right to child support, spousal support payments, or marital property rights to a spouse, former spouse, child, or other dependent of a participant in a retirement plan or other plan of deferred compensation, and that assigns all or a portion of the benefits payable with respect to the plan participant to an alternate payee.

STATUS:

06/24/2021 In SENATE. Read third time. Passed SENATE. To enrollment. (39-0)

CA AB 826

AUTHOR: Irwin [D]
TITLE: County Employees Retirement Law: Compensation Earnable
INTRODUCED: 02/16/2021
LAST AMEND: 06/22/2021
DISPOSITION: Pending
SUMMARY:

Prescribes, for the County Employees Retirement Law, a definition of compensation earnable that would include any form of remuneration, whether paid in cash or as in-kind benefits, if specified requirements are met.

STATUS:

06/24/2021 Re-referred to SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT.

CA AB 1133

AUTHOR: Chen [R]
TITLE: State Employee Hybrid Pension System
INTRODUCED: 02/18/2021
DISPOSITION: Pending
SUMMARY:

States the intent of the Legislature to enact legislation that would create a hybrid retirement benefit, consisting of a defined benefit pension and a defined contribution program, within the Public Employees' Retirement System, that state employees would have the option of electing.

STATUS:

02/18/2021	INTRODUCED.

CA AB 1293

AUTHOR: Cooley [D]
TITLE: Federal Law Limits: Adjustments
INTRODUCED: 02/19/2021
LAST AMEND: 04/13/2021
DISPOSITION: Pending
SUMMARY:

Prohibits the amount payable to a member under the Judges' Retirement System II, including specified adjustments, from exceeding the limits established by federal law, and would incorporate specified provisions of federal law by reference.

STATUS:

05/27/2021	To SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT.

CA SB 278

AUTHOR: Leyva [D]
TITLE: PERS: Disallowed Compensation: Benefit Adjustments
INTRODUCED: 01/29/2021
LAST AMEND: 03/23/2021
DISPOSITION: Pending
SUMMARY:

Establishes new procedures under Public Employees' Retirement Law for cases in which Public Employees' Retirement System determines that the benefits of a member or annuitant are, or would be, based on disallowed compensation that conflicts with State Public Employees' Pension Reform Act of 2013 and other specified laws and thus impermissible under Public Employees' Retirement Law.

STATUS:

06/23/2021	From ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (7-0)

CA SB 294

AUTHOR: Leyva [D]
TITLE: Public Retirement: Leave of Absence: Service Credit
INTRODUCED: 02/02/2021
LAST AMEND: 06/14/2021
DISPOSITION: Pending
SUMMARY:

Removes the 12-year limitation for service credit earned on a compensated leave of absence for purposes of service with an employee organization. States that this leave is in addition to any leave to which public employees may be entitled by other laws or by a memorandum of understanding or collective bargaining agreement.

STATUS:

06/23/2021	From ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (6-0)

CA SB 634

AUTHOR: Labor, Public Employment & Retirement Cmt
TITLE: Public Employees' Retirement
INTRODUCED: 02/19/2021

	LAST AMEND:	06/14/2021
	DISPOSITION:	Pending
	SUMMARY:	

Prohibits a member of the State Teachers' Retirement System (STRS) from purchasing service credit for any school year if the purchase would result in more than one year of service for that school year. Requires the member to submit the election to retain coverage to the employer and would delete the requirement that a copy of the form be submitted to STRS.

STATUS:

06/23/2021 From ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (7-0)

Comments:

This is an omnibus bill that covers technical amendments for CalPERS, CalSTRS, and CERL retirement systems.

US HR 2954	**SPONSOR:**	Neal [D]
	TITLE:	Strong Retirement
	INTRODUCED:	05/04/2021
	DISPOSITION:	Pending
	SUMMARY:	

Secures a Strong Retirement Act of 2021.

STATUS:

05/04/2021	INTRODUCED.
05/04/2021	To HOUSE Committee on WAYS AND MEANS.
05/04/2021	To HOUSE Committee on FINANCIAL SERVICES.
05/04/2021	To HOUSE Committee on EDUCATION AND LABOR.

Comments:

Would gradually raise the age for mandatory distributions to age 75 by 2032.

PUBLIC INVESTMENT

CA AB 539	**AUTHOR:**	Cooley [D]
	TITLE:	State Teachers' Retirement: Investment Managers
	INTRODUCED:	02/10/2021
	DISPOSITION:	Pending
	SUMMARY:	

Authorizes the Teachers' Retirement Board to contract with investment advisers upon the same finding by the Board and approval by the State Personnel Board. Authorizes the Board to establish a competitive bidding process and to specify the contract terms and conditions the Board solely deems necessary and prudent to contract with qualified investment managers and investment advisers.

