LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Board of Administration Agenda

REGULAR MEETING

TUESDAY, NOVEMBER 10, 2020

TIME: 10:00 A.M.

MEETING LOCATION:

In conformity with the Governor's Executive Order N-29-20 (March 17, 2020) and due to the concerns over COVID-19, the LACERS Board of Administration's November 10, 2020, meeting will be conducted via telephone and/or videoconferencing.

Important Message to the Public

Information to call-in to participate:
Dial: (669) 900-6833 or (346) 248-7799
Meeting ID# 865 5660 6569

Instructions for call-in participants:

1- Dial in and enter Meeting ID
2- Automatically enter virtual "Waiting Room"
3- Automatically enter Meeting
4- During Public Comment, **press *9** to raise hand
5- Staff will call out the last 3-digits of your phone number to make your comment

Information to listen only: Live Board Meetings can be heard at: (213) 621-CITY (Metro), (818) 904-9450 (Valley), (310) 471-CITY (Westside), and (310) 547-CITY (San Pedro Area).

Disclaimer to participants

Please be advised that all LACERS Board and Committee Meeting proceedings are audio recorded.

President: Cynthia M. Ruiz
Vice President: Sung Won Sohn

Commissioners: Annie Chao
Elizabeth Lee
Sandra Lee
Nilza R. Serrano
Michael R. Wilkinson

Manager-Secretary: Neil M. Guglielmo

Executive Assistant: Ani Ghoukassian

Legal Counsel: City Attorney's Office
Public Pensions General
Counsel Division

Notice to Paid Representatives

If you are compensated to monitor, attend, or speak at this meeting, City law may require you to register as a lobbyist and report your activity. See Los Angeles Municipal Code §§ 48.01 *et seq*. More information is available at ethics.lacity.org/lobbying. For assistance, please contact the Ethics Commission at (213) 978-1960 or ethics.commission@lacity.org.

Request for services

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Sign Language Interpreters, Communication Access Real-Time Transcription, Assistive Listening Devices, Telecommunication Relay Services (TRS), or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. Due to difficulties in securing Sign Language Interpreters, five or more business days' notice is strongly recommended. For additional information, please contact: Board of Administration Office at ***(213) 855-9348*** and/or email at ***ani.ghoukassian@lacers.org***.

CLICK HERE TO ACCESS BOARD REPORTS

I. PUBLIC COMMENTS AND GENERAL PUBLIC COMMENTS ON MATTERS WITHIN THE BOARD'S JURISDICTION AND COMMENTS ON ANY SPECIFIC MATTERS ON THE AGENDA – *THIS WILL BE THE ONLY OPPORTUNITY FOR PUBLIC COMMENT* - **PRESS *9 TO RAISE HAND DURING PUBLIC COMMENT PERIOD**

II. APPROVAL OF MINUTES FOR THE REGULAR MEETING OF OCTOBER 13, 2020 AND POSSIBLE BOARD ACTION

III. BOARD PRESIDENT VERBAL REPORT

IV. GENERAL MANAGER VERBAL REPORT

A. REPORT ON DEPARTMENT OPERATIONS

B. UPCOMING AGENDA ITEMS

C. MEMBER SERVICES DIVISION METRICS SHOWCASE FY 19-20

V. RECEIVE AND FILE ITEMS

A. MARKETING CESSATION REPORT NOTIFICATION TO THE BOARD

B. BENEFITS PAYMENTS APPROVED BY GENERAL MANAGER

C. COMMISSIONER ELIZABETH LEE BOARD EDUCATION EVALUATION ON IFEBP, INVESTMENTS IN TODAY'S CLIMATE & BEYOND, VIRTUAL; AUGUST 18-19, 2020

D. COMMISSIONER WILKINSON BOARD EDUCATION EVALUATION ON PREA ANNUAL INVESTOR CONFERENCE, VIRTUAL; OCTOBER 1-2, 2020

E. COMMISSIONER RUIZ BOARD EDUCATION EVALUATION ON 2020 MILKEN INSTITUTE GLOBAL CONFERENCE, VIRTUAL; OCTOBER 12-21, 2020

F. COMMISSIONER SOHN BOARD EDUCATION EVALUATION ON 2020 MILKEN INSTITUTE GLOBAL CONFERENCE, VIRTUAL; OCTOBER 12-21, 2020

VI. BOARD/DEPARMENT ADMINISTRATION

A. PRESENTATION BY SEGAL CONSULTING OF THE ACTUARIAL VALUATIONS AS OF JUNE 30, 2020 AND PROPOSED CITY CONTRIBUTION RATES FOR FISCAL YEAR 2021-22 AND POSSIBLE BOARD ACTION

B. MID-YEAR SUPPLEMENTAL BUDGET ADJUSTMENTS FOR FISCAL YEAR 2020-21 AND POSSIBLE BOARD ACTION

C. APPROVAL OF LACERS REDESIGNED LOGO AND POSSIBLE BOARD ACTION

VII. INVESTMENTS

A. CHIEF INVESTMENT OFFICER VERBAL REPORT

B. PRIVATE REAL ESTATE PORTFOLIO PERFORMANCE REVIEW FOR THE PERIOD ENDING JUNE 30, 2020

C. PRIVATE EQUITY PORTFOLIO PERFORMANCE REVIEW FOR THE PERIOD ENDING JUNE 30, 2020

D. NOTIFICATION OF COMMITMENT OF UP TO $30 MILLION IN STELLEX CAPITAL PARTNERS II LP

E. NOTIFICATION OF COMMITMENT OF UP TO $50 MILLION IN FORTRESS CREDIT OPPORTUNITIES FUND V EXPANSION (A) LP

VIII. COMMITTEE REPORT(S)

A. GOVERNANCE COMMITTEE VERBAL REPORT FOR THE MEETING ON NOVEMBER 10, 2020

IX. OTHER BUSINESS

X. NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, November 24, 2020 at 10:00 a.m. at LACERS, 977 N. Broadway, Suite 260, Los Angeles, CA 90012, and/or via telephone and/or videoconferencing. Please continue to view the LACERS website for updated information on public access to Board meetings while response to public health concerns relating to the novel coronavirus continue.

XI. ADJOURNMENT

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

In conformity with the Governor's Executive Order N-29-20 (March 17, 2020)
and due to the concerns over COVID-19, the
LACERS Board of Administration's
October 13, 2020, meeting was conducted
via telephone and/or videoconferencing.

Agenda of: Nov. 10, 2020

Item No: II

October 13, 2020

10:00 a.m.

PRESENT via Videoconferencing:	President:	Cynthia M. Ruiz
	Commissioners:	Annie Chao Elizabeth Lee Nilza R. Serrano Michael R. Wilkinson
	Manager-Secretary:	Neil M. Guglielmo
	Legal Counselor:	James Napier
ABSENT:	Vice President: Commissioner:	Sung Won Sohn Sandra Lee
PRESENT at LACERS offices:	Executive Assistant:	Ani Ghoukassian

---

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

Item I was taken out of order.

II

APPROVAL OF MINUTES FOR THE REGULAR MEETING OF SEPTEMBER 8, 2020 AND POSSIBLE BOARD ACTION – Commissioner Serrano moved approval, seconded by Commissioner Chao, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Serrano, Wilkinson, and President Ruiz -5; Nays, None.

III

BOARD PRESIDENT VERBAL REPORT – President Ruiz expressed her appreciation for everyone's patience during these challenging times. She also stated that she is attending the Milken Institute Virtual Conference and found that both opportunities and disparities have been made during these times and women have been more affected by job loss and needing to work and take care of family at home.

IV

GENERAL MANAGER VERBAL REPORT

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

- Member Service Center stats update
- Online web form survey-initial feedback update
- LAWA and City SIPs
- Open Enrollment
- COVID-19 educational webinar
- Aging Mastery Program
- GFOA Certificate of Achievement for Excellence in Financial Reporting
- Guiding Principles Holiday Virtual Event scheduled for December 16th
- LACERS HQ status
- City of Los Angeles budget update

B. UPCOMING AGENDA ITEMS – Neil M. Guglielmo, General Manager, advised the Board on the following upcoming agenda items:

- Cyber Security Ad-Hoc Meeting scheduled for October 27th, 9:00 a.m.

C. 2020 STRATEGIC PLAN UPDATE REPORT – Vikram Jadhav, Innovation Director, presented and discussed this item with the Board.

V

RECEIVE AND FILE ITEMS

A. MARKETING CESSATION NOTIFICATION TO THE BOARD – This report was received by the Board and filed.

B. BENEFITS PAYMENTS APPROVED BY GENERAL MANAGER – This report was received by the Board and filed.

Item I taken out of order.

I

PUBLIC COMMENTS AND GENERAL PUBLIC COMMENTS ON MATTERS WITHIN THE BOARD'S JURISDICTION AND COMMENTS ON ANY SPECIFIC MATTERS ON THE AGENDA – *THIS WILL BE THE ONLY OPPORTUNITY FOR PUBLIC COMMENT* – **PRESS *9 TO RAISE HAND DURING PUBLIC COMMENT PERIOD** – President Ruiz asked if any persons wanted to make a general public comment to which there was no response.

VI

INVESTMENTS

A. CHIEF INVESTMENT OFFICER VERBAL REPORT – Rod June, Chief Investment Officer, reported on the portfolio value at $19.79 billion as of October 12, 2020. Mr. June discussed the following items:

- Update on the six Investment Manager searches
- Upcoming Board items: October 27th Board: Investment Manager contracts, reports on the securities lending de-risking, and temporary increased cash holdings and rebalancing policy

President Ruiz recessed the Regular Meeting at 10:52 a.m. to convene in Closed Session.

VII

DISABILITY RETIREMENT APPLICATION(S)

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

VIII

CLOSED SESSION

A. CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54957(b)(1): GENERAL MANAGER 2019-20 PERFORMANCE EVALUATION AND POSSIBLE BOARD ACTION

President Ruiz reconvened the Regular Meeting at 11:08 a.m. and announced that the Board unanimously approved the Disability Retirement Application of Robert Barabino and decided to table Item VIII-A until the October 27, 2020 Board Meeting.

IX

BOARD/DEPARTMENT ADMINISTRATION

A. CONSIDERATION OF 2019-20 GENERAL MANAGER'S MERIT PAY AND POSSIBLE BOARD ACTION – This item was tabled until the October 27, 2020 Board Meeting.

B. DESIGNATION OF CHIEF ACCOUNTING EMPLOYEE AND POSSIBLE BOARD ACTION – Commissioner Elizabeth Lee moved approval of the following Resolution:

DESIGNATION OF LACERS'
CHIEF ACCOUNTING EMPLOYEE

<u>RESOLUTION 201013-B</u>

WHEREAS, pursuant to Los Angeles City Charter Section 504(b), the head of each department is required to appoint an employee of the department, other than a member of the board or the chief administrative officer, to serve as Chief Accounting Employee; and

WHEREAS, Departmental Chief Accountant Rahoof (Wally) Oyewole oversees LACERS' Fiscal Management Section and is well qualified to serve as LACERS' Chief Accounting Employee;

NOW, THEREFORE, BE IT RESOLVED, that Rahoof (Wally) Oyewole is hereby appointed to serve as LACERS' Chief Accounting Employee.

Which motion was seconded by Commissioner Chao, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Serrano, Wilkinson, and President Ruiz -5; Nays, None.

C. LACERS LOGO REDESIGN AND POSSIBLE BOARD ACTION – Vikram Jadhav, Innovation Director, presented and discussed this item with the Board. The Board provided their input on the new LACERS logo and staff will re-introduce this item at a future Board Meeting to include multiple options for the Board.

X

OTHER BUSINESS – No other business was discussed.

XI

NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, October 27, 2020 at 10:00 a.m. at LACERS, 977 N. Broadway, Suite 260, Los Angeles, CA 90012, and/or via telephone and/or videoconferencing. Please continue to view the LACERS website for updated information on public access to Board meetings while response to public health concerns relating to the novel coronavirus continue.

XII

ADJOURNMENT – There being no further business before the Board, President Ruiz adjourned the Meeting at 11:32 a.m.

____

Cynthia M. Ruiz
President

____

Neil M. Guglielmo
Manager-Secretary

FY 19-20
METRICS SHOWCASE
MEMBER SERVICES DIVISION
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Strategic Plan

To provide outstanding customer service.

63,036

MEMBER INQUIRIES

THE DETAILS

Emails	12,913
In-Person Visits	3,643
MyLACERS	1,670
Phone Calls	37,714
Voicemails	7,096

OBJECTIVE A: Identify and provide department-wide service standards that meet Members' expectations.

Member Service Agreement

Members will be treated with **professionalism, respect, kindness** and **caring**

Members should have easy, **24-hour online access** to services and information as first contact resolution is our goal

Every question deserves an answer, and inquiries will be **responded to promptly** with follow up until completion, utilizing teamwork whenever possible

Members will be informed of progress and **receive updates** regarding the status of their requests

LACERS staff will provide Members with **clear**, **accurate** and **consistent information**

Member interactions should be **simple** and **streamlined**, with LACERS looking for opportunities for further improvement

Automated, self-service, and other **innovative options** will be reviewed and expanded where possible (**balanced with security** of Member data) for Member convenience

LACERS will collaborate with Members to ensure services are designed and managed to **meet Members' needs**

Mistakes happen--LACERS **staff will take ownership to communicate** with involved parties, quickly resolve issues, and establish processes to avoid future mistakes

INITIATIVE	TARGET	ACTUAL
Call Wait Time	2.5 mins	87%
Abandoned Calls	8%	9%
1-Day Response	100%	100%
Member Satisfaction	97%	97.4%

Member Service Center

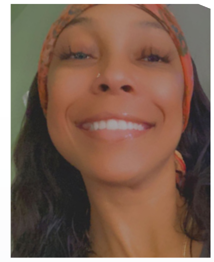
Dedicated to Excellence in Member Service

WENDY JOHNSON
Supervisor
Benefits Analyst

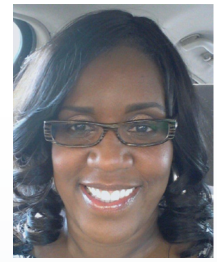
Sandra Ford-James
Benefits Specialist

Amoree Aguilar
Administrative Clerk

Anthony Reyes
Relief Worker



Charnaya Blackburn
Administrative Clerk

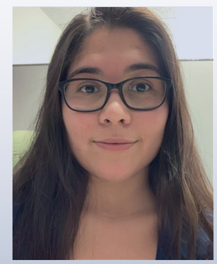


Gina Henderson
Office Trainee

Lisseth Grande
Office Service Asst.

Jennifer Romero
Administrative Clerk

Jesus Navarro
Sr. Admin Clerk



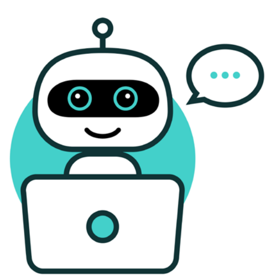
Ruby Mendez-Avila
Sr. Admin Clerk*

Interesting Statistics

4:30	Average Call Handle Time
51:28	Longest Call Handle Time
50%	Calls are from Retirees
25%	Calls are from Active Members
287	Highest Weekly Calls Handled by one Staff
3	Top Months for Inquires: October, July, January

What we're working on...

LACERS Chatbot...loading



* On loan via 120-day mayoral transfer.

OBJECTIVE B: Make retirement information and planning resources more accessible to Members through various communication channels.