STATUS:

06/21/2021 From SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (5-0)

CA AB 890	**AUTHOR:**	Cervantes [D]
	TITLE:	Public Employee Retirement Systems: Investment
	INTRODUCED:	02/17/2021
	LAST AMEND:	05/24/2021
	DISPOSITION:	Pending
	SUMMARY:	

Requires the Board of Administration of the Public Employees' Retirement System and the Teachers' Retirement Board to provide reports to the Legislature on the status of achieving objectives and initiatives, to be defined by the boards, regarding participation of emerging managers or diverse managers responsible for asset management within each retirement system's portfolio of investments.

STATUS:

06/16/2021 To SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT.

CA AB 1019

AUTHOR:	Holden [D]
TITLE:	Public Employee Retirement Systems: Investments
INTRODUCED:	02/18/2021
DISPOSITION:	Pending

SUMMARY:

prohibit state trust moneys from being used to make additional or new investments or to renew existing investments in investment vehicles issued or owned by the government of Turkey, unless the government adopts a policy to acknowledge the Armenian Genocide and embark on a path of affording justice to its victims.

STATUS:

03/04/2021 To ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT.

CA SB 457

AUTHOR:	Portantino [D]
TITLE:	Public Employee Retirement Systems: Investments
INTRODUCED:	02/16/2021
DISPOSITION:	Pending

SUMMARY:

Requires the boards of administration of the Public Employees Retirement System and the State Teachers Retirement System to provide employers that are school districts and cities that participate in the systems an option to elect an investment portfolio that does not contain investment vehicles that are issued or owned by the government of the Republic of Turkey.

STATUS:

05/28/2021 To ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT.

RETIREMENT PERSONNEL

CA AB 761

AUTHOR:	Chen [R]
TITLE:	County Employees' Retirement: Personnel: Orange County
INTRODUCED:	02/16/2021
LAST AMEND:	03/18/2021
DISPOSITION:	To Governor

SUMMARY:

Authorizes the board of retirement for Orange County to appoint an administrator, assistant administrators, a chief investment officer, subordinate investment officers, senior management employees, legal counsel, and other specified employees. Provides that the personnel appointed pursuant to these provisions would not be county employees subject to county civil service and merit system rules, and instead would be employees of the retirement system.

STATUS:

06/22/2021 *****To GOVERNOR.

PUBLIC EMPLOYMENT

CA AB 17

AUTHOR: Cooper [D]
TITLE: Peace Officers: Disqualification from Employment
INTRODUCED: 12/07/2020
LAST AMEND: 01/12/2021
DISPOSITION: Pending
SUMMARY:

Disqualifies a person from being a peace officer if the person has been discharged from the military for committing an offense that would have been a felony if committed in the state or if the person has been certified as a peace officer and has had that certification revoked by the Commission on Peace Officer Standards and Training.

STATUS:

01/12/2021	From ASSEMBLY Committee on PUBLIC SAFETY with author's amendments.
01/12/2021	In ASSEMBLY. Read second time and amended. Re-referred to Committee on PUBLIC SAFETY.

CA AB 444

AUTHOR: Public Employment and Retirement Cmt
TITLE: State and Local Employees: Pay Warrants: Designees
INTRODUCED: 02/08/2021
DISPOSITION: To Governor
SUMMARY:

Relates to State and local employees. Prescribes a process by which an appointing power would issue a check directly to a designated person instead of delivering employee warrants to that person. Provides that upon sufficient proof of the designee's identity, the appointing power must endorse and deposit the warrant issued to a deceased employee back into the Treasury to the credit of the fund or appropriation upon which it was drawn, then issue a revolving fund check to the designated person.

STATUS:

06/24/2021	In SENATE. Read third time. Passed SENATE. To enrollment. (39-0)

Comments:

The SACRS Legislative Committee is considering a similar proposal that would clarify that a deceased member's last pension check may be issued to a corporation, trust, or estate.

CA AB 1354

AUTHOR: Grayson [D]
TITLE: Public Employees' Retirement
INTRODUCED: 02/19/2021
DISPOSITION: Pending
SUMMARY:

Makes nonsubstantive changes to provisions prohibiting a retired person from being employed by a public employer in the same public retirement system from which the retiree receives pension benefits without reinstatement from retirement into that system, subject to certain exceptions.

STATUS:

02/19/2021	INTRODUCED.

Comments:

This is a spot bill.

CA AB 1460

AUTHOR: Bigelow [R]
TITLE: State Employment: COVID-19 Telework: Costs

INTRODUCED: 02/19/2021
DISPOSITION: Pending
SUMMARY:

Authorizes the Department of Human Resources (CalHR) to provide a one-time payment of an unspecified amount to employees who have been required to telework as a result of the COVID-19 pandemic in order to offset costs associated with working remotely.

STATUS:

03/11/2021 To ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT.

CA SB 411

AUTHOR: Cortese [D]
TITLE: Public Employees' Retirement System
INTRODUCED: 02/12/2021
LAST AMEND: 04/13/2021
DISPOSITION: Pending
SUMMARY:

Eliminates the requirement that a person employed without reinstatement in a manner other than authorized by PERL be reinstated, instead providing that reinstatement is permissive. Makes conforming changes and makes specific reference to the duties of employees and employers regarding reinstatement after retirement in violation of PEPRA.

STATUS:

06/23/2021 From ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (7-0)

DISABILITY RETIREMENT

CA AB 845

AUTHOR: Rodriguez [D]
TITLE: Disability Retirement: COVID-19: Presumption
INTRODUCED: 02/17/2021
LAST AMEND: 03/30/2021
DISPOSITION: Pending
SUMMARY:

Creates a presumption, applicable to the retirement systems that PEPRA regulates and to specified members in those systems, that would be applied to disability retirements on the basis, in whole or in part, of a Coronavirus disease 2019-related illness. Requires that it be presumed the disability arose out of, or in the course of, the member's employment.

STATUS:

06/22/2021 In SENATE. Read second time. To third reading.

WORKERS COMPENSATION

CA AB 334

AUTHOR: Mullin [D]
TITLE: Workers Compensation: Skin Cancer
INTRODUCED: 01/27/2021
DISPOSITION: Pending
SUMMARY:

Relates to existing law which provides that skin cancer developing in active lifeguards, for purposes of workers' compensation, is presumed to arise out of and in the course of employment, unless the presumption is rebutted. Expands the scope of this provision to certain peace officers of the Department of Fish and Wildlife and the Department of Parks and Recreation.

STATUS:

06/21/2021	From SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (5-0)

CA AB 415

AUTHOR: Rivas R [D]
TITLE: Employment: Workers' Compensation
INTRODUCED: 02/03/2021
LAST AMEND: 02/12/2021
DISPOSITION: Pending
SUMMARY:

Relates to workers' compensation. Defines injury for certain public employees regularly exposed to active fires or health hazards directly resulting from firefighting operations to include cancer that develops or manifests during a period of exposure to a known carcinogen while in public employment. Establishes a presumption that the cancer arose out of, and in the course of, employment, unless the presumption is controverted by evidence.

STATUS:

02/12/2021	To ASSEMBLY Committee on INSURANCE.
02/12/2021	From ASSEMBLY Committee on INSURANCE with author's amendments.
02/12/2021	In ASSEMBLY. Read second time and amended. Re-referred to Committee on INSURANCE.

CA AB 772

AUTHOR: Ramos [D]
TITLE: Workers' Compensation: Medical Treatment
INTRODUCED: 02/16/2021
LAST AMEND: 03/25/2021
DISPOSITION: Pending
SUMMARY:

Clarifies that an employer is not limited in its ability to insure against an act of domestic terrorism or to provide benefits in excess of those required by existing law following an act of terrorism. Clarifies that when an employer approves a request for medical treatment from a treatment provider, without modification, the employer has completed utilization review under the law.

STATUS:

03/25/2021	To ASSEMBLY Committee on INSURANCE.
03/25/2021	From ASSEMBLY Committee on INSURANCE with author's amendments.
03/25/2021	In ASSEMBLY. Read second time and amended. Re-referred to Committee on INSURANCE.

CA AB 872

AUTHOR: Wood [D]
TITLE: Leave of Absence: Firefighters
INTRODUCED: 02/17/2021
DISPOSITION: Pending
SUMMARY:

Relates to Leave of absence for firefighters. Makes that benefit available to all rank-and-file and supervisory firefighters employed by the Department of Forestry and Fire Protection whose principal duties include active fire suppression or prevention services.

STATUS:

06/21/2021	From SENATE Committee on LABOR, PUBLIC EMPLOYMENT

AND RETIREMENT: Do pass to Committee on APPROPRIATIONS. (5-0)

CA AB 991

AUTHOR: Ward [D]
TITLE: Workers' Compensation: Presumed Injuries
INTRODUCED: 02/18/2021
LAST AMEND: 03/11/2021
DISPOSITION: Pending
SUMMARY:

Expands presumptions for hernia, pneumonia, heart trouble, cancer, tuberculosis, bloodborne infectious disease, methicillin-resistant Staphylococcus aureus skin infection, and meningitis-related illnesses and injuries to a lifeguard employed on a year-round, full-time basis by the City of San Diego.

STATUS:

03/11/2021	To ASSEMBLY Committee on INSURANCE.
03/11/2021	From ASSEMBLY Committee on INSURANCE with author's amendments.
03/11/2021	In ASSEMBLY. Read second time and amended. Re-referred to Committee on INSURANCE.

CA SB 213

AUTHOR: Cortese [D]
TITLE: Workers' Compensation: Hospital Employees
INTRODUCED: 01/12/2021
LAST AMEND: 03/04/2021
DISPOSITION: Pending
SUMMARY:

Defines injury, for a hospital employee who provides direct patient care in an acute care hospital, to include infectious diseases, cancer, musculoskeletal injuries, post-traumatic stress disorder, and respiratory diseases. Creates a rebuttable presumption that these injuries that develop or manifest in a hospital employee who provides direct patient care in an acute care hospital arose out of and in the course of the employment. Includes COVID-19 in the definitions of infectious and respiratory diseases.