Engagement

This year we implemented a goal of engaging each City Department annually with useful and pertinent information via seminars, new employee orientations, tabletop discussions or e-packets. We are pleased to report that we have engaged **75%** more departments this year than the previous year.

SEMINARS

16	ON-SITE SEMINARS
42	OFF-SITE SEMINARS
14	DEPTS. SERVICED
2,019	MEMBERS PARTICIPATED

WEBSITE

UNIQUE VISITS

83,874

TOP VIEWED PAGES

Forms	16,891
FAQs	12,194
Agendas	11,211

DEVICE USAGE

Desktop	75%
Mobile	22%
Tablet	3%

YOUTUBE

SUBSCRIBERS

523

TOP VIEWED VIDEOS

Tier 1 Overview	2,152
CSIP Webinar	1,160
Health Enrollment	884

MINI VIDEO SERIES

Family Death Benefit	313
Taxes & COLAs	287
Eligibility	272

MYLACERS

MEMBER ACCOUNTS

17,277

ACTIVE	57%
RETIREES	35%
DEFERRED	3%

TARGET INCREASE 10%

FY18-19	11,923
FY 19-20	15,950 34%
Current	17,277 8%

Member Engagement

Dedicated to Creating Innovative and Responsive Strategies to Engage our Members

HEATHER RAMIREZ
Manager
Sr. Benefits Analyst I

Veronica Flores
Administrative Clerk

Gabriel Perez
Benefits Analyst

Nathan Herkelrath
Benefits Analyst

Tiffany Obembe
Benefits Analyst

Vanessa Lopez
Benefits Analyst

Highlights

Launched Amazon Connect, LACERS YouTube, Website, Zoom Webinars

16	Retirement Video Vignettes Created
51%	Active/Retiree E-Newsletter Open Rate
20%	Above Peers with E-Newsletter Open Rate
1	Spanish Retirement Seminar

What we're working on...

Retirement Application Portal, Expanded Spanish Literature, and Interactive Digital Newsletter

Fiscal Year 19-20 (FY 19-20) was fraught with a lot of change and a new way of serving our Members. Our goals were centered around streamlining processes to cut waste, identifying new and creative ways of completing our work as a means to serve our members in excellence with a focus on engaging our members and providing them with timely and pertinent information. I am proud of the accomplishments we have made and look forward to the exciting things we are working on for the future!

TANEDA K. LARIOS,
Division Manager, MSD

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM
Securing Your Tomorrows

Agenda of:	**NOVEMBER 10, 2020**
Item No:	**V-A**

MARKETING CESSATION REPORT
NOTIFICATION TO THE BOARD

The Board's Marketing Cessation Policy was adopted in order to prevent and avoid the appearance of undue influence on the Board or any of its Members in the award of investment-related and other service contracts. Pursuant to this Policy, this notification procedure has been developed to ensure that Board Members and staff are regularly apprised of firms for which there shall be no direct marketing discussions about the contract or the process to award it; or for contracts in consideration of renewal, no discussions regarding the renewal of the existing contract.

Firms listed in Attachments 1 and 2 are subject to limited communications with Board Members and staff pursuant to the Policy and will appear and remain on the list, along with the status, from the first publicized intention to contract for services through the award of the contract. Lists of current LACERS' contracts are on file in the Board office and are available upon request.

Attachments: 1) Contracts Under Consideration for Renewal
2) Active RFPs and RFQs

ATTACHMENT 1

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM CONTRACTS LIST
FOR THE NOVEMBER 10, 2020 BOARD MEETING

CONTRACTS PENDING FINAL EXECUTION

NO.	VENDOR / CONSULTANT	DESCRIPTION	INCEPTION DATE	EXPIRATION DATE	MARKETING CESSATION STATUS	RESTRICTED PERIOD*	
						START	END
HEALTH BENEFITS ADMINISTRATION							
1.	Anthem 2020	Medical HMO & PPO	1/1/2020	12/31/2020	Board approved on 8/27/2019; contract under review for execution.	1/1/2020	12/31/2020
2.	Anthem Blue View Vision 2020	Vision Services Contract	1/1/2020	12/31/2020	Board approved on 8/27/2019; contract under review for execution.	1/1/2020	12/31/2020
3.	Delta Dental 2020	Dental PPO and HMO	1/1/2020	12/31/2020	Board approved on 8/27/2019; contract under review for execution.	1/1/2020	12/31/2020
4.	Kaiser 2020	Medical HMO	1/1/2020	12/31/2020	Board approved on 8/27/2019; contract under review for execution.	1/1/2020	12/31/2020
5.	SCAN 2020	Medical HMO	1/1/2020	12/31/2020	Board approved on 8/27/2019; contract under review for execution.	1/1/2020	12/31/2020

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM CONTRACTS LIST
FOR THE NOVEMBER 10, 2020 BOARD MEETING

CONTRACTS PENDING FINAL EXECUTION

NO.	VENDOR / CONSULTANT	DESCRIPTION	INCEPTION DATE	EXPIRATION DATE	MARKETING CESSATION STATUS	RESTRICTED PERIOD*	
						START	END
6.	United Healthcare 2020	Medical HMO	1/1/2020	12/31/2020	Board approved on 8/27/2019; contract under review for execution.	1/1/2020	12/31/2020
7.	Keenan & Associates	Health and Welfare Consultant	3/1/2021	6/30/2022	Board approved contract extension on 8/11/2020; contract execution in progress.	8/11/2020	11/11/2021
INVESTMENTS							
8.	Quantitative Management Associates, LLC	Active Non-U.S. Equities Emerging Markets Core	1/1/2014	12/31/2020	Pending Board approval on 10/27/2020.	10/1/2020	4/30/2021
9.	AQR Capital Management, LLC	Active Non-U.S. Small Cap Equities	2/1/2014	1/31/2021	Pending Board approval on 10/27/2020.	11/1/2020	4/30/2021

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM CONTRACTS LIST
FOR THE NOVEMBER 10, 2020 BOARD MEETING

CONTRACTS PENDING FINAL EXECUTION

NO.	VENDOR / CONSULTANT	DESCRIPTION	INCEPTION DATE	EXPIRATION DATE	MARKETING CESSATION STATUS	RESTRICTED PERIOD*	
						START	END

Start Date - The estimated start date of the restricted period is three (3) months prior to the expiration date of the current contract. No entertainment or gifts of any kind should be accepted from the restricted source as of this date. Firms intending to participate in the Request for Proposal process are also subject to restricted marketing and communications.

End Date - The end date is the date of final contract execution. This date is estimated for general contracts, investment contracts, and health carrier contracts to be three (3) months, six (6) months, and twelve (12) months, respectively, following the Board approval of contract renewal.

ATTACHMENT 2

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
CONTRACTS LIST FOR THE NOVEMBER 10, 2020 BOARD MEETING

ACTIVE RFPs AND RFQs

NO.	DESCRIPTION	MARKETING CESSATION STATUS AND VENDOR RESPONSES
		INVESTMENTS
1	Core Fixed Income Mandate Search	**RFP Release Date:** August 19, 2019 **Submission Deadline:** October 4, 2019 **Status:** On 9/8/20, the Investment Committee concurred with staff's recommendation to advance the following eight managers as semi-finalists: 1. Robert W. Baird & Co., Inc. 2. C.S. McKee, L.P. 3. Garcia Hamilton & Associates, L.P. 4. Income Research & Management 5. J.P. Morgan Asset Management 6. Loomis, Sayles & Company, L.P. 7. Neuberger Berman Investment Advisers LLC 8. Segal Bryant & Hamill, LLC Due diligence in progress. **List of Respondents:** Amundi Pioneer Institutional Asset Management, Inc., Baird Advisors, BlackRock, Inc., BMO Global Asset Management, Brown Brothers Harriman & Co., C.S. McKee, L. P., Calvert Research and Management (Calvert or CRM),Conning, Dimensional Fund Advisors LP, Dodge & Cox, EARNEST Partners, LLC, FIAM LLC, Galliard Capital Management, Garcia Hamilton & Associates, L.P., Goldman Sachs Asset Management L.P., Guggenheim Partners Investment Management, LLC, Income Research & Management, Integrity Fixed Income, Management, LLC, Invesco Advisers, Inc., J.P. Morgan Asset Management, Jennison Associates LLC, Lazard Asset Management LLC, LM Capital Group, LLC, Longfellow Investment Management Co., LLC, Loomis, Sayles & Company, L.P, Manulife Investment Management, MFS Institutional Advisors, Inc., Morgan Stanley Investment Management, National Investment Services, Neuberger Berman, Nuveen, LLC, Payden & Rygel, PGIM Fixed Income, Piedmont Investment Advisors, Inc., PIMCO, Princeton Asset Management, LLC, Progress Investment Management Company, LLC, Pugh Capital Management, Inc,. Quadratic Capital Management LLC, Ramirez Asset Management, Schroder Investment Management North America Inc., Securian Asset Management, Inc., Segall Bryant & Hamill, Sit Investment Associates, Inc. (Sit), SLC Management, Smith Graham & Co., Investment Advisors, L.P., Sterling Capital Management LLC, T. Rowe Price Associates, Inc., TCW Group, Inc., The Capital Group Companies,Inc., Voya Investment Management (Voya IM), Wellington Management Company LLP, Wells Fargo Asset Management, Western Asset Management Company, LLC

ATTACHMENT 2

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
CONTRACTS LIST FOR THE NOVEMBER 10, 2020 BOARD MEETING

ACTIVE RFPs AND RFQs

NO.	DESCRIPTION	MARKETING CESSATION STATUS AND VENDOR RESPONSES
2	Emerging Market Debt Mandate Search	**RFP Release Date:** June 19, 2019 **Submission Deadline:** July 22, 2019 **Status:** On September 8, 2020, the Board awarded contracts to: PGIM Fixed Income and Wellington Management Company LLP. Negotiations in progress. **List of Respondents:** Eaton Vance Management, Ashmore Investment Management, Capital Group, Fidelity Institutional Asset Management, GAM USA, INC., Northwest Passage Capital Advisors LLC, Payden & Rygel, PGIM Fixed Income, Schroder Investment Management North America Inc., Stone Harbor Investment Partners LP, LM Capital Group, Wellington Management Company LLP, Manulife Investment Management, Global Evolution USA LLC, GoldenTree Asset Management LP, Goldman Sachs Asset Management L.P., Investec Asset Management, Nuveen, A TIAA Company
3	Private Credit Mandate Search	**RFP Release Date:** December 10, 2018 **Submission Deadline:** January 18, 2019 **Status:** On July 23, 2019, the Board awarded contracts to Alcentra Limited, Benefit Street Partners L.L.C., Crescent Capital Group LP, and Monroe Capital LLC. On May 26, 2020, the Board rescinded the contract award to Alcentra Limited. Negotiations in progress. **List of Respondents:** Alcentra Limited, Barings LLC, MB Global Partners, LLC, Backcast Partners Management LLC, BlackRock, Inc., CLSA Capital Partners (HK) Limited, Cross Ocean Adviser LLP, Clearwater Capital Partners (Fiera Capital Corporation), Guggenheim Partners, LLC, Goldman Sachs Asset Management, L.P., Pemberton Capital Advisors LLP, Kayne Anderson Capital Advisors, L.P., Maranon Capital, L.P., Bain Capital Credit, LP, Breakwater Management LP, Carlyle Global Credit Investment Management L.L.C., Crescent Capital Group LP, MV Credit Partners LLP, New Mountain Capital, LLC, Park Square Capital USA LLC, Tor Investment Management (Hong Kong) Limited, AlbaCore Capital LLP, Muzinich & Co., Inc., Kartesia Management S.A., Medalist Partners, LP, NXT Capital Investment Advisers, LLC, Owl Rock Capital Partners, PennantPark Investment Advisers, PIMCO Investments LLC, Deerpath Capital Management, LP, Brightwood Capital Advisors, Magnetar Capital LLC, MC Credit Partners LP, Oaktree Capital Management, L.P., THL Credit Advisors LLC, White Oak Global Advisors, LLC, Benefit Street Partners L.L.C., EntrustPermal / Blue Ocean GP LLC, Willow Tree Credit Partners LP, Monroe Capital LLC, Runway Growth Capital LLC, Stellus Capital Management, LLC

***RESTRICTED PERIOD FOR REQUEST FOR PROPOSAL OR REQUEST FOR QUALIFICATIONS:**

Start Date - The restricted period commences on the day the Request for Proposal is released.

End Date - The restricted period ends on the day the contract is executed.

BENEFIT PAYMENTS APPROVED BY GENERAL MANAGER: ITEM V-B

Pursuant to the authority delegated to the General Manager under Board Rule GMA 1, General Manager Authorization, adopted by the Board of Administration on June 14, 2016, the following benefit payments have been approved by the General Manager:

SERVICE RETIREMENTS

Member Name	Service	Department	Classification
Abdellah, Maria A	17	Dept. of Airports	Custodian Airport
Adame, Gerardo	14	Dept. of Rec. & Parks	Gardener Caretaker
Alvarez, Enrique	19	Dept. of Airports	Custodian Airport
Alvarino, Magno A	21	Dept. of Airports	Build Operating Engr
Anzora, Andres	17	Dept. of Airports	Custodian Airport
Aparicio, Maria L	15	Dept. of Airports	Custodian Airport
Argueta, Audelino B	17	Dept. of Airports	Custodian Airport
Ascano, Maria Paja	10	Police Dept.	Criminalist
Avalos, Eufemia	17	Dept. of Airports	Custodian Airport
Ayson, Jesus F	13	Dept. of Airports	Accountant
Barroso Diaz, Nabor	15	Dept. of Airports	Custodian Airport
Bijou, Sandra Marie	30	Dept. of Airports	Sr Personnel Analyst
Bolivar, Walter G	15	Dept. of Airports	Custodian Airport
Botros, Atef Y	10	Dept. of Airports	Airport Guide
Bravo, Frank B	21	GSD - Fleet Svcs.	Sr Parkg Attendant
Brown, Roylan G	11	Dept. of Transportation	Traf Officer
Bustamante Canales, Sonia	10	Dept. of Airports	Custodial Svcs Asst
Cameron, John M	18	Harbor Dept.	Boat Captain
Campos, Donato	20	Dept. of Airports	Custodian Airport
Castro Hernandez, Maria A	17	Dept. of Airports	Custodian Airport
Cecena, Refugio	17	Dept. of Airports	Custodian Airport
Cervantes, Lilia	15	Dept. of Airports	Custodian Airport
Chacon, Lynda Louise	8	Dept. of Airports	Airport Guide
Chavarria, Graciela	7	Fire Department	Clerk Stenographer
Ching, Pauline Ann	6	Dept. of Airports	Airport Guide
Cruz, Ray	36	PW - Sanitation	Sanitation Solid Resources
Cruz, Vilma Eduardo	17	Dept. of Airports	Custodian Airport
Cruz Garcia, Blanca L	17	Dept. of Airports	Custodian Airport
Cuellar, Amanda L	20	Dept. of Airports	Custodian Airport
Curtis, Cumi	13	Dept. of Airports	Sr Administrative Clerk
Custodio, Isauro Caparaz	11	Dept. of Airports	Security Officer
Dasselaar, Carla	23	PW - Sanitation	Gardener Caretaker
Davis, Bernard	21	Dept. of Airports	Security Officer
Ehlen, Douglas A	12	Dept. of Airports	Constr Inspector
El Masri, Basma A	12	Dept. of Airports	Airport Guide
Fernandez, Fidelindo Nadal	30	Dept. of Airports	Programmer/Analyst