STATUS:

06/03/2021	In SENATE. Read third time. Failed to pass SENATE. (20-10)
06/03/2021	In SENATE. Motion to reconsider.
06/03/2021	In SENATE. Reconsideration granted.
06/03/2021	In SENATE. To Inactive File.

CA SB 284

AUTHOR: Stern [D]
TITLE: Workers' Compensation: Firefighters and Peace Officers
INTRODUCED: 02/01/2021
LAST AMEND: 03/16/2021
DISPOSITION: Pending
SUMMARY:

Relates to existing Law which provides that injury includes post-traumatic stress that develops during a period in which the injured person is in the service of the department or unit. Makes that provision applicable to active firefighting members of the State Department of State Hospitals, the State Department of Developmental Services, and the Military Department, and the Department of Veterans Affairs, including security officers of the Department of Justice when performing assigned duties.

STATUS:

06/24/2021 From ASSEMBLY Committee on INSURANCE: Do pass as amended to Committee on APPROPRIATIONS. (14-0)

CA SB 335

AUTHOR: Cortese [D]
TITLE: Workers' Compensation: Liability
INTRODUCED: 02/08/2021
LAST AMEND: 03/10/2021
DISPOSITION: Pending
SUMMARY:

Reduces the time periods after the date the claim form is filed with an employer in which the injury is presumed compensable and the presumption is rebuttable only by evidence discovered subsequent to the time period for certain injuries or illnesses, including hernia, heart trouble, pneumonia, or tuberculosis, among others, sustained in the course of employment of a specified member of law enforcement or a specified first responder.

STATUS:

06/10/2021 To ASSEMBLY Committee on INSURANCE.

CA SB 788

AUTHOR: Bradford [D]
TITLE: Workers' Compensation: Risk Factors
INTRODUCED: 02/19/2021
LAST AMEND: 06/17/2021
DISPOSITION: Pending
SUMMARY:

Prohibits consideration of race, religious creed, color, national origin, gender, marital status, sex, sexual identity, or sexual orientation to determine the approximate percentage of the permanent disability caused by other factors. Expresses the Legislature's intent to eliminate bias and discrimination in the workers' compensation system.

STATUS:

06/24/2021 From ASSEMBLY Committee on INSURANCE: Do pass. To Consent Calendar. (14-0)

BROWN ACT

CA AB 339

AUTHOR: Lee [D]
TITLE: Local Government: Open and Public Meetings
INTRODUCED: 01/28/2021
LAST AMEND: 05/04/2021
DISPOSITION: Pending
SUMMARY:

Requires all open and public meetings of a city council or a county board of supervisors that governs a jurisdiction containing least 250,000 people to include an opportunity for members of the public to attend via a telephonic option or an internet-based service option.

STATUS:

06/16/2021 To SENATE Committees on GOVERNANCE AND FINANCE and JUDICIARY.

CA AB 361

AUTHOR: Rivas R [D]
TITLE: Open Meetings: Local Agencies: Teleconferences
INTRODUCED: 02/01/2021
LAST AMEND: 05/10/2021

DISPOSITION: Pending

SUMMARY:

Authorizes a local agency to use teleconferencing without complying with the teleconferencing requirements imposed by the Ralph M. Brown Act when a legislative body of a local agency holds a meeting for the purpose of declaring or ratifying a local emergency, during a declared state of emergency or local emergency, when state or local health officials have imposed or recommended measures to promote social distancing, and during a declared local emergency, provided certain requirements are met.

STATUS:

06/22/2021 To SENATE Committees on GOVERNANCE AND FINANCE and JUDICIARY.

CA AB 703

AUTHOR: Rubio [D]

TITLE: Open Meetings: Local Agencies: Teleconferences

INTRODUCED: 02/12/2021

LAST AMEND: 04/29/2021

DISPOSITION: Pending

SUMMARY:

Removes the requirements of the Ralph M. Brown Act particular to teleconferencing and allows for teleconferencing subject to existing provisions regarding the posting of notice of an agenda and the ability of the public to observe the meeting and provide public comment.

STATUS:

04/29/2021 From ASSEMBLY Committee on LOCAL GOVERNMENT with author's amendments.

04/29/2021 In ASSEMBLY. Read second time and amended. Re-referred to Committee on LOCAL GOVERNMENT.

Comments:

According to SACRS lobbyists, this will be a two-year bill and not taken up in 2021.

CA SB 274

AUTHOR: Wieckowski [D]

TITLE: Local Government Meetings: Agenda and Documents

INTRODUCED: 01/29/2021

LAST AMEND: 04/05/2021

DISPOSITION: Pending

SUMMARY:

Requires a local agency with an internet website, or its designee, to email a copy of, or website link to, the agenda or a copy of all the documents constituting the agenda packet if the person requests that the items be delivered by email. Requires the legislative body or its designee to send by mail a copy of the agenda or a website link to the agenda and to email a copy of all other documents constituting the agenda packet, if specified criteria or circumstances are met.