Garcia, Abelina	15	Dept. of Airports	Custodian Airport
Garcia Aguilar, Maria	17	Dept. of Airports	Custodian Airport
Gonzalez, Alberto S	6	Dept. of Rec. & Parks	Special Prog Asst
Gonzalez, Isabel	35	Police Dept.	Police Service Rep
Gonzalez, Norma Horta	3	Dept. of Transportation	Crossing Guard
Guardado, Rebeca	17	Dept. of Airports	Custodian Airport
Guinto, Heddy B	39	Dept. of Rec. & Parks	Administrative Clerk
Gunapala, Deegoda L	14	Dept. of Airports	Maintenance Laborer
Hanna, Mina H	30	Dept. of Airports	Sr Airport Engineer
Haro, Theresa Ann	25	Office of the CAO	Sr Administrative Clerk
Heard, Sam	12	Dept. of Airports	Security Officer
Hebert, Robert Anthony	31	Dept. of Airports	Sr Constr Inspector
Holmes, Arthur Mack	17	Police Dept.	Police Service Rep
Honda, Stuart T	21	Dept. of Airports	Electrician
Hormaza-Salcedo, Ramon H	14	Dept. of Airports	Electrician
Hu, Angie H	29	Dept. of Airports	Fiscal Systems Spec
Irons, Elaine L	8	Dept. of Airports	Airport Guide
Isahakian, Norma Marie	32	PW - St. Lighting	Dir Bur Of St Lighting
Iseri, Christine D	32	Dept. of Airports	Management Analyst
Jablonski, Kevin Jay	23	Police Dept.	Ch Police Psychologist
Jackson, Amalia	22	Dept. of Airports	Custodian Airport
Jackson, Bettye L	20	Dept. of Airports	Sr Custodian Airport
Jackson, David E	34	Dept. of Airports	Pr Constr Inspector
Jenkins, Bennie J	35	Dept. of Airports	Sr Custodian Airport
Jimenez, Steve D	33	Dept. of Airports	Cement Finisher Worker
Johnson, Kim	34	Dept. of Airports	Systems Analyst
Johnson, Michael Allen	30	Dept. of Airports	Constr & Maint Supv
Jones, Dorothy M	24	Dept. of Airports	Custodian Supervisor
Krugler, Leonard A	22	Dept. of Airports	Environmental Spec
Kwan, Angus W	15	Dept. of Airports	Accountant
Ladwa, Manji	19	Dept. of Airports	Constr Inspector
Lara, Pedro R	31	Dept. of Airports	Financial Manager
Le Blanc, Micaela J	33	Dept. of Airports	Info System Mgr
Lee, Kwong Lun	11	LACERS	Sr Accountant
Leitch, Bruce Daniel	26	Dept. of Airports	Electrician
Leonard, Michael A	35	Dept. of Airports	Sr Mgmt Analyst
Lewis, Cynthia B	34	Dept. of Airports	Secretary
Lewis, Deborah A	20	Dept. of Airports	Sr Custodian Airport
Lillard, Michael David	11	Dept. of Airports	Arpt Supt Of Oper
Limon, Arthur G	35	Dept. of Airports	Sr Painter
Lingat, Lilibeth G	32	Dept. of Airports	Management Analyst
Loera, Miguel Angel	29	Dept. of Airports	Irrigation Specialist
Logan, Morag A	5	PW - Engineering	Environmental Assoc
Lopez, Esteban S	27	Dept. of Airports	Gardener Caretaker
Lucio, Lenore H	22	Dept. of Airports	Airports Mtce Supvr

Mahaley, Linda Faye	30	Dept. of Airports	Management Analyst
Markalande, Agbo Tissa	29	Dept. of Airports	Office Engrg Tech
Marquez, Arthur	35	Dept. of Airports	Gardener Caretaker
Mc Mahan, Michael A	18	Dept. of Airports	Administrative Clerk
Mccombs, David W	32	Dept. of Airports	Civil Engrg Assoc
Mcmullen, Cynthia R	27	Dept. of Airports	Management Analyst
Moayedi, Mohsen	31	PW - Sanitation	Emergncy Mgt Coord
Mouton, Charisma D	19	Dept. of Airports	Sr Custodian Airport
Mouton, Vincent H	32	Dept. of Airports	Traf Pnt Sign Post
Mumau, Thomas H	30	Dept. of Airports	Sr Personnel Analyst
Nero, Randolph S	32	Dept. of Airports	Airp Maintenance Supt
Nurinda, Francisco J	22	Dept. of Airports	Custodian Airport
O Connor, Mark	30	Dept. of Airports	Info System Mgr
Obilana, Robert A	30	Dept. of Airports	Security Officer
Oliver, Gerald A	35	Dept. of Airports	Custodian Airport
Pagan, Jeannett W	30	PW - Admin Div.	Sr Administrative Clerk
Parker, Mary Ellen	24	Dept. of Airports	Sr Personnel Analyst
Pattison, Ethel L	19	Dept. of Airports	Airport Info Spec
Penn, Reuben Alexander	27	Dept. of Airports	Gardener Caretaker
Perez, Ricardo A	26	Dept. of Airports	Gardener Caretaker
Pettigrew, Olivette Doret	34	Dept. of Airports	Accounting Clerk
Phillips, Glenn	31	Dept. of Airports	Sr Constr Inspector
Phoenix, Annette M	32	Dept. of Bldg. & Safety	Sr Administrative Clerk
Pugh, Bruce E	17	Dept. of Airports	Painter
Reyes, Francisco H	25	Dept. of Airports	Transitional Worker
Rodriguez, Rene	24	Dept. of Airports	Constr & Maint Supv
Rubio, Enedina	7	Dept. of Rec. & Parks	Special Prog Asst
Ruiz, Hugo	22	Dept. of Airports	Custodian Airport
Santana, Luis C	30	PW - Resurf & Reconstr	Street Svcs Supv
Sexton, Wyvetta G	20	Dept. of Airports	Custodian Airport
Shirley, Patrice M	33	Dept. of Airports	Administrative Clerk
Smith, Chris P	26	Dept. of Airports	Gardener Caretaker
Smith, Darlene	27	Dept. of Airports	Administrative Clerk
Smith, Edward H	29	Dept. of Airports	Maintenance Laborer
Smith, Sydaris O	25	Dept. of Airports	Maintenance Laborer
Snee, Agnes J	33	Dept. of Airports	Accounting Clerk
Solano, Evelyn Maritza	34	Police Dept.	Municipal Police Officer
Soto, Rosa	34	Police Dept.	Police Service Rep
Sparks, Christophe	34	Dept. of Airports	Custodian Supervisor
Sparks, Jimmy Ray	31	Dept. of Airports	Mech Helper
Stanciell, Darryl K	30	Dept. of Airports	Sr Security Officer
Stevens, Michael C	19	Dept. of Airports	Painter
Stevenson, Paul K	17	Dept. of Airports	Security Officer
Stewart, Brad David	19	Harbor Dept.	Equip Repair Supvr
Stewart, Willa C	23	Dept. of Airports	Bus Operator

Swanton, Todd Raymond	25	Police Dept.	Laboratory Tech
Taormina, James F	23	Dept. of Airports	Tile Setter
Thompson, Zachary M	34	Dept. of Airports	Graphics Designer
Tomono, Duane T	14	Dept. of Rec. & Parks	Golf Starter
Valerio, Teodorico Portillo	25	Dept. of Airports	Sr Gardener
Van Ness, Kathy Marilyn	30	Dept. of Airports	Exec Asst Airports
Vasquez, Bill L	32	Dept. of Airports	Sr Carpenter
Vasquez, Nephtali	39	Dept. of Airports	Custodian Supervisor
Verba, Roman	31	Dept. of Airports	Mech Engrg Assc
Villanueva, Roel I	19	Fire & Police Pensions	Benefits Specialist
Vo, Nguyen V	34	Dept. of Airports	Engrg Designer-Airport
Walker, Jan	31	Dept. of Airports	Security Officer
Wallace, Gary J	14	Dept. of Airports	Painter
Webb, Russell S	29	Dept. of Airports	Sr Mgmt Analyst
Wells, Marilyn M	38	Dept. of Airports	Custodian Airport
Wesson, Eric V	32	PW - Sanitation	Solid Wste Disp Supt
White, Mary E	18	PW - Resurf & Reconstr	Maintenance Laborer
Williams, Deirdre K	33	Dept. of Airports	Management Analyst
Williams, Ross L	24	Dept. of Airports	Maint & Constr Helper
Williams, Walter L	19	Dept. of Airports	Security Officer
Yamamoto, Barbara T	21	Dept. of Airports	Dir Of Airprts Operatns
Yoder, Linda	21	Dept. of Airports	Constr Inspector
Zanders, Maria O	17	Dept. of Airports	Custodian Airport
Zavala, Pedro	16	Dept. of Airports	Gardener Caretaker
Zelaya, Juan F	15	Dept. of Airports	Custodian Airport

BENEFIT PAYMENTS APPROVED BY GENERAL MANAGER: ITEM V-B

Pursuant to the authority delegated to the General Manager under Board Rule GMA 1, General Manager Authorization, adopted by the Board of Administration on June 14, 2016, the following benefit payments have been approved by the General Manager:

Approved Death Benefit Payments

Deceased	Beneficiary/Payee
TIER 1	
Adenwala, Drupad	Jyoti Adenwala for the payment of the Accrued But Unpaid Larger Annuity Allowance Accrued But Unpaid Service Retirement Allowance Burial Allowance
Anderson, Philip W (Deceased Active)	Kenneth Robert Anderson for the payment of the Accumulated Contributions
Bernson, Harold Melvin	Sandra L Bernson for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Boxley, Florence	Clarence C Boxley for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Boyd, Earl A	Lenora M Tate for the payment of the Accrued But Unpaid Service Retirement Allowance

Brantley, Randle L	Mary J Brantley for the payment of the Accrued But Unpaid Vested Retirement Allowance Burial Allowance
Bush, Milton Lee (Deceased Active)	Quedellice Latasha Bush for the payment of the Accumulated Contributions
Cardenas Diaz, Nestor Ricardo (Deceased Active)	Monique Cardenas for the payment of the Limited Pension
Cervantes, Joe	Delfina C Cervantes for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Conerly, Michael O	Rhonda Felisa Gipson Conerly for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
De Leon, Onofre Lingad	Victoria Sotiangco De Leon for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Downey, Cheryl Marie (Deceased Active)	Dianne Clarice Steele for the payment of the Accumulated Contributions Tracey Wong for the payment of the Accumulated Contributions
Franklin, Lonnie D	Sylvia Yvonne Franklin for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance

Gallegos, Ernest	Theresa Gallegos for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Garcia, Raymond M	Matthew B Garcia for the payment of the Burial Allowance
Garcia, William	Melinda A. Garcia for the payment of the Burial Allowance
Garnica, Alfredo Raymond (Deceased Active)	Mary Ann Garnica for the payment of the Accumulated Contributions
Glenn, Anthony Burnette (Deceased Active)	Joyce Miles -Glenn for the payment of the Survivor Contributions Death Refund
Glickman, Barry S	Judith T Glickman for the payment of the Accrued But Unpaid Vested Retirement Allowance Burial Allowance
Gomez, Alberto (Deceased Active)	Guillermina Herrera Rodriguez for the payment of the Service Retirement Survivorship Allowance
Gonzales, Gilbert F	Lupe E Gonzales for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

Harrell, Tammy (Deceased Active)	Brandon Eugene Harris for the payment of the Accumulated Contributions
Harris, Johnny L	Mary K Harris for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Hawkins, Richard	Qiana Danielle Hawkins for the payment of the Burial Allowance
Hickman, Marguerite C	Gail Lynn Hickman Davis for the payment of the Accrued But Unpaid Continuance Allowance
Hines, William Lee (Deceased Active)	Aaron Hines for the payment of the Accumulated Contributions
Hinson, Jeffrey Scott	Coveda D. Hall Prowell for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance
Huerta Arrearan, Delia (Deceased Active)	Janet H Velez for the payment of the Accumulated Contributions Jennifer H Velez for the payment of the Accumulated Contributions
Jacobs, Hezekiah	Libby Vernetta Jacobs Hutton for the payment of the Burial Allowance

Jones, Arthur F	Derek Jones for the payment of the Death Subsidy Credit Kirk Cedric Jones for the payment of the Burial Allowance Death Subsidy Credit Myron Doran Jones for the payment of the Burial Allowance Death Subsidy Credit
Jones, Curtis Levon (Deceased Active)	Patricia Ann Hale Jones for the payment of the Service Retirement Survivorship Allowance
Jones, Myrtle D	Kirk Cedric Jones for the payment of the Burial Allowance Myron Doran Jones for the payment of the Burial Allowance Death Subsidy Credit
Korte, Klaus H	Karen M Korte for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Koury, George T	Eleonore Koury for the payment of the Burial Allowance Marlene Koury for the payment of the Accrued But Unpaid Vested Retirement Allowance
Lugo, Johnny	Fabiola Lugo for the payment of the Burial Allowance
Mcadoo, Erica Nicole (Deceased Active)	Donna Faye Royston for the payment of the Accumulated Contributions

Mckean, David J	Catherine Mckean-Royer for the payment of the Burial Allowance
Miyatake, Masashi	Harumi Miyatake for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Moore, Jerome S	Betty J Moore for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Moreno, Olivia	Jorge Moreno for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Murakami, Yukio	Mutsuko Nishino for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Perez, George L	Mary L Perez for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Reschke, Kurt E	Judy J Reschke for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Rivas, Joseph S	Cynthia S Macias for the payment of the Accrued But Unpaid Service Retirement Allowance

Rodriguez, Guillermina	Ralph Rodriguez for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Sironen, Robert H	Kim A Duenes for the payment of the Burial Allowance
Stinnett, Byron E	Andrea J Stinnett for the payment of the Accrued But Unpaid Service Retirement Allowance
Tamayo, Martha A (Deceased Active)	Krystal Tamayo for the payment of the Accumulated Contributions
Tanimoto, Shikuo	Pamella K Endo for the payment of the Burial Allowance
Taylor, William W	Susann C Taylor for the payment of the Accrued But Unpaid Disability Retirement Allowance Burial Allowance
Thai, Minh (Deceased Active)	Chung Thai for the payment of the Accumulated Contributions Jenny Thai for the payment of the Accumulated Contributions
Volpe, Kathleen	Timothy Volpe for the payment of the Accrued But Unpaid Continuance Allowance

Wellnitz, Thomas C	Claudia Vargas Wellnitz for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance
Wells, Jacqueline D	La Shawn Sharp for the payment of the Death Subsidy Credit Percy Lee Slater for the payment of the Death Subsidy Credit
White, Arthur L	Darell White for the payment of the Burial Allowance
Word, Walter	Latasha M. Sims for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance Unused Contributions
Wullner, Edwin A	Mary Allen Wullner for the payment of the Accrued But Unpaid Service Retirement Allowance Burial Allowance

TIER 3

Alferes, Kevin James (Deceased Active)	Kimberly Langford for the payment of the Accumulated Contributions

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM (LACERS)
TRAVEL/CONFERENCE EVALUATION REPORT

Name of Attendee: Elizabeth Lee	
Title of Conference/Seminar: IFEBP Investment in Today's Climate and Beyond	
Location: Virtual	No. of Education Hours: 8
Event Sponsor: IFEBP	Date(s) Held: 8/18/-8/19/20

Report for:

☐ Travel
☒ Conference/Seminar Attendance Only

I. Nature/Purpose of Travel (if applicable): N/A

II. Significant Information Gained: Economic outlook; asset allocation; equity investment landscape for domestic, international emerging market and risks; with risk factors; real estate and infrastructure investing; and fixed income.