STATUS:

06/23/2021 From ASSEMBLY Committee on LOCAL GOVERNMENT: Do pass to Committee on APPROPRIATIONS. (8-0)

PUBLIC RECORDS ACT

CA AB 386

AUTHOR: Cooper [D]

TITLE: Public Employees Retirement: Investments: Confidential

INTRODUCED: 02/02/2021

LAST AMEND: 04/28/2021

DISPOSITION: Pending

SUMMARY:

Exempts from disclosure under the California Public Records Act specified records regarding an internally managed private loan made directly by the Public Employees' Retirement Fund. Provides that these records would include quarterly and annual financial statements of the borrower or its constituent owners, unless the information has already been publicly released by the keeper of the information. Prescribes specified exceptions to this exemption from disclosure.

STATUS:

06/21/2021	From SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT: Do pass to Committee on JUDICIARY. (4-0)

CA AB 473

AUTHOR: Chau [D]
TITLE: California Public Records Act
INTRODUCED: 02/08/2021
DISPOSITION: Pending
SUMMARY:

Recodifies and reorganizes the provisions of the California Public Records Act. The bill would include provisions to govern the effect of recodification and states that the bill is intended to be entirely nonsubstantive in effect.

STATUS:

06/16/2021	To SENATE Committee on JUDICIARY.

CA AB 474

AUTHOR: Chau [D]
TITLE: California Public Records Act: Conforming Revisions
INTRODUCED: 02/08/2021
LAST AMEND: 06/21/2021
DISPOSITION: Pending
SUMMARY:

Enacts various conforming and technical changes related to another bill, AB 473, which recodifies and reorganizes the California Public Records Act.

STATUS:

06/21/2021	From SENATE Committee on JUDICIARY with author's amendments.
06/21/2021	In SENATE. Read second time and amended. Re-referred to Committee on JUDICIARY.

SOCIAL SECURITY

CA AJR 9

AUTHOR: Cooper [D]
TITLE: Social Security
INTRODUCED: 03/01/2021
DISPOSITION: Pending
SUMMARY:

Requests the Congress of the United States to enact, and the President to sign, legislation that would repeal the Government Pension Offset and the Windfall Elimination Provision from the Social Security Act.

STATUS:

06/23/2021	Re-referred to SENATE Committee on LABOR, PUBLIC EMPLOYMENT AND RETIREMENT.

BOR_Position: Support *05/05/2021*
IBLC_Recommendation: Support *04/15/2021*
Staff_Recommendation: Support

US HR 82

SPONSOR: Davis R [R]
TITLE: Government Pension Offset Repeal
INTRODUCED: 01/04/2021
DISPOSITION: Pending
SUMMARY:

Amends the Social Security Act; repeals the Government pension offset and windfall elimination provisions.

STATUS:

01/04/2021 INTRODUCED.
01/04/2021 To HOUSE Committee on WAYS AND MEANS.

BOR_Position: Support *05/05/2021*
IBLC_Recommendation: Support *04/15/2021*
Staff_Recommendation: Support

US HR 2337

SPONSOR: Neal [D]
TITLE: Noncovered Employment
INTRODUCED: 04/01/2021
DISPOSITION: Pending
SUMMARY:

Amends Title II of the Social Security Act to provide an equitable Social Security formula for individuals with noncovered employment and to provide relief for individuals currently affected by the Windfall Elimination Provision.

STATUS:

04/01/2021 INTRODUCED.
04/01/2021 To HOUSE Committee on WAYS AND MEANS.

HEALTHCARE

CA AB 1092

AUTHOR: Mayes [R]
TITLE: Public Employees' Retirement: Health Benefits
INTRODUCED: 02/18/2021
LAST AMEND: 04/26/2021
DISPOSITION: Pending
SUMMARY:

Precludes a person who has retired under PERS and who obtains work with a subsequent employer from receiving any health benefits offered under PEMHCA if the person's subsequent employer offers health care coverage that provides reasonably comparable benefits. Prohibits, among other things, employees, annuitants, and family members who become eligible to enroll on or after a specified date in Part A and Part B of Medicare from being enrolled in a basic health benefit plan.

STATUS:

04/26/2021 From ASSEMBLY Committee on PUBLIC EMPLOYMENT AND RETIREMENT With author's amendments.
04/26/2021 In ASSEMBLY. Read second time and amended. Re-referred to Committee on PUBLIC EMPLOYMENT AND RETIREMENT.

CA AB 1400

AUTHOR: Kalra [D]
TITLE: Guaranteed Health Care for All
INTRODUCED: 02/19/2021
DISPOSITION: Pending
SUMMARY:

Creates the Guaranteed Health Care for All Program, or CalCare, to provide comprehensive universal single-payer health care coverage and a health care cost control system for the benefit of all residents of the state. Provides that CalCare cover a wide range of medical benefits and other services and would incorporate the health care benefits and standards of other existing federal and state provisions. Creates the CalCare Board to govern CalCare, made up of 9 voting members.