III. Benefits to LACERS: Economists and industry experts provided insights to help trustees gain understanding of the issues impacting our investments and investment strategy during the pandemic.

IV. Additional Comments:

SUBMIT TO THE LACERS COMMISSION EXECUTIVE ASSISTANT, 202 W. FIRST STREET, SUITE 500
WITHIN 30 DAYS AFTER ATTENDING THE CONFERENCE/SEMINAR

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM (LACERS)
TRAVEL/CONFERENCE EVALUATION REPORT

Name of Attendee: Michael R. Wilkinson	
Title of Conference/Seminar: PREA Annual Investor Conference	
Location: Virtual	No. of Education Hours: 5
Event Sponsor: Pension Real Estate Assn.	Date(s) Held: 10/1-10/2/2020

Report for:

☐ Travel
☒ Conference/Seminar Attendance Only

I. Nature/Purpose of Travel (if applicable): No travel, but purpose of education is trustee education for institutional real estate investing.

II. Significant Information Gained: The virtual conference provided an excellent background in institutional real estate investing and strategies in response to the COVID-19 pandemic.

III. Benefits to LACERS: LACERS benefits by having its trustee informed about the risks and rewards of investing in the real estate markets.

IV. Additional Comments:

SUBMIT TO THE LACERS COMMISSION EXECUTIVE ASSISTANT, 202 W. FIRST STREET, SUITE 500
WITHIN 30 DAYS AFTER ATTENDING THE CONFERENCE/SEMINAR

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM (LACERS)
TRAVEL/CONFERENCE EVALUATION REPORT

Name of Attendee: Cynthia M. Ruiz	
Title of Conference/Seminar: 2020 Milken Institute Global Conf. "Meeting the Moment"	
Location: Virtual	No. of Education Hours: 16
Event Sponsor: Milken Institute	Date(s) Held: 10/12-10/21/20

Report for:
- ☐ Travel
- ☒ Conference/Seminar Attendance Only

I. Nature/Purpose of Travel (if applicable):

II. Significant Information Gained: This was an excellent conference. It was a long time in front of the computer but the speakers were top notch including CEO of World Bank David Malpass, Ray Dalio, Ambassador Susan Rice & many others.

III. Benefits to LACERS: The topics included: U.S. Equity Markets, ESG, Emerging Managers, Global Capital Markets, Asian Economic outlook, and Global Capital Markets.

IV. Additional Comments: All of the information I learned will help me do my job as chair of the LACERS Board. Sad I could not meet these people in person.

SUBMIT TO THE LACERS COMMISSION EXECUTIVE ASSISTANT, 202 W. FIRST STREET, SUITE 500
WITHIN 30 DAYS AFTER ATTENDING THE CONFERENCE/SEMINAR

LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM (LACERS)
TRAVEL/CONFERENCE EVALUATION REPORT

Name of Attendee: Sung Won Sohn	
Title of Conference/Seminar: 2020 Milken Institute Global Conference	
Location: Virtual	No. of Education Hours: 50
Event Sponsor: Milken Institute	Date(s) Held: 10/12-10/21/20

Report for:

☐ Travel

☒ Conference/Seminar Attendance Only

I. Nature/Purpose of Travel (if applicable):

II. Significant Information Gained: A broad area ranging from investment to economics for 8 days.

III. Benefits to LACERS: Investment knowledge gained.

IV. Additional Comments:

SUBMIT TO THE LACERS COMMISSION EXECUTIVE ASSISTANT, 202 W. FIRST STREET, SUITE 500
WITHIN 30 DAYS AFTER ATTENDING THE CONFERENCE/SEMINAR

REPORT TO BOARD OF ADMINISTRATION
From: Neil M. Guglielmo, General Manager

MEETING: NOVEMBER 10, 2020
ITEM: VI-A

SUBJECT: **PRESENTATION BY SEGAL CONSULTING OF THE ACTUARIAL VALUATIONS AS OF JUNE 30, 2020 AND PROPOSED CITY CONTRIBUTION RATES FOR FISCAL YEAR 2021-22 AND POSSIBLE BOARD ACTION**

ACTION: ☒ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☐

Recommendation

That the Board adopt the attached actuarial valuation reports of its consulting actuary, Segal, for the period ending June 30, 2020, including:

1) *Actuarial Valuation and Review of Retirement Benefits* and *Actuarial Valuation and Review of Other Postemployment Benefits* which establish the recommended City contribution rates for Fiscal Year 2021-22 (Attachments 2 and 3); and,

2) *Governmental Accounting Standards (GAS) 67 Pension Valuation* and *GAS 74 Other Post-Employment Benefit Valuation* (Attachments 4 and 5), which provide the financial disclosures to meet LACERS' June 30, 2020 financial reporting requirements of the Governmental Accounting Standards Board.

Executive Summary

The Board's consulting actuary, Segal, performed the annual actuarial valuation of the retirement benefits and the retiree health benefits of the LACERS' Retirement and Health System (System) based on census data as of June 30, 2020 (See Attachment 1 for summary results) and incorporating the Board adopted new actuarial assumptions based on the *July 1, 2016 through June 30, 2019 Actuarial Experience Study* prepared by Segal. The actuarial valuation determines the System's funded status as of June 30, 2020 and the City's contribution rates for Fiscal Year 2021-22 (FY22).

Overall, the System's Assets increased and Funded Ratios decreased, while the total Unfunded Actuarial Accrued Liability (UAAL) increased due to lower than expected returns, higher than expected salary increases, and changes in actuarial assumptions. The aggregate employer rate (if received on July 15) calculated in this valuation has increased from 24.63% of payroll to 27.96% of payroll.

Segal also prepared separate valuation reports in accordance with the requirements of the Governmental Accounting Standards (GAS) Statements No. 67 – *Financial Reporting for Pension Plans* and No. 74 – *Financial Reporting for Postemployment Benefit Plans*. Information from these valuations will be reported in LACERS' June 30, 2020 financial statements.

<u>Discussion</u>

<u>Retirement and Other Post-Employment Benefit (OPEB) Actuarial Valuations</u>

Segal performed the annual actuarial valuation of the retirement benefits and the retiree health benefits of the System based on census data as of June 30, 2020 (see Attachments 2 and 3). The actuarial valuation determines the System's funded status as of June 30, 2020 and the City's contribution rates for FY22. The report also updates actuarial and demographic information about the System and its Members.

Significant Valuation Results

Valuation Ending	June 30, 2020	June 30, 2019	Percent Change
Total System Assets			
A. Actuarial Value	$18,697,966,253	$17,711,461,636	5.6%
B. Market Value	17,863,324,366	17,707,909,933	0.9%
Unfunded Actuarial Accrued Liability (UAAL)			
A. Retirement Benefits	$6,897,092,748	$5,974,856,716	15.4%
B. Health Subsidy Benefits	502,106,823	521,636,655	(3.7%)
C. Total	$7,399,199,571	$6,496,493,371	13.9%
Funded Ratio (Based on Valuation Value of Assets)			
A. Retirement Benefits	69.4%	71.3%	(1.9%)
B. Health Subsidy Benefits	85.6%	84.4%	1.2%
C. Total	71.6%	73.1%	(1.5%)

<u>Valuation Highlights</u>

Overall, the System's Assets increased and the Funded Ratios decreased, while the total UAAL increased, primarily due to:

(i) a lower than expected return on the valuation value of assets (after smoothing),

(ii) higher than expected salary increases for continuing active members, and

(iii) changes in actuarial assumptions

These factors are partially offset by:

a. actual contributions more than expected as a result of the anticipated one-year delay in implementing the lower contribution rate in the prior valuation,

b. favorable health experience, and

c. other miscellaneous actuarial gains.

Investment experience represented a System loss as the rate of return on the valuation value basis for June 30, 2020 was 6.5%, falling short of the assumed rate of return of 7.25%, resulting in a $108.8 million actuarial loss. Assumption changes, in particular the lowering of the investment return assumption, the increase in the merit and promotion salary increase assumption, and the change in the mortality assumption, all factored in increasing the AAL by $530.7 million for retirement benefits. For health benefits, the favorable 2020/2021 premium subsidies, combined with the repeal of excise tax on health plans, reduced UAAL by $181.9 million, more than offsetting all other health actuarial losses. Key financial indicator changes are highlighted below.

- The ratio of the valuation value of assets to actuarial accrued liabilities for retirement benefits decreased year-over-year from 71.3% to 69.4%. On a market value basis, the funded ratio for the retirement benefits decreased year-over-year from 71.3% to 66.3%.

- The funded ratio for the retiree health benefits on an actuarial basis increased year-over-year from 84.4% to 85.6%. On a market value basis, the funded ratio for retiree health benefits decreased from 84.3% to 81.8%.

- The actuarial value of total System assets as of June 30, 2020 increased 5.6% over the prior year, from $17.71 billion to $18.70 billion. On a market value basis, there was a 0.9% increase in assets from $17.71 billion to $17.86 billion.

- The UAAL for the retirement benefit increased 15.4% over the prior year, from $5.97 billion to $6.90 billion. For the retiree health benefits, the UAAL decreased 3.7% from the prior year, from $521.6 million to $502.11 million. The total UAAL for both the retirement benefits and the retiree health benefits as of June 30, 2020 is $7.40 billion. Compared to the previous year, the total UAAL increased by $902.7 million.

<u>Actuarially Determined Employer Contributions</u>

The City's contribution is the sum of the Normal Cost plus an amortized payment of the UAAL. The Normal Cost is the portion of the actuarial present value of LACERS' plan benefits which is allocated to a valuation year using LACERS' adopted cost method – Entry Age Normal. The amortization of the UAAL is the payment stream required to fund the difference between the actuarial accrued liabilities and the actuarial value of assets, determined by methods prescribed by LACERS' Amortization Policy. The actuary has calculated contribution rates reflecting decisions made by the Board including Segal's *July 1, 2016 through June 30, 2019 Actuarial Experience Study* dated June 17, 2020 and the

Assumptions Recommended for the June 30, 2020 Retiree Health Actuarial Valuations dated September 15, 2020, along with other Board policies. Following are the actuarially determined City contribution rates as a percentage of the City payroll for FY22 if received by July 15, 2021, as compared with current rates.

Employer Rates – Tier 1 and Tier 3 Combined

As a Percentage of City Payroll	**Recommended Rates FY 2022**	**Current Rates FY 2021**	**Difference**
Retirement	27.96%	24.63%	3.33%
Health	4.29%	4.49%	(0.20%)
Total	**32.25%**	**29.12%**	**3.13%**

Overall, the recommended employer contribution rate for FY22 is 3.13% higher than the current year rate. The increase in the employer rate is due to:

(i) a lower than expected return on the valuation value of assets (after smoothing),

(ii) higher than expected salary increases for continuing active members, and

(iii) changes in actuarial assumptions, offset somewhat by:

a. a decrease in the normal cost rate due, in part, to the enrollment of new employees in Tier 3,

b. actual contributions more than expected as a result of the anticipated one-year delay in implementing the lower contribution rate in the prior valuation,

c. amortizing the prior year's UAAL over a larger than expected projected total payroll,

d. the 40-year minimum GASB 25/27 amortization layer in 2004/2005 being fully amortized,

e. favorable health premiums, and

f. other miscellaneous actuarial gains.

Note that the retirement and total FY22 rate increases mirror the 3.32% effect of actuarial assumption changes on the Retirement Plan associated with the June 17, 2020 Actuarial Experience Study, meaning that all other factors largely zeroed out. Weighing on this and future year valuations is a total net unrecognized investment loss of $834.6 million as of June 30, 2020, unless offset by future investment gains or other favorable actuarial experience.

Actuarial Standards of Practice No. 51 (ASOP 51)

ASOP 51 requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition." While certain risk factors are discussed in the valuations, a detailed analysis of risk relative to the System's future financial condition will be provided in a stand-alone report the third quarter of this fiscal year.

GAS 67 and GAS 74

Segal prepared separate valuation reports in accordance with the requirements of the GAS Statements No. 67 – *Financial Reporting for Pension Plans* and No. 74 – *Financial Reporting for Postemployment Benefit Plans* (see Attachments 4 and 5). Information from these valuations will be reported in LACERS' June 30, 2020 financial statements. Key highlights are identified below.

- The Net Pension Liability (NPL) was determined to be $7.59 billion as of June 30, 2020 for the retirement benefits, compared to $5.98 billion as of June 30, 2019. The NPL is a required disclosure in the financial notes of a pension plan pursuant to GAS 67, and a required disclosure as a liability in the plan sponsor's financial statements pursuant to GAS 68 – *Accounting and Financial Reporting for Pensions*. The NPL measure differs from the UAAL as it is calculated on a market value basis and reflects all investment gains and losses as of the measurement date. Another required disclosure under GAS 67 is the Plan Fiduciary Net Position as a percentage of Total Pension Liability, which is 66.3% as of June 30, 2020.

- The Net OPEB Liability (NOL) was determined to be $635.3 million as of June 30, 2020 for the retiree health benefits, compared to $522.2 million as of June 30, 2019. The NOL is a required disclosure in the financial notes of an OPEB plan pursuant to GAS 74, and a required disclosure as a liability in the plan sponsor's financial statements pursuant to GAS 75 – *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. Additionally, GAS 74 requires disclosure of the Plan Fiduciary Net Position as a percentage of Total OPEB Liability, which is 81.78% as of June 30, 2020.

Actuarial Audit Applied to the Valuations

In the Actuarial Audit of the June 30, 2019 Actuarial Valuations conducted by Cheiron, a number of recommendations were made and the disposition of those recommendations are shown in Attachment 6. Upon completion of the June 30, 2020 Risk Assessment Report, staff will report on the disposition of the remaining Actuarial Audit recommendations.

Strategic Plan Impact Statement

The Board's action on this item aligns with the Strategic Plan Goal to uphold good governance practices which affirm transparency, accountability, and fiduciary duty.

Andy Yeung and Paul Angelo of Segal will present the June 30, 2020 Actuarial Valuation reports.

Prepared By: Edwin Avanessian, Senior Benefits Analyst II

NG:TB:EA

Attachments:

1. Segal Actuarial Valuation and Review of Retirement and Health Benefits as of June 30, 2020 (Summary and Supplemental Schedules)

2. Segal Actuarial Valuation and Review of Retirement Plan as of June 30, 2020

3. Segal Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2020

4. Segal Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2020

5. Segal Governmental Accounting Standards (GAS) 74 Actuarial Valuation of Other Postemployment Benefits (OPEB) as of June 30, 2020

6. Cheiron Audit Recommendations in Review of the Actuarial Valuations

Board Meeting: 11/10/2020
Item: VI-A
Attachment 1

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Retirement and Health Benefits as of June 30, 2020

Segal

Segal
180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
T 415.263.8200
segalco.com

November 3, 2020

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

Re: June 30, 2020 Actuarial Valuations

Dear Board Members:

Enclosed please find the June 30, 2020 actuarial valuations for the retirement and health plans.