STATUS:

02/19/2021 INTRODUCED.

L/ACERA Los Angeles County Employees Retirement Association
300 N. Lake Ave., Pasadena, CA 91101 / PO Box 7060, Pasadena, CA 91109-7060 / www.lacera.com / 626/564-6132 • 800/786-6464

June 23, 2021

The Honorable Richard Neal
Chairman
Committee on Ways and Means
U.S. House of Representatives
1102 Longworth House Office Building
Washington D.C. 20515

RE: Support H.R. 82 (Davis)—Social Security Fairness Act of 2021

Dear Chairman Neal:

The Los Angeles County Employees Retirement Association (LACERA) urges your Committee to consider H.R. 82 and pass this long overdue legislation.

LACERA is the largest county retirement system in the United States, administering retirement plan benefits for over 184,000 members. Our plan sponsor, the County of Los Angeles, withdrew from participation in Social Security in 1983. Our older members may have earned Social Security benefits as county employees, whereas newer members may have earned Social Security benefits from private sector employment before moving into public service.

Nationwide, there are millions more state and local government workers who receive similar plan benefits to those of LACERA. Many do not participate in Social Security. However, workers who move from private sector to public sector employment and are eligible for Social Security benefits receive substantially reduced benefits because of the Government Pension Offset (GPO) and the Windfall Elimination Provision (WEP).

These workers tend to begin public employment at a later age with the expectation that a significant portion of their retirement income will be satisfied by Social Security earned during covered employment. They are typically unaware of the GPO and WEP reductions until it is too late to remedy the situation. For those informed enough about the potential impact of GPO and WEP, a mid-career switch to the public sector would obviously look less appealing, and the reduced benefits would discourage recruitment into public service.

We strongly encourage your support in passing H.R. 82. A repeal of the GPO and WEP is a matter of fairness for workers entitled to Social Security benefits. Passing this legislation will greatly help protect the Social Security benefits for the millions of individuals who serve our public through education, public safety, and other careers in public service.

Respectfully submitted,

SANTOS H. KREIMANN
Chief Executive Officer

SHK:bwl

cc: Members of the U.S. House of Representatives
Committee on Ways and Means
The Honorable Nancy Pelosi
The Honorable Kevin McCarthy

LACERA

FOR INFORMATION ONLY

June 24, 2021

TO: Each Trustee
Board of Retirement
Board of Investments

FROM: Ted Granger TG
Interim Chief Financial Officer

FOR: July 7, 2021 Board of Retirement Meeting
July 14, 2021 Board of Investments Meeting

SUBJECT: **MONTHLY EDUCATION & TRAVEL REPORTS – May 2021**

Attached, for your review, are the Board and Staff Education & Travel Reports as of May 2021. These reports include travel (i.e., attended and canceled) during Fiscal Year 2020-2021.

REVIEWED AND APPROVED:

Santos H. Kreimann
Chief Executive Officer

TG/EW/krh

Attachments

c: J. Popowich
J. Grabel
S. Rice
K. Hines

LACERA

BOARD EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2020 - 2021
MAY 2021

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Alan Bernstein				
B	-	Edu - NACD Real Estate Industry Outlook: Insights, Impacts and Opportunities - VIRTUAL	09/02/2020 - 09/02/2020	Attended
	-	Edu - 2020 Milken Institute Virtual Global Conference - VIRTUAL	10/12/2020 - 10/21/2020	Attended
	-	Edu- 2020 SACRS Fall Virtual Conference - VIRTUAL	11/10/2020 - 11/13/2020	Attended
	-	Edu - Virtual Pension Bridge Alternatives - VIRTUAL	01/26/2021 - 01/28/2021	Attended
	-	Edu - CII's 2021 Spring Conference - VIRTUAL	03/08/2021 - 03/10/2021	Attended
Elizabeth Ginsberg				
B	-	Edu - CALAPRS Principles for Trustees - VIRTUAL	08/18/2020 - 08/26/2020	Attended
Vivian Gray				
B	-	Edu - SACRS Public Pension Investment Management Program 2020 - VIRTUAL	07/28/2020 - 08/13/2020	Attended
	-	Edu - Koried Black Directors' Virtual Workshop - VIRTUAL	10/15/2020 - 10/15/2020	Attended
	-	Edu- 2020 SACRS Fall Virtual Conference - VIRTUAL	11/10/2020 - 11/13/2020	Attended
	-	Edu - Milken Institute: Walk the Talk: Investing in the Future of Black Banks, Entrepreneurship, and Opportunity - VIRTUAL	02/24/2021 - 02/24/2021	Attended
	-	Edu - CALAPRS General Assembly - VIRTUAL	03/08/2021 - 03/09/2021	Attended
	-	Edu - NASP 11th Annual Day of Education in Private Equity - VIRTUAL	03/25/2021 - 03/26/2021	Attended
	-	Edu - NCPERS 2021 Legislative Conference - VIRTUAL	04/20/2021 - 04/20/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
	-	Edu - NACD Women in the Boardroom: Pathways to a Board Seat - VIRTUAL	05/18/2021 - 05/18/2021	Attended
David Green				
B	-	Edu - PPI 2020 Summer Roundtable - Los Angeles CA	07/14/2020 - 07/16/2020	Attended
	-	Edu - Pacific Council - “Beyond the Horizon” Summit - VIRTUAL	07/20/2020 - 07/24/2020	Attended
	-	Edu - The Pacific Council on International Policy's PolicyWest 2020 - VIRTUAL	12/03/2020 - 12/04/2020	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
Elizabeth Greenwood				
B	-	Edu - 2020 Milken Institute Virtual Global Conference - VIRTUAL	10/12/2020 - 10/21/2020	Attended
	-	Edu- PPI 2020 Asia Pacific Roundtable - VIRTUAL	10/20/2020 - 10/22/2020	Attended
	-	Edu - Yale School of Management Executive Education -Women's Leadership Program - VIRTUAL	11/18/2020 - 11/18/2020	Attended
James Harris				
B	-	Edu - SACRS Sexual Harassment Prevention Training - VIRTUAL	07/15/2020 - 07/15/2020	Attended
	-	Edu - SACRS Public Pension Investment Management Program 2020 - VIRTUAL	07/28/2020 - 08/13/2020	Attended