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

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

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

Sincerely,

Segal

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

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

DNA/jl

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

Exhibit A

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

		June 30, 2020	June 30, 2019	Percent Change
I.	**Total Membership**			
	A. Active Members	27,490	26,632	3.2%
	B. Pensioners and Beneficiaries	20,423	20,034	1.9%
II.	**Valuation Salary**			
	A. Total Annual Projected Payroll	$2,445,016,587	$2,225,412,831	9.9%
	B. Average Projected Monthly Salary	7,412	6,963	6.4%
III.	**Benefits to Current Retirees and Beneficiaries**[1]			
	A. Total Annual Benefits	$1,004,730,961	$947,588,609	6.0%
	B. Average Monthly Benefit Amount	4,100	3,942	4.0%
IV.	**Total System Assets**[2]			
	A. Actuarial Value	$18,697,966,253	$17,711,461,636	5.6%
	B. Market Value	17,863,324,366	17,707,909,933	0.9%
V.	**Unfunded Actuarial Accrued Liability (UAAL)**			
	A. Retirement Benefits	$6,897,092,748	$5,974,856,716	15.4%
	B. Health Subsidy Benefits	502,106,823	521,636,655	(3.7)%

[1] Includes July COLA.

[2] Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits.

Exhibit A (continued)

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

VI.	Budget Items (as a Percent of Pay)	FY 2021-2022[1]		FY 2020-2021		Difference	
		Beginning of Year	July 15	Beginning of Year	July 15	Beginning of Year	July 15
	A. Retirement Benefits (Tier 1 and Tier 3 Combined)						
	1. Normal Cost	7.83%	7.85%	6.23%	6.25%	1.60%	1.60%
	2. Amortization of UAAL	20.05%	20.11%	18.33%	18.38%	1.72%	1.73%
	3. Total Retirement Contribution	27.88%	27.96%	24.56%	24.63%	3.32%	3.33%
	B. Health Subsidy Benefits (Tier 1 and Tier 3 Combined)						
	1. Normal Cost	3.47%	3.48%	3.43%	3.44%	0.04%	0.04%
	2. Amortization of UAAL	0.81%	0.81%	1.04%	1.05%	(0.23)%	(0.24)%
	3. Total Health Subsidy Contribution	4.28%	4.29%	4.47%	4.49%	(0.19)%	(0.20)%
	C. Total Contribution (A + B)	32.16%	32.25%	29.03%	29.12%	3.13%	3.13%

VII.	Funded Ratio	June 30, 2020	June 30, 2019	Difference
	(Based on Valuation Value of Assets)			
	A. Retirement Benefits	69.4%	71.3%	(1.9)%
	B. Health Subsidy Benefits	85.6%	84.4%	1.2%
	C. Total	71.6%	73.1%	(1.5)%
	(Based on Market Value of Assets)			
	D. Retirement Benefits	66.3%	71.3%	(5.0)%
	E. Health Subsidy Benefits	81.8%	84.3%	(2.5)%
	F. Total	68.4%	73.1%	(4.7)%

[1] Alternative contribution payment date for FY 2021-2022:

	Retirement	Health	Total
End of Pay Periods	28.84%	4.43%	33.27%

Exhibit B

Los Angeles City Employees' Retirement System
Computed Contribution Rates[1] – Historical Comparison

Valuation Date	Retirement	Health	Total	Projected Valuation Payroll (thousands)
06/30/1994	12.07%	2.99%	15.06%	$884,951
06/30/1995	7.34%	2.30%	9.64%	911,292
06/30/1996	6.51%	3.18%	9.69%	957,423
06/30/1997	6.57%	1.85%	8.42%	990,616
06/30/1998	6.43%	1.27%	7.70%	1,011,857
06/30/1999	4.93%	0.67%	5.60%	1,068,124
06/30/2000	2.54%	2.17%	4.71%	1,182,203
06/30/2001	3.84%	1.98%	5.82%	1,293,350
06/30/2002	9.22%	1.85%	11.07%	1,334,335
06/30/2003	11.95%	4.02%	15.97%	1,405,058
06/30/2004	14.76%	4.94%	19.70%	1,575,285
06/30/2005	17.51%	7.27%	24.78%	1,589,306
06/30/2006	17.18%	6.49%	23.67%	1,733,340
06/30/2007	15.52%	5.38%	20.90%	1,896,609
06/30/2008	14.65%	5.48%	20.13%	1,977,645
06/30/2009	18.73%	6.62%	25.35%	1,816,171
06/30/2010				
Before Additional Employee Contributions	21.19%	7.45%	28.64%	1,817,662
After Additional Employee Contributions	18.67%	6.94%	25.61%	1,817,662
06/30/2011[2]				
Before Additional Employee Contributions	24.31%	4.49%	28.80%	1,833,392
After Additional Employee Contributions	21.64%	4.49%	26.13%	1,833,392
06/30/2012[3]	21.34%	5.74%	27.08%	1,819,270
06/30/2013	22.24%	5.80%	28.04%	1,846,970
06/30/2014	24.05%	5.81%	29.86%	1,898,064
06/30/2015	23.65%	4.90%	28.55%	1,907,665
06/30/2016	22.96%	5.09%	28.05%	1,968,703
06/30/2017[4]	23.81%	5.26%	29.07%	2,062,316
06/30/2018	25.56%	5.07%	30.63%	2,177,687
06/30/2019	25.43%	4.64%	30.07%	2,225,413
06/30/2020	28.84%	4.43%	33.27%	2,445,017

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

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

[3] Beginning with the 6/30/2012 valuation date, the contribution rates are after additional employee contributions.

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

Exhibit C

Los Angeles City Employees' Retirement System
Schedule of Funded Liabilities by Type for Retirement Benefits
For Years Ended June 30
($ In Thousands)

	Aggregate Actuarial Accrued Liabilities For				Portion of Aggregate Accrued Liabilities Covered by Reported Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
Valuation Date	Member Contributions	Retirees, Beneficiaries, & Inactive/Vested	Active Members	Valuation Value of Assets	Member Contributions	Retirees, Beneficiaries, & Inactive/Vested	Active Members
06/30/1996	$637,737	$2,357,798	$1,480,489	$4,468,433	100.0%	100.0%	99.5%
06/30/1997	683,048	2,598,432	1,604,857	4,802,509	100.0	100.0	94.8
06/30/1998	733,680	2,772,712	1,806,526	5,362,923	100.0	100.0	100.0
06/30/1999	776,617	2,989,218	1,918,751	5,910,948	100.0	100.0	100.0
06/30/2000	827,729	3,149,392	2,035,810	6,561,365	100.0	100.0	100.0
06/30/2001	889,658	3,444,240	2,134,168	6,988,782	100.0	100.0	100.0
06/30/2002	950,002	3,756,935	2,545,181	7,060,188	100.0	100.0	92.5
06/30/2003	1,005,888	4,021,213	2,632,745	6,999,647	100.0	100.0	74.9
06/30/2004	1,062,002	4,348,252	3,123,610	7,042,108	100.0	100.0	52.2
06/30/2005	1,128,101	4,858,932	3,334,492	7,193,142	100.0	100.0	36.2
06/30/2006	1,210,246	5,149,385	3,511,031	7,674,999	100.0	100.0	37.5
06/30/2007	1,307,008	5,365,437	3,854,429	8,599,700[1]	100.0	100.0	50.0
06/30/2008	1,408,074	5,665,130	4,113,200	9,438,318	100.0	100.0	57.5
06/30/2009	1,282,663	7,356,302	3,403,019	9,577,747	100.0	100.0	27.6
06/30/2010	1,379,098	7,507,945	3,707,982	9,554,027	100.0	100.0	18.0
06/30/2011	1,474,824	7,765,071	4,151,809	9,691,011	100.0	100.0	10.9
06/30/2012	1,625,207	7,893,684	4,875,068	9,934,959	100.0	100.0	8.5
06/30/2013	1,757,195	8,066,564	5,057,904	10,223,961	100.0	100.0	7.9
06/30/2014	1,900,068	8,700,896	5,647,889	10,944,751	100.0	100.0	6.1
06/30/2015	2,012,378	9,118,166	5,779,452	11,727,161	100.0	100.0	10.3
06/30/2016	2,137,269	9,439,001	5,848,726	12,439,250	100.0	100.0	14.8
06/30/2017	2,255,048	10,164,403	6,038,737	13,178,334	100.0	100.0	12.6
06/30/2018	2,354,026	11,079,053	6,511,500	13,982,435	100.0	100.0	8.4
06/30/2019	2,469,761	11,933,703	6,389,957	14,818,564	100.0	100.0	6.5
06/30/2020	2,584,851	12,740,109	7,202,235	15,630,103	100.0	100.0	4.2

[1] Excludes assets transferred for Port Police.

Exhibit D

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

Year Ended	No. of New Retirees and Beneficiaries	Annual Allowances Added[2]	No. of Retirees and Beneficiaries Removed	Annual Allowances Removed	No. of Retirees and Beneficiaries at 6/30	Annual Allowances at 6/30	Percent Increase in Annual Allowances	Average Annual Allowance
06/30/2002	844	$23,740,829	620	$11,316,344	13,589	$336,437,038	6.4%	$24,758
06/30/2003	827	24,729,535	611	12,008,132	13,805	359,036,215	6.7%	26,008
06/30/2004	986	53,452,133	654	13,220,316	14,137	399,268,032	11.2%	28,243
06/30/2005	934	43,454,836	749	14,769,736	14,322	427,953,132	7.2%	29,881
06/30/2006	890	42,821,079	642	15,061,287	14,570	455,712,924	6.5%	31,277
06/30/2007	821	34,131,744	555	13,210,740	14,836	476,633,928	4.6%	32,127
06/30/2008	748	40,680,279	609	14,956,623	14,975	502,357,584	5.4%	33,546
06/30/2009	632	36,887,854	616	17,386,042	14,991	521,859,396	3.9%	34,812
06/30/2010	2,893	144,594,918	620	17,604,486	17,264	648,849,828	24.3%	37,584
06/30/2011	528	24,282,965	595	16,585,589	17,197	656,547,204	1.2%	38,178
06/30/2012	620	38,314,256	594	17,986,700	17,223	676,874,760	3.1%	39,301
06/30/2013	772	40,966,952	633	18,776,770	17,362	699,064,942	3.3%	40,264
06/30/2014	831	38,666,905	661	21,175,777	17,532	716,556,070	2.5%	40,871
06/30/2015	1,083	55,849,106	683	22,013,426	17,932	750,391,750	4.7%	41,847
06/30/2016	1,082	51,056,286	657	23,092,610	18,357	778,355,426	3.7%	42,401
06/30/2017	1,142	65,583,105	694	24,422,619	18,805	819,515,912	5.3%	43,580
06/30/2018	1,312	86,917,553	738	26,361,758	19,379	880,071,707	7.4%	45,414
06/30/2019	1,341	93,946,126	686	26,429,224	20,034	947,588,609	7.7%	47,299
06/30/2020	1,134	85,268,880	745	28,126,528	20,423	1,004,730,961	6.0%	49,196

[1] Does not include Family Death Benefit Plan members. Table based on valuation data.
[2] Effective 06/30/2004, also includes the COLA granted in July.

5661854v3/05806.002

Board Meeting: 11/10/2020
Item: VI-A
Attachment 2

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Retirement Benefits as of June 30, 2020

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

Segal

180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

November 3, 2020

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

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2020. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2021/2022.

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

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

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

Sincerely,

Segal

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

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

JRC/jl

Table of Contents

Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal to present a valuation of the Los Angeles City Employees' Retirement System ("the System") as of June 30, 2020. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of current Plan assets to cover the estimated cost of settling the Plan's accrued benefit obligations.

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; and changes in plan provisions or applicable law.

The contribution requirements presented in this report are based on:

- The benefit provisions of the pension plan, as administered by the Board of Administration;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2020, provided by the System;
- The assets of the Plan as of June 30, 2020, provided by the System;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. that the Board has adopted for the June 30, 2020 valuation; and
- The funding policy adopted by the Board of Administration.

Valuation Highlights

Pgs. 30 & 62

1. The results of this valuation reflect changes in the actuarial assumptions adopted by the Board on June 23, 2020. These new assumptions are described in *Section 4, Exhibit I* of this report. These assumption changes, in particular the lowering of the investment return assumption,[1] the increase in the merit and promotion salary increase assumption, and the change in the mortality assumption, increased the combined (Tier 1 and Tier 3) City contribution rate by 3.32% of payroll (payable on July 15) and the UAAL by $530.7 million.

Pgs. 36, 28, 55, & 56-57

2. The ratio of the valuation value of assets to actuarial accrued liabilities decreased from 71.27% to 69.38%. On a market value of assets basis, the funded ratio decreased from 71.25% to 66.29%. The UAAL increased from $5.975 billion to $6.897 billion. The increase in UAAL was due to: (i) a lower than expected return on the valuation value of assets (after smoothing), (ii) higher than expected salary increases for continuing active members, and (iii) changes in actuarial assumptions, offset somewhat by (iv) actual contributions more than expected as a result of the anticipated one-year delay in implementing the lower contribution rate in the prior valuation, and (v) other miscellaneous actuarial gains.

   A reconciliation of the System's UAAL is provided in *Section 2, Subsection E*. A schedule of the current UAAL amortization amounts is provided in *Section 3, Exhibit G*. Note that a graphical projection of the UAAL amortization bases and payments has been provided in *Section 3, Exhibit H.*

Pg. 30

3. The aggregate employer rate (if received on July 15) calculated in this valuation has increased from 24.63% of payroll to 27.96% of payroll. The annual dollar employer contributions calculated in this valuation increased from about $548.1 million to $683.7 million. The increase in the employer rate was due to: (i) a lower than expected return on the valuation value of assets (after smoothing), (ii) higher than expected salary increases for continuing active members, and (iii) changes in actuarial assumptions, offset somewhat by (iv) a decrease in the normal cost rate due, in part, to the enrollment of new employees in Tier 3, (v) actual contributions more than expected as a result of the anticipated one-year delay in implementing the lower contribution rate in the prior valuation, (vi) amortizing the prior year's UAAL over a larger than expected projected total payroll, (vii) the 40-year minimum GASB 25/27 amortization layer in 2004/2005 being fully amortized, (viii) other miscellaneous actuarial gains.

   A complete reconciliation of the aggregate employer contribution is provided in *Section 2, Subsection F*.

Pg. 20

4. As indicated in *Section 2, Subsection B* of this report, the total net unrecognized investment loss as of June 30, 2020 is $834.6 million[2] for the assets for Retirement, Health, Family Death, and Larger Annuity Benefits. This net investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next several years. This implies that earning the assumed rate of investment return of 7.00% per year (net of investment and administrative expenses) on a market value basis will

[1] The increase in cost due to the lowering of the investment return assumption from 7.25% to 7.00% was largely offset by the cost due to the decrease in the inflation assumption from 3.00% to 2.75%.

[2] For comparison purposes, the total net unrecognized investment loss as of June 30, 2019 was $3,551,703.

result in a net investment loss on the actuarial value of assets after June 30, 2020. Item 9 in the chart in *Subsection B of Section 2* shows how, under the asset smoothing method, the $834.6 million net unrecognized loss will be recognized in the next six years.

The net deferred loss of $834.6 million represents 4.7% of the market value of assets as of June 30, 2020. Unless offset by future investment gains or other favorable experience, the recognition of the net $834.6 million market loss is expected to have an impact on the System's future funded percentage and contribution rate requirements. This potential impact may be illustrated as follows:

a. If the retirement plan component of the net deferred loss was recognized immediately in the valuation value of assets, the funded percentage would decrease from 69.38% to 66.29%.

   For comparison purposes, if the net deferred loss for the retirement plan in the June 30, 2019 valuation had been recognized immediately in the June 30, 2019 valuation, the funded percentage would have decreased from 71.27% to 71.25%.

b. If the retirement plan component of the net deferred loss was recognized immediately in the valuation value of assets, the aggregate employer rate (if received on July 15, 2021) would have increased from 27.96% of payroll to about 30.4% of payroll.

   For comparison purposes, if the net deferred loss for the retirement plan in the June 30, 2019 valuation had been recognized immediately in the June 30, 2019 valuation, the aggregate employer rate (if received on July 15, 2020) would have remained at 24.63% of payroll.

5. As in prior years, the employer contribution rates provided in this report have been developed assuming they will be received by LACERS on any of the following dates:
   a. The beginning of the fiscal year, or
   b. On July 15, 2021, or
   c. Throughout the year (i.e., LACERS will receive contributions at the end of every pay period).

Pg. 55 6. Carrying over the prior instructions from the Board of Administration, the recommended contribution is set equal to the contributions under the current funding policy plus an additional contribution due to the application of the 40-year minimum amortization requirement for fiscal year 2004/2005. However, the amortization of the 40-year minimum for 2004/2005 was fully completed in this valuation.

7. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have changed significantly during 2020. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the pandemic will continue to affect market conditions prior to next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

Pg. 39 8. Actuarial Standard of Practice No. 51 (ASOP 51) requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition." Examples of key risks listed that are particularly relevant to LACERS are asset/liability mismatch risk, investment risk, and longevity risk. The standard also requires an actuary to consider if there is any ongoing contribution risk to the plan, however it does not require the actuary to evaluate the particular ability or willingness of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

The actuary's initial assessment can be strictly a qualitative discussion about potential adverse experience and the possible effect on future results, but it may also include quantitative numerical demonstrations where informative. The actuary is also encouraged to consider a recommendation as to whether a more detailed assessment or risk report would be significantly beneficial for the intended user in order to examine particular financial risks. When making that recommendation, the actuary will take into account such factors as the plan's design, risk profile, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

Since the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan. Earlier this year, prior to the completion of the triennial experience study recommending assumptions for the June 30, 2020 valuations, we prepared a stand-alone Risk Assessment report for the Retirement and Health Plans dated February 19, 2020 by using membership and financial information as provided in the actuarial valuations as of June 30, 2019. That report includes various deterministic projections of future results under different investment return scenarios based on the assumptions adopted for the June 30, 2019 valuations (i.e., prior to the adoption of new assumptions for the June 30, 2020 valuations).

A stand-alone risk assessment report associated with this June 30, 2020 valuation, including the quantitative analyses recommended by Segal in consultation with LACERS staff, will be available in the first quarter of 2021. In the interim, we have included a brief discussion of key risks that may affect the System in *Section 2, Subsection J*.

Summary of Key Valuation Results

		% of Payroll June 30, 2020	% of Payroll June 30, 2019
Employer Contribution Rates:[1]	**Tier 1**		
	• At the beginning of the year	28.56%	25.00%
	• On July 15	28.64%	25.08%
	• At the end of each pay period	29.55%	25.90%
	Tier 3		
	• At the beginning of the year	25.35%	22.13%
	• On July 15	25.43%	22.20%
	• At the end of each pay period	26.23%	22.92%
	Combined		
	• At the beginning of the year	27.88%	24.56%
	• On July 15	27.96%	24.63%
	• At the end of each pay period	28.84%	25.43%

[1] There is a 12-month delay until the rate is effective.

Summary of Key Valuation Results (continued)

		June 30, 2020	June 30, 2019
Actuarial Accrued Liability:	• Retired members and beneficiaries	$12,377,357,430	$11,620,004,477
	• Inactive vested members	562,921,724	516,719,939
	• Active members	9,586,916,141	8,656,696,727
	• Total Actuarial Accrued Liability	$22,527,195,295	$20,793,421,143
	• Normal Cost for plan year beginning June 30	451,426,209	374,967,243
Assets:	• Market Value of Assets (MVA)[1]	$17,863,324,366	$17,707,909,933
	• Actuarial Value of Assets (AVA)[1]	18,697,966,253	17,711,461,636
	• AVA as a percentage of MVA	104.7%	100.00%
	• Valuation Value of Retirement Assets (VVA)	$15,630,102,547	$14,818,564,427
	• Market Value of Retirement Assets (MVA)	14,932,404,300	14,815,592,841
Funded status:	• Unfunded Actuarial Accrued Liability (UAAL) on VVA basis	$6,897,092,748	$5,974,856,716
	• Funded ratio on VVA basis for retirement (VVA/AAL)	69.38%	71.27%
	• UAAL on MVA basis	$7,594,790,995	$5,977,828,302
	• Funded ratio on MVA basis for retirement (MVA/AAL)	66.29%	71.25%
Key assumptions:	• Net investment return	7.00%	7.25%
	• Price Inflation	2.75%	3.00%
	• Payroll growth increase	3.25%	3.50%

[1] Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits.

Summary of Key Valuation Results (continued)

		June 30, 2020	June 30, 2019	Change From Prior Year
Demographic data:	**Active Members:**			
	• Number of members	27,490	26,632	3.2%
	• Average age	46.8	47.0	-0.2
	• Average employment service	12.9	13.2	-0.3
	• Total projected compensation[1]	$2,445,016,587	$2,225,412,831	9.9%
	• Average projected compensation	$88,942	$83,562	6.4%
	Retired Members and Beneficiaries:			
	• Number of members:			
	– Service retired	15,525	15,165	2.4%
	– Disability retired	884	888	-0.5%
	– Beneficiaries	4,014	3,981	0.8%
	– Total	20,423	20,034	1.9%
	• Average age	72.7	72.5	0.2
	• Average monthly benefit	$4,100	$3,942	4.0%
	Inactive Vested Members:			
	• Number of members[2]	9,207	8,588	7.2%
	• Average Age	44.3	44.5	-0.2
	Total Members:	57,120	55,254	3.4%

1 Reflects annualized salaries for part-time members.
2 Includes terminated members due a refund of employee contributions.

Important Information About Actuarial Valuations

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

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

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the Market Value of Assets as of the valuation date, as provided by the System. The System uses an "Actuarial Value of Assets" that differs from market value to gradually reflect year-to-year changes in the Market Value of Assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

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

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

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

Actuarial Certification

November 3, 2020

This is to certify that Segal has conducted an actuarial valuation of the Los Angeles City Employees' Retirement System (LACERS or the System) retirement program as of June 30, 2020, in accordance with generally accepted actuarial principles and practices. In particular, it is our understanding that the assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs). Actuarial valuations are performed annually for this retirement program with the last valuation completed on June 30, 2019. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of the historical funding methods used in determination of the liability for retirement benefits.

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

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

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

Segal prepared all of the supporting schedules in the Actuarial Section of the Comprehensive Annual Financial Report (CAFR) and certain supporting schedules in the Financial Section, based on the results of the June 30, 2020 actuarial valuation. A listing of the supporting schedules Segal prepared for inclusion in the Financial Section as Required Supplementary Information prescribed by GASB, and in the Actuarial Section, is provided below:

<u>Financial Section</u>

1. Schedule of Net Pension Liability[1]
2. Schedule of Changes in Net Pension Liability and Related Ratios[1]
3. Schedule of Contribution History[1]

[1] Source: Segal's GASB Statement No. 67 valuation report as of June 30, 2020.

Actuarial Certification (continued)

November 3, 2020

Actuarial Section

4. Summary of Significant Valuation Results
5. Active Member Valuation Data
6. Retirees and Beneficiaries Added to and Removed from Retiree Payroll
7. Schedule of Funded Liabilities by Type
8. Schedule of Funding Progress
9. Actuarial Analysis of Financial Experience
10. Actuarial Balance Sheet
11. Schedule of Changes in Net Pension Liability and Related Ratios[1]
12. Projection of Pension Plan's Fiduciary Net Position for use in Calculation of Discount Rate of 7.00% and Preparation of GASB 67 Report as of June 30, 2020[1]

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

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

Andy Yeung

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

[1] Source: Segal's GASB Statement No. 67 valuation report as of June 30, 2020.

Section 2: Actuarial Valuation Results

A. Member Data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested members, retired members and beneficiaries.

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

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

Member Population: 2011 – 2020

Year Ended June 30	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2011	25,449	5,623	17,197	22,820	0.90	0.68
2012	24,917	5,808	17,223	23,031	0.92	0.69
2013	24,441	5,799	17,362	23,161	0.95	0.71
2014	24,009	6,031	17,532	23,563	0.98	0.73
2015	23,895	6,507	17,932	24,439	1.02	0.75
2016	24,446	6,895	18,357	25,252	1.03	0.75
2017	25,457	7,428	18,805	26,233	1.03	0.74
2018	26,042	8,028	19,379	27,407	1.05	0.74
2019	26,632	8,588	20,034	28,622	1.07	0.75
2020	27,490	9,207	20,423	29,630	1.08	0.74

[1] Includes terminated members due a refund of member contributions.

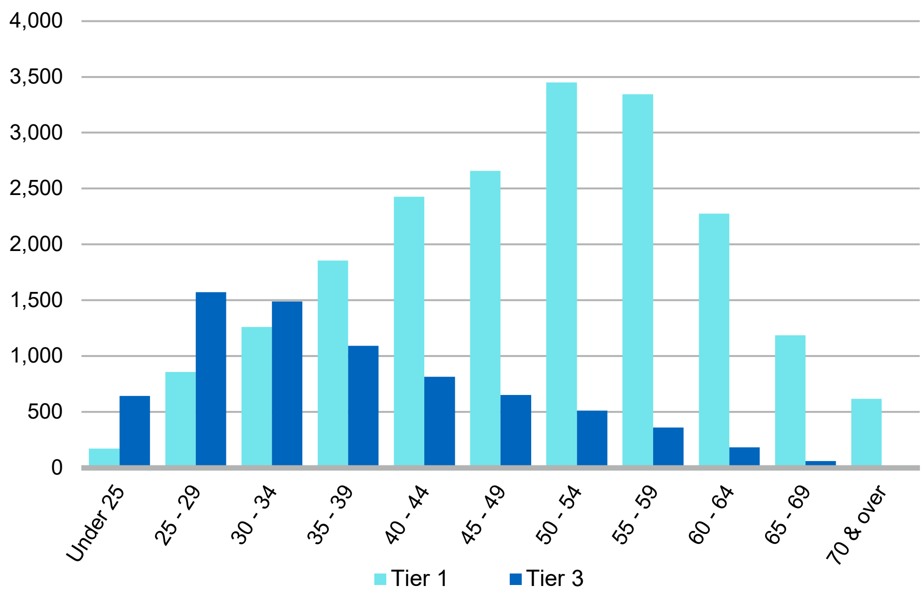
Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 27,490 active members with an average age of 46.8, average years of employment service of 12.9 years and average compensation of $88,942. The 26,632 active members in the prior valuation had an average age of 47.0, average employment service of 13.2 years and average compensation of $83,562.

Among the active members, there were none with unknown age information.

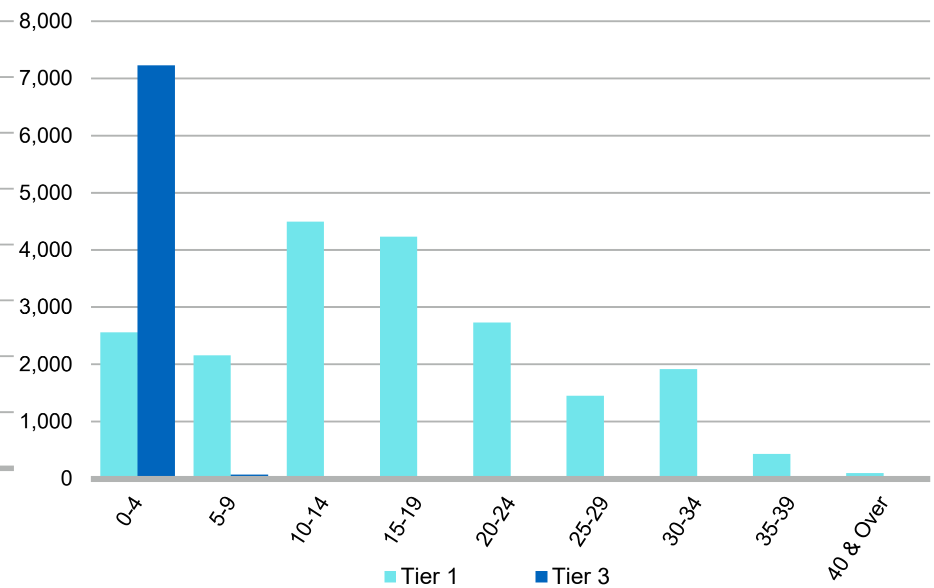
Distribution of Active Members as of June 30, 2020

Actives by Age



Average age	46.8
Prior year average age	47.0
Difference	-0.2

Actives by Years of Employment Service



Average years of service	12.9
Prior year average years of service	13.2
Difference	-0.3

Inactive Members

In this year's valuation, there were 9,207 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 8,588 in the prior valuation.

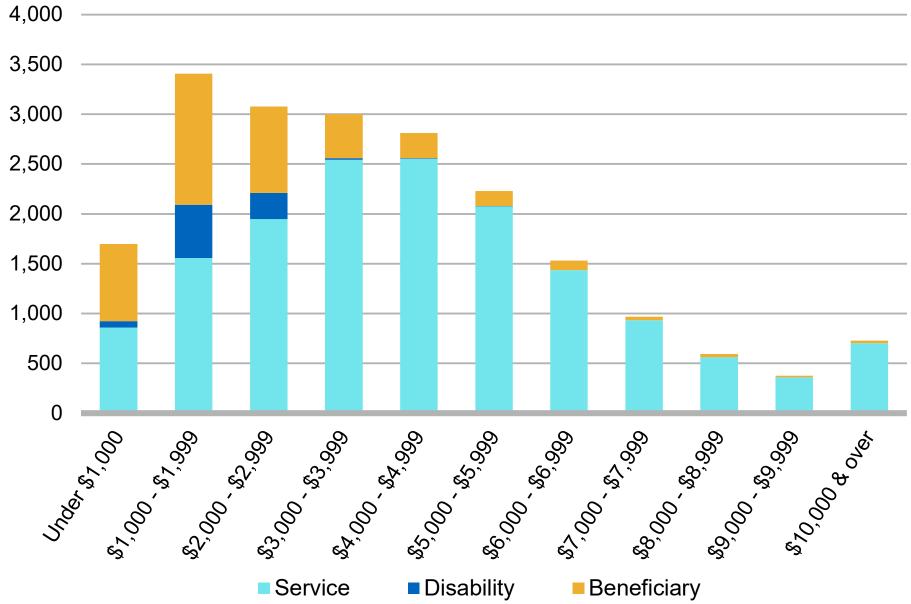
Retired Members and Beneficiaries

As of June 30, 2020, 16,409 retired members and 4,014 beneficiaries were receiving total monthly benefits of $83,727,580. For comparison, in the previous valuation, there were 16,053 retired members and 3,981 beneficiaries receiving monthly benefits of $78,965,717.