LACERA

BOARD EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2020 - 2021
MAY 2021

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Patrick Jones				
B	-	Edu - Goldman Sachs The Pandemic Economy: Rates, the Fed & the Road Ahead - VIRTUAL	04/30/2021 - 04/30/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
Shawn Kehoe				
B	-	Edu- PPI 2020 Asia Pacific Roundtable - VIRTUAL	10/20/2020 - 10/22/2020	Attended
	-	Edu - NCPERS Fall Conference - VIRTUAL	02/02/2021 - 02/03/2021	Attended
Joseph Kelly				
B	-	Edu - NACD Financial Services Industry Outlook: Future Trends in Middle Market Credit - VIRTUAL	01/07/2021 - 01/07/2021	Attended
	-	Edu - NACD Hospitality and Travel Industry Outlook: Insights, Impacts, and Opportunities - VIRTUAL	01/27/2021 - 01/27/2021	Attended
	-	Edu - PPI Virtual Roundtable - VIRTUAL	02/16/2021 - 02/18/2021	Attended
	-	Edu - CII's 2021 Spring Conference - VIRTUAL	03/08/2021 - 03/10/2021	Attended
	-	Edu - NACD - Conversation with Walter Isaacson - VIRTUAL	03/08/2021 - 03/08/2021	Attended
	-	Edu - NASP 11th Annual Day of Education in Private Equity - VIRTUAL	03/25/2021 - 03/26/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
Keith Knox				
B	-	Edu - PPI 2020 Summer Roundtable - Los Angeles CA	07/14/2020 - 07/16/2020	Attended
	-	Edu - SACRS Public Pension Investment Management Program 2020 - VIRTUAL	07/28/2020 - 08/13/2020	Attended
	-	Edu - CII & NYU Corporate Governance Bootcamp - VIRTUAL	09/23/2020 - 09/25/2020	Attended
	-	Edu - 2020 Milken Institute Virtual Global Conference - VIRTUAL	10/12/2020 - 10/21/2020	Attended
	-	Edu - CALAPRS Virtual Trustees Round Table - VIRTUAL	10/23/2020 - 10/23/2020	Attended
	-	Edu - PPI Virtual Roundtable - VIRTUAL	02/16/2021 - 02/18/2021	Attended
	-	Edu - TLF Political Accountability and Investment - VIRTUAL	02/23/2021 - 02/23/2021	Attended
	-	Edu - NCPERS Accredited Fiduciary Program (Module 1 & 2) - VIRTUAL	03/02/2021 - 03/05/2021	Attended
	-	Edu - NCPERS Accredited Fiduciary Program (Module 3 & 4) - VIRTUAL	03/09/2021 - 03/12/2021	Attended
	-	Edu - NCPERS 2021 Legislative Conference - VIRTUAL	04/20/2021 - 04/20/2021	Attended
	-	Edu - 2021 Annual Virtual Pension Bridge Conference - VIRTUAL	05/04/2021 - 05/07/2021	Attended
	-	Edu - CALAPRS Virtual Trustees Round Table - VIRTUAL	05/10/2021 - 05/10/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
Wayne Moore				
B	-	Edu- NASP 31st Annual Virtual Pension & Financial Services Conference - VIRTUAL	12/07/2020 - 12/10/2020	Attended
	-	Edu - NASP 11th Annual Day of Education in Private Equity - VIRTUAL	03/25/2021 - 03/26/2021	Attended