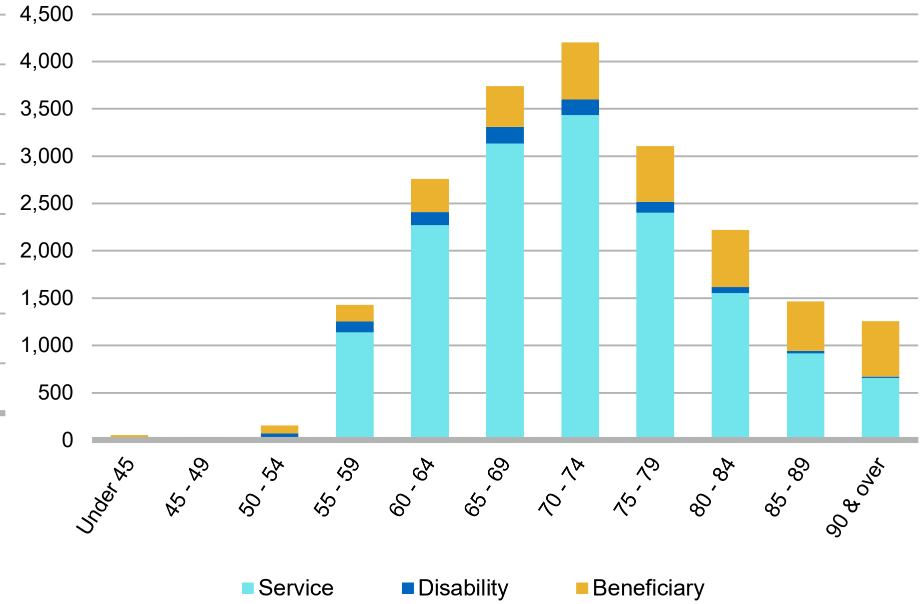
As of June 30, 2020, the average monthly benefit for retired members and beneficiaries is $4,100, compared to $3,942 in the previous valuation. The average age for retired members and beneficiaries is 72.7 in the current valuation, compared with 72.5 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of June 30, 2020

Retired Members and Beneficiaries by Type and Monthly Amount



Retired Members and Beneficiaries by Type and Age



Historical Plan Population

The chart below demonstrates the progression of the active population over the last ten years. The chart also shows the growth among the retired population over the same time period.

Member Data Statistics: 2011 – 2020

	Active Members			Retired Members and Beneficiaries		
Year Ended June 30	**Count**	**Average Age**	**Average Employment Service**	**Count**	**Average Age**	**Average Monthly Amount**
2011	25,449	47.0	13.0	17,197	71.5	$3,181
2012	24,917	47.8	13.9	17,223	71.9	3,275
2013	24,441	48.3	14.5	17,362	72.2	3,355
2014	24,009	48.8	15.0	17,532	72.4	3,406
2015	23,895	48.8	15.0	17,932	72.5	3,487
2016	24,446	48.6	14.7	18,357	72.5	3,533
2017	25,457	48.0	14.1	18,805	72.6	3,632
2018	26,042	47.4	13.7	19,379	72.5	3,784
2019	26,632	47.0	13.2	20,034	72.5	3,942
2020	27,490	46.8	12.9	20,423	72.7	4,100

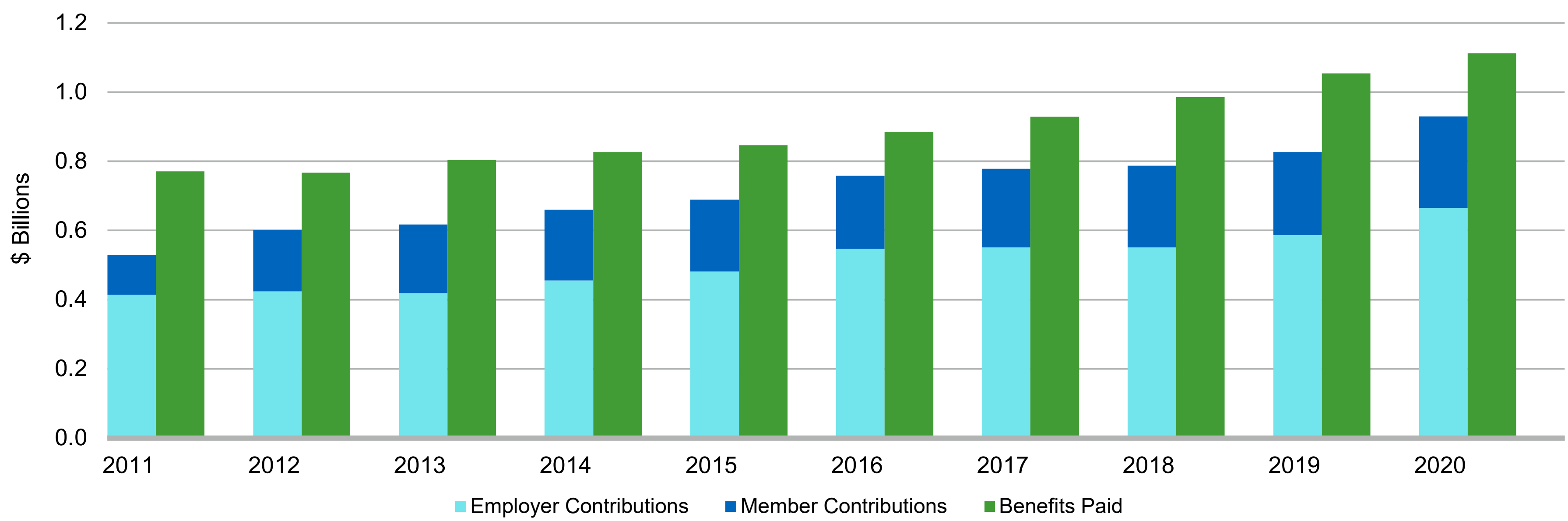
B. Financial Information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D, E, and F*.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Administration has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Comparison of Contributions Made with Benefits for Years Ended June 30, 2011 – 2020



Determination of Actuarial Value of Assets for Year Ended June 30, 2020

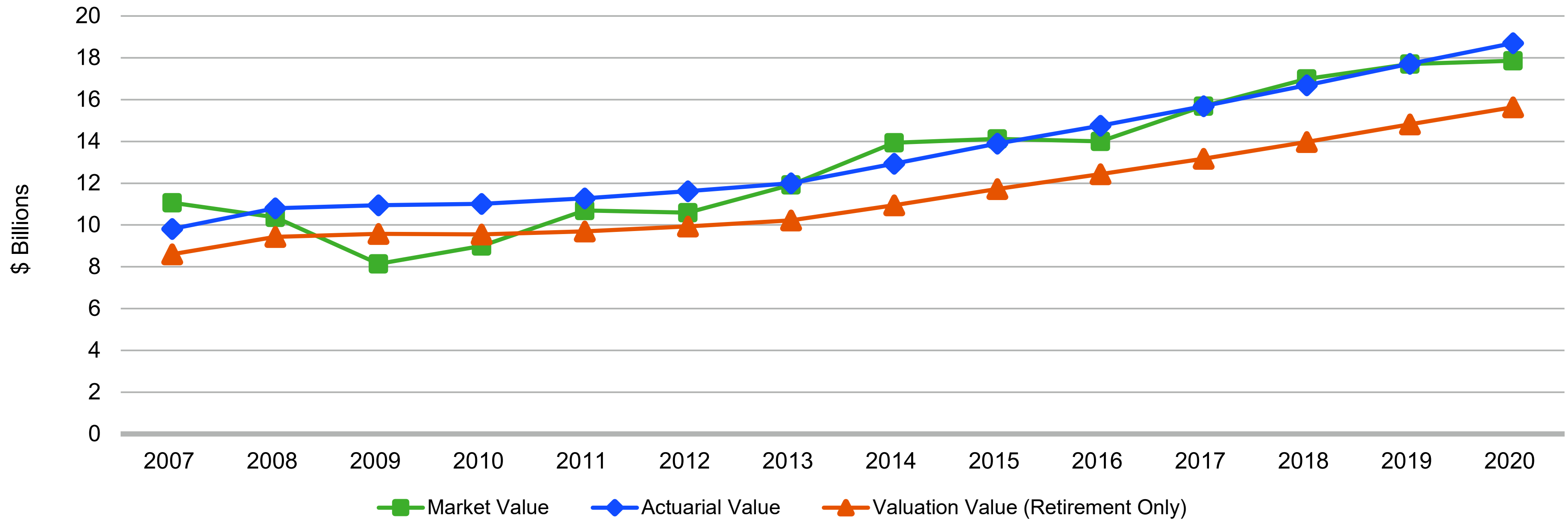
		Actual Return	Expected Return	Investment Gain/(Loss)	Portion Not Recognized	Unrecognized Amount
1	**Market Value of Assets**					**$17,863,324,366**
2	Calculation of unrecognized return[1]					
a)	Year ended June 30, 2020	$338,862,747	$1,299,282,781	-$960,420,034	6/7	-$823,217,172
b)	Year ended June 30, 2019	945,590,839	1,242,978,109	-297,387,270	5/7	-212,419,479
c)	Year ended June 30, 2018	1,498,100,177	1,148,631,872	349,468,305	4/7	199,696,174
d)	Year ended June 30, 2017	1,834,657,728	1,063,688,256	770,969,472	See footnote 2 below	
e)	Year ended June 30, 2016	7,190,895	1,072,214,464	-1,065,023,569		
f)	Year ended June 30, 2015	348,113,908	1,055,874,448	-707,760,540		
g)	Year ended June 30, 2014	2,180,005,303	933,719,722	1,246,285,581		
h)	Combined net deferred loss as of June 30, 2013			-81,571,421	3/6	1,298,590
i)	Total unrecognized return					-$834,641,887
3	**Preliminary Actuarial Value of Assets (1) - (2i)**					**$18,697,966,253**
4	Adjustment to be within 40% corridor					0
5	**Final Actuarial Value of Assets 3 + 4**					**$18,697,966,253**
6	Actuarial Value of Assets as a percentage of Market Value of Assets 5 ÷ 1					104.7%
7	Market value of retirement assets					$14,932,404,300
8	**Valuation value of retirement assets 5 ÷ 1 x 7**					**$15,630,102,547**
9	Deferred return recognized in each of the next 6 years:					
a)	Amount recognized on 6/30/2021					-$129,329,851
b)	Amount recognized on 6/30/2022					-129,329,851
c)	Amount recognized on 6/30/2023					-129,329,851
d)	Amount recognized on 6/30/2024					-129,762,714
e)	Amount recognized on 6/30/2025					-179,686,758
f)	Amount recognized on 6/30/2026					-137,202,862
g)	Total (may not total exactly due to rounding)					-$834,641,887

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

[2] Based on action taken by the Board on July 24, 2018, the net unrecognized gain as of June 30, 2017 (i.e., $2,597,179) has been divided into six level amounts, with three years of gains remaining to be recognized after June 30, 2020.

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

Market Value, Actuarial Value, and Valuation Value (Retirement Only) of Assets as of June 30, 2007 – 2020



C. Actuarial Experience

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

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

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. There are changes in actuarial assumptions reflected in this valuation, as noted in *Section 4, Exhibit I*.

The total loss is $393.8 million, which includes $108.8 million from investment losses (after smoothing), a gain of $23.2 million from contribution experience and $308.2 million in losses from all other sources. The net experience variation from individual sources other than investments and contributions was 1.37% of the Actuarial Accrued Liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2020

1	Net loss from investments[1]	-$108,785,905
2	Net gain from scheduled one-year delay in implementing the lower contribution rate calculated in the June 30, 2019 valuation until fiscal year 2020/2021	23,183,704
3	Net loss from other experience[2]	-308,183,796
4	**Net experience loss: 1 + 2 + 3[3]**	-$393,785,997

[1] Details on next page.

[2] See *Subsection E* for further details.

[3] The net loss is attributed to actual liability experience from July 1, 2019 through June 30, 2020 compared to the projected experience based on the actuarial assumptions as of June 30, 2019. Does not include the effect of plan or assumption changes as of June 30, 2020, if any.

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on LACERS' investment policy. The rate of return on the Market Value of Assets was 1.89% for the year ended June 30, 2020.

For valuation purposes, the assumed rate of return on the Valuation Value of Assets was 7.25% for the June 30, 2019 valuation. The actual rate of return on the valuation value basis for the 2019/2020 plan year was 6.52%. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended June 30, 2020 with regard to its investments.

Investment Experience for Year Ended June 30, 2020

		Market Value	Actuarial Value	Valuation Value
		(Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits)	(Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits)	(Includes assets for Retirement Only)
1	Net investment income	$338,862,747	$1,169,952,931	$977,908,737
2	Average value of assets	17,921,141,802	17,924,693,505	14,988,891,614
3	Rate of return: 1 ÷ 2	1.89%	6.53%	6.52%
4	Assumed rate of return	7.25%	7.25%	7.25%
5	Expected investment income: 2 x 4	$1,299,282,781	$1,299,540,279	$1,086,694,642
6	**Actuarial gain/(loss): 1 - 5**	**-$960,420,034**	**-$129,587,348**	**-$108,785,905**

Section 2: Actuarial Valuation Results

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

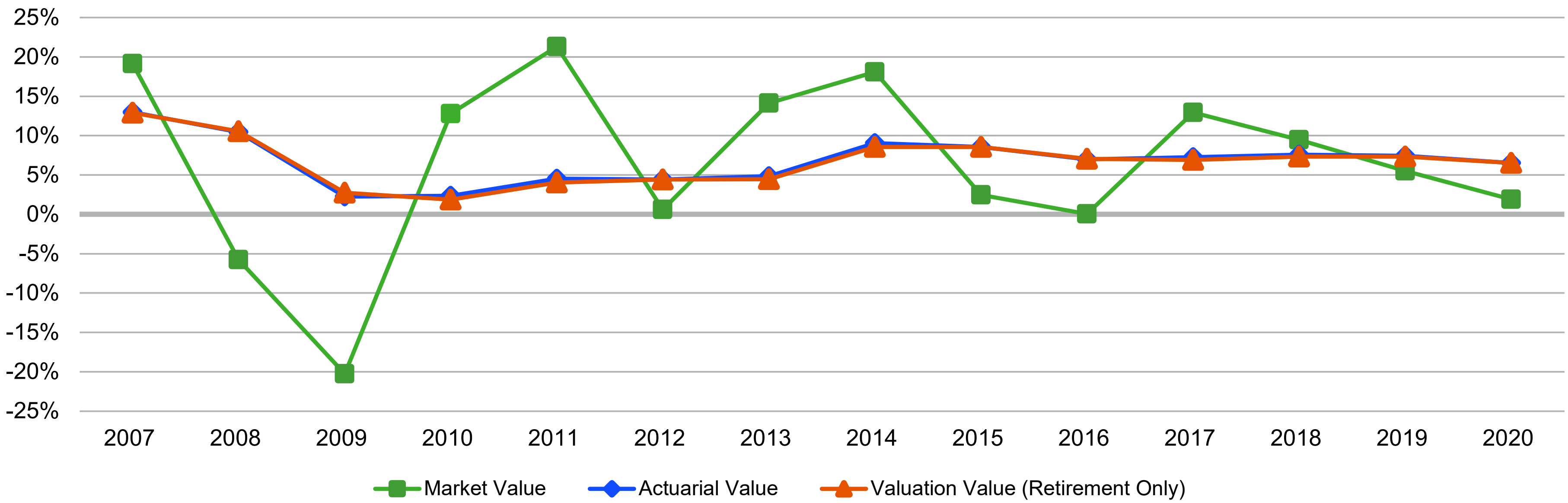
Investment Return – Actuarial Value vs. Market Value: 2011 – 2020

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return[1]	
	Amount	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**
2011	$211,685,408	1.91%	$291,263,922	2.63%	$502,949,330	4.54%	$1,934,130,562	21.33%
2012	213,980,878	1.88%	290,831,650	2.55%	504,812,528	4.43%	67,093,447	0.62%
2013	253,877,178	2.17%	315,633,473	2.69%	569,510,651	4.86%	1,512,696,071	14.14%
2014	225,147,763	1.86%	873,017,519	7.19%	1,098,165,282	9.05%	2,180,005,303	18.09%
2015	231,942,743	1.77%	887,268,617	6.79%	1,119,211,360	8.56%	348,113,908	2.47%
2016	240,916,934	1.71%	742,488,219	5.28%	983,405,153	6.99%	7,190,895	0.05%
2017	277,724,021	1.86%	807,293,418	5.41%	1,085,017,439	7.27%	1,834,657,728	12.94%
2018	291,385,736	1.84%	907,603,043	5.73%	1,198,988,779	7.57%	1,498,100,177	9.46%
2019	308,498,344	1.83%	942,352,775	5.60%	1,250,851,119	7.43%	945,590,839	5.52%
2020	287,869,198	1.61%	882,083,733	4.92%	1,169,952,931	6.53%	338,862,747	1.89%
					Most recent five-year average return:	**7.16%**		**5.87%**
					Most recent ten-year average return:	**6.71%**		**8.41%**

[1] The rates of return have been calculated on a dollar-weighted basis. It is our understanding that LACERS' investment consultant calculates rates of return on a time-weighted basis, which can produce different results.