BOARD EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2020 - 2021
MAY 2021

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Ronald Okum				
B	-	Edu- 2020 SACRS Fall Virtual Conference - VIRTUAL	11/10/2020 - 11/13/2020	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
William Pryor				
B	-	Edu - NCPERS Fall Conference - VIRTUAL	02/02/2021 - 02/03/2021	Attended
Les Robbins				
B	-	Edu - IFEBP 66th Annual Employee Benefits Conference - VIRTUAL	11/10/2020 - 11/13/2020	Attended
	-	Edu - NCPERS 2021 Legislative Conference - VIRTUAL	04/20/2021 - 04/20/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
X	-	Edu - IFEBP 66th Annual Employee Benefits Conference - Honolulu HI	11/15/2020 - 11/18/2020	Host Canceled
Gina Sanchez				
B	-	Edu - SACRS Sexual Harassment Prevention Training - VIRTUAL	07/15/2020 - 07/15/2020	Attended
	-	Edu - 2020 Milken Institute Virtual Global Conference - VIRTUAL	10/12/2020 - 10/21/2020	Attended
	-	Edu - 2020 Virtual NACD Summit - VIRTUAL	10/12/2020 - 10/13/2020	Attended
	-	Edu - CALAPRS Virtual Trustees Round Table - VIRTUAL	10/23/2020 - 10/23/2020	Attended
	-	Edu- 2020 SACRS Fall Virtual Conference - VIRTUAL	11/10/2020 - 11/13/2020	Attended
	-	Edu - Harvard Business School Executive Education - Audit Committees - VIRTUAL	11/12/2020 - 11/14/2020	Attended
	-	Edu - NCPERS Fall Conference - VIRTUAL	02/02/2021 - 02/03/2021	Attended
	-	Edu - Virtual Oxford Scenarios Programme - VIRTUAL	04/20/2021 - 05/20/2021	Attended
	-	Edu - 2021 Annual Virtual Pension Bridge Conference - VIRTUAL	05/04/2021 - 05/07/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended
	-	Edu - NACD Women in the Boardroom: Pathways to a Board Seat - VIRTUAL	05/18/2021 - 05/18/2021	Attended
Herman Santos				
B	-	Edu- LAVCA's Annual Investor Meeting - VIRTUAL	09/14/2020 - 09/17/2020	Attended
	-	Edu - Nossaman's 2020 Public Pensions and Investments Fiduciaries' Forum - VIRTUAL	10/01/2020 - 10/01/2020	Attended
	-	Edu- 2020 SACRS Fall Virtual Conference - VIRTUAL	11/10/2020 - 11/13/2020	Attended
	-	Edu - Virtual PPI Salon: Gearing for Gridlock - VIRTUAL	12/10/2020 - 12/10/2020	Attended
	-	Edu - PPI Virtual Roundtable - VIRTUAL	02/16/2021 - 02/18/2021	Attended
	-	Edu - CII's 2021 Spring Conference - VIRTUAL	03/08/2021 - 03/10/2021	Attended
	-	Edu - NASP 11th Annual Day of Education in Private Equity - VIRTUAL	03/25/2021 - 03/26/2021	Attended
	-	Edu - PREA Spring Conference - VIRTUAL	03/25/2021 - 03/26/2021	Attended
	-	Edu - PREA International Affinity Group Program - VIRTUAL	04/01/2021 - 04/01/2021	Attended
	-	Edu - SACRS Spring Conference - VIRTUAL	05/11/2021 - 05/14/2021	Attended

Category Legend:
A - Pre-Approved/Board Approved
B - Educational Conferences and Administrative Meetings in CA where total cost is no more than $2,000 per Trustee Travel Policy; Section III.A
C - Second of two conferences and/or meetings counted as one conference per Trustee Education Policy Section IV.C.2 and Trustee Travel Policy Section IV.
X - Canceled events for which expenses have been incurred.
Z - Trip was Canceled - Balance of $0.00

STAFF EDUCATION AND TRAVEL REPORT
FOR FISCAL YEAR 2020 - 2021
MAY 2021

Attendee		Purpose of Travel - Location	Event Dates	Travel Status
Executive Offices				
Bob Schlotfelt	1	Admin - Conduct Site Visit to Mainline/DMI Data Center - Phoenix AZ	05/27/2021 - 05/27/2021	Attended
Systems				
Steven Alexander	1	Admin - Conduct Site Visit to Mainline/DMI Data Center - Phoenix AZ	05/27/2021 - 05/27/2021	Attended
Matthew Behrens	1	Admin - Conduct Site Visit to Mainline/DMI Data Center - Phoenix AZ	05/27/2021 - 05/27/2021	Attended
Irwin Devries	1	Admin - Conduct Site Visit of Mesa, AZ Facility - Mesa AZ	12/03/2020 - 12/05/2020	Attended
Eddie Paz	1	Admin - Conduct Site Visit to Mainline/DMI Data Center - Phoenix AZ	05/27/2021 - 05/27/2021	Attended
Celso Templo	1	Admin - Conduct Site Visit of Mesa, AZ Facility - Mesa AZ	10/09/2020 - 10/09/2020	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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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
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