Section 2, Subsection B described the actuarial asset valuation method that gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

Market Value, Actuarial Value and Valuation Value (Retirement Only) Rates of Return for Years Ended June 30, 2007 – 2020



Contributions

Contributions for the year ended June 30, 2020, when adjusted for timing, totaled $860.8 million, compared to the projected amount of $837.6 million (also adjusted for timing). This resulted in a gain of $23.2 million for the year.

Non-Investment Experience

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

- the extent of turnover among participants,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected),
- salary increases (greater or smaller than projected), and
- cost-of-living adjustments (COLAs; higher or lower than anticipated).

The net loss from this other experience for the year ended June 30, 2020 amounted to $308.2 million, which is 1.37% of the Actuarial Accrued Liability. This loss was mainly due to higher than expected individual salary increases for continuing actives offset to some extent by other gains on demographic experience. See *Subsection E* for a detailed development of the Unfunded Actuarial Accrued Liability.

D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of June 30, 2020 is $22.5 billion, an increase of $1.7 billion, or 8.3%, from the liability as of the prior valuation date. The Actuarial Accrued Liability is expected to grow each year with Normal Cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection).

Actuarial Assumptions

There were assumption changes reflected in this report based on the Actuarial Experience Study (dated June 17, 2020) covering the period July 1, 2016 through June 30, 2019.

- The changes in actuarial assumptions increased the Actuarial Accrued Liability by $530.7 million (a 2.4% increase) and increased the total Normal Cost by $43.6 million (a 10.7% increase). The effect on the employer contribution rate was an increase of 3.32% of payroll (payable on July 15).

Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

Plan Provisions

There were no changes in plan provisions since the prior valuation.

A summary of plan provisions is in *Section 4, Exhibit II*.

E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended June 30, 2020

1	**Unfunded actuarial accrued liability at beginning of year**		**$5,974,856,716**
2	Total Normal Cost at beginning of year		374,967,243
3	Expected employer and member contributions at beginning of year[1]		-780,978,713
4	Interest		403,741,280
5	Expected Unfunded Actuarial Accrued Liability at end of year		$5,972,586,526
6	Changes due to:[2]		
	a. Investment loss on smoothed value of assets	$108,785,905	
	b. Gain due to actual contributions more than expected	-23,183,704	
	c. Loss due to higher than expected salary increases for continuing actives	311,808,252	
	d. Other gains on demographic experience	-3,624,456	
	e. Increase due to new actuarial assumptions	530,720,225	
	Total loss		$924,506,222
7	**Unfunded actuarial accrued liability at end of year**		**$6,897,092,748**

[1] Net of the additional expected employer contributions due to the application of the 40-year minimum amortization required for the remaining GASB 25/27 layer, since the beginning of year UAAL was developed without the liability associated with this layer. These additional contributions served to slightly increase the contribution gain (if any) from the scheduled one-year delay in implementing the lower contribution rates calculated in the prior valuation.

[2] The “net loss from other experience” of $308,183,796 from *Subsection C* is equal to the sum of items 6c and 6d.

F. Recommended Contribution

The amount of annual contribution required to fund the Retirement Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount, adjusted with interest for timing, is then divided by the projected payroll for active members to determine the funding rate of 27.96% of payroll, if received by LACERS on July 15, 2021. The recommended contribution is set equal to the contributions under the current funding policy. (The amortization of the 40-year minimum for 2004/2005 was fully completed in this valuation).

The Board sets the funding policy used to calculate the recommended contribution based on layered amortization periods. See *Section 4, Exhibit I* for further details on the funding policy.

The contribution requirement for the June 30, 2020 valuation is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

A reconciliation of the average recommended employer contribution from June 30, 2019 to June 30, 2020 is shown on the next page. A summary of the recommended contributions by tier is shown on pages 31 through 33.

Reconciliation of Average Recommended Employer Contribution Rate

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

Reconciliation of Average Recommended Employer Contribution Rate[1] from June 30, 2019 to June 30, 2020

		Contribution Rate
1	**Average Recommended Employer Contribution Rate as of June 30, 2019**	**24.63%**
2	Effect of decrease in employer normal cost due to payroll and demographic changes (including the enrollment of new employees in Tier 3)	-0.19%
3	Effect of anticipated one-year delay in implementing the lower combined contribution rate calculated in the prior valuation	-0.08%
4	Effect of investment return less than expected on smoothed value of assets	0.38%
5	Effect of individual salary increases larger than expected for continuing active members	1.08%
6	Effect of amortizing prior year's UAAL over a larger than expected projected total payroll	-1.09%
7	Effect of the 40-year minimum GASB 25/27 amortization layer in 2004/2005 being fully amortized	-0.08%
8	Effect of other demographic experience gains on accrued liability	-0.01%
9	Effect of assumptions changes	3.32%
10	Total change	3.33%
11	**Average Recommended Employer Contribution Rate as of June 30, 2020**	**27.96%**

[1] If received on July 15.

Recommended Employer Contribution Rate

Tier 1		June 30, 2020 Actuarial Valuation		June 30, 2019 Actuarial Valuation	
		Amount	% of Payroll	Amount	% of Payroll
	Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
1	Total normal cost	$367,513,513	19.08%	$323,584,701	17.23%
2	Expected employee contributions[1]	204,809,677	10.64%	199,392,948	10.63%
3	Employer normal cost: 1 - 2	$162,703,836	8.44%	$124,191,753	6.60%
4	Actuarial accrued liability	22,328,886,676		20,683,276,763	
5	Valuation value of assets	15,295,061,248		14,647,297,473	
6	Unfunded actuarial accrued liability: 4 - 5	$7,033,825,428		$6,035,979,290	
7	Amortization of unfunded actuarial accrued liability	384,346,515	19.95%[2,3]	342,147,940	18.22%[2]
8	Total recommended contribution, beginning of year: 3 + 7	$547,050,351	28.39%	$466,339,693	24.82%
9	Total recommended contribution, July 15	548,573,537	28.47%	467,683,003	24.90%
10	Total recommended contribution, end of pay periods	565,873,283	29.38%	482,948,735	25.72%
	Increase in Contribution Rates due to Enhanced Benefits for APO				
11	Employer normal cost, July 15		0.07%		0.07%
12	Unfunded actuarial accrued liability, July 15		0.10%		0.11%
13	Total recommended contribution, July 15		0.17%		0.18%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
14	Total recommended contribution, beginning of year	$550,203,563	28.56%	$469,505,178	25.00%
15	Total recommended contribution, July 15	551,735,529	28.64%	470,857,606	25.08%
16	Total recommended contribution, end of pay periods	569,134,991	29.55%	486,226,961	25.90%
17	Projected payroll	$1,926,176,122		$1,877,504,719	

[1] Discounted to beginning of year. The average employee rate for contributions made at the end of each pay period is actually 11.01% for the June 30, 2019 and June 30, 2020 valuations.

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

[3] For purposes of purchasing service with the Water and Power Employees' Retirement Plan (WPERP) for Tier 1, the UAAL rate as of June 30, 2020 is 19.95% before reflecting enhanced benefits for APO, plus an additional 0.10% for the cost increase for the enhanced APO benefits for a total of 20.05%, if received at the beginning of the year. If received on July 15, the total UAAL rate of 20.05% increases to 20.11%.

Recommended Employer Contribution Rate (continued)

Tier 3

		June 30, 2020 Actuarial Valuation		June 30, 2019 Actuarial Valuation	
		Amount	% of Payroll	Amount	% of Payroll
	Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
1	Total normal cost	$82,654,128	15.93%	$50,176,576	14.42%
2	Expected employee contributions[1]	55,142,465	10.63%	36,931,138	10.62%
3	Employer normal cost: 1 - 2	$27,511,663	5.30%	$13,245,438	3.80%
4	Actuarial accrued liability	173,619,563		84,801,657	
5	Valuation value of assets	335,041,299		171,266,954	
6	Unfunded actuarial accrued liability: 4 - 5	-$161,421,736		-$86,465,297	
7	Amortization of unfunded actuarial accrued liability	103,528,707	19.95%[2,3]	63,401,196	18.22%[2]
8	Total recommended contribution, beginning of year: 3 + 7	$131,040,370	25.25%	$76,646,634	22.02%
9	Total recommended contribution, July 15	131,405,234	25.33%	76,867,418	22.09%
10	Total recommended contribution, end of pay periods	135,549,213	26.13%	79,376,462	22.81%
	Increase in Contribution Rates due to Enhanced Benefits for APO				
11	Employer normal cost, July 15		0.00%		0.00%
12	Unfunded actuarial accrued liability, July 15		0.10%		0.11%
13	Total recommended contribution, July 15		0.10%		0.11%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
14	Total recommended contribution, beginning of year	$131,550,718	25.35%	$77,009,739	22.13%
15	Total recommended contribution, July 15	131,917,002	25.43%	77,231,569	22.20%
16	Total recommended contribution, end of pay periods	136,077,121	26.23%	79,752,499	22.92%
17	Projected payroll	$518,840,465		$347,908,112	

[1] Discounted to beginning of year. The average employee rate for contributions made at the end of each pay period is actually 11.00% for the June 30, 2019 and June 30, 2020 valuations.

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

[3] For purposes of Government Service Buybacks for Tier 3, the cost of the purchase is based, in part, on the "City Contribution Rate," pursuant to the Administrative Code. As Tier 3 has no UAAL as of June 30, 2020, the City's normal cost of 5.30% (beginning of year) is used for purposes of these buybacks.

Recommended Employer Contribution Rate (continued)

Combined

		June 30, 2020 Actuarial Valuation		June 30, 2019 Actuarial Valuation	
		Amount	% of Payroll	Amount	% of Payroll
	Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
1	Total normal cost	$450,167,641	18.41%	$373,761,277	16.80%
2	Expected employee contributions	259,952,142	10.63%	236,324,086	10.62%
3	Employer normal cost: 1 - 2	$190,215,499	7.78%	$137,437,191	6.18%
4	Actuarial accrued liability	22,502,506,239		20,768,078,420	
5	Valuation value of assets	15,630,102,547		14,818,564,427	
6	Unfunded actuarial accrued liability: 4 - 5	$6,872,403,692		$5,949,513,993	
7	Amortization of unfunded actuarial accrued liability	487,875,222	19.95%	405,549,136	18.22%
8	Total recommended contribution, beginning of year: 3 + 7	$678,090,721	27.73%	$542,986,327	24.40%
9	Total recommended contribution, July 15	679,978,771	27.81%	544,550,421	24.47%
10	Total recommended contribution, end of pay periods	701,422,496	28.69%	562,325,197	25.27%
	Increase in Contribution Rates due to Enhanced Benefits for APO				
11	Employer normal cost, July 15		0.05%		0.05%
12	Unfunded actuarial accrued liability, July 15		0.10%		0.11%
13	Total recommended contribution, July 15		0.15%		0.16%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO				
14	Total normal cost	$451,426,209	18.46%	$374,967,243	16.85%
15	Expected employee contributions	259,952,142	10.63%	236,324,086	10.62%
16	Employer normal cost: 14 - 15	$191,474,067	7.83%	$138,643,157	6.23%
17	Actuarial accrued liability	22,527,195,295		20,793,421,143	
18	Valuation value of assets	15,630,102,547		14,818,564,427	
19	Unfunded actuarial accrued liability: 17 - 18	$6,897,092,748		$5,974,856,716	
20	Amortization of unfunded actuarial accrued liability	490,280,214	20.05%	407,871,760	18.33%
21	Total recommended contribution, beginning of year: 16 + 20	$681,754,281	27.88%	$546,514,917	24.56%
22	Total recommended contribution, July 15	683,652,531	27.96%	548,089,175	24.63%
23	Total recommended contribution, end of pay periods	705,212,112	28.84%	565,979,460	25.43%
24	Projected payroll	$2,445,016,587		$2,225,412,831	

Recommended Employer Contribution Rate (continued)

		Tier 1	Tier 3	Combined
	Before Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO			
1	Total normal cost	$367,513,513	$82,654,128	$450,167,641
2	Expected employee contributions[1]	204,809,677	55,142,465	259,952,142
3	Employer normal cost: 1 - 2	$162,703,836	$27,511,663	$190,215,499
4	Payment on unfunded actuarial accrued liability	384,346,515	103,528,707	487,875,222
5	Total recommended contribution: beginning of year: 3 + 4	$547,050,351	$131,040,370	$678,090,721
6	Total recommended contribution: adjusted for July 15 timing	548,573,537	131,405,234	679,978,771
7	Total recommended contribution: adjusted for biweekly timing	565,873,283	135,549,213	701,422,496
8	Item 5 (beginning of year contribution) as a % of projected payroll: 5 ÷ 17	28.39%	25.25%	27.73%
9	Item 6 (July 15 contribution) as a % of projected payroll: 6 ÷ 17	28.47%	25.33%	27.81%
10	Item 7 (biweekly contribution) as a % of projected payroll: 7 ÷ 17	29.38%	26.13%	28.69%
	After Reflecting Increase in Contribution Rates due to Enhanced Benefits for APO			
11	Total recommended contribution: beginning of year	$550,203,563	$131,550,718	$681,754,281
12	Total recommended contribution: adjusted for July 15 timing	551,735,529	131,917,002	683,652,531
13	Total recommended contribution: adjusted for biweekly timing	569,134,991	136,077,121	705,212,112
14	Item 11 (beginning of year contribution) as a % of projected payroll: 11 ÷ 17	28.56%	25.35%	27.88%
15	Item 12 (July 15 contribution) as a % of projected payroll: 12 ÷ 17	28.64%	25.43%	27.96%
16	Item 13 (biweekly contribution) as a % of projected payroll: 13 ÷ 17	29.55%	26.23%	28.84%
17	Projected payroll	$1,926,176,122	$518,840,465	$2,445,016,587

[1] Discounted to beginning of year.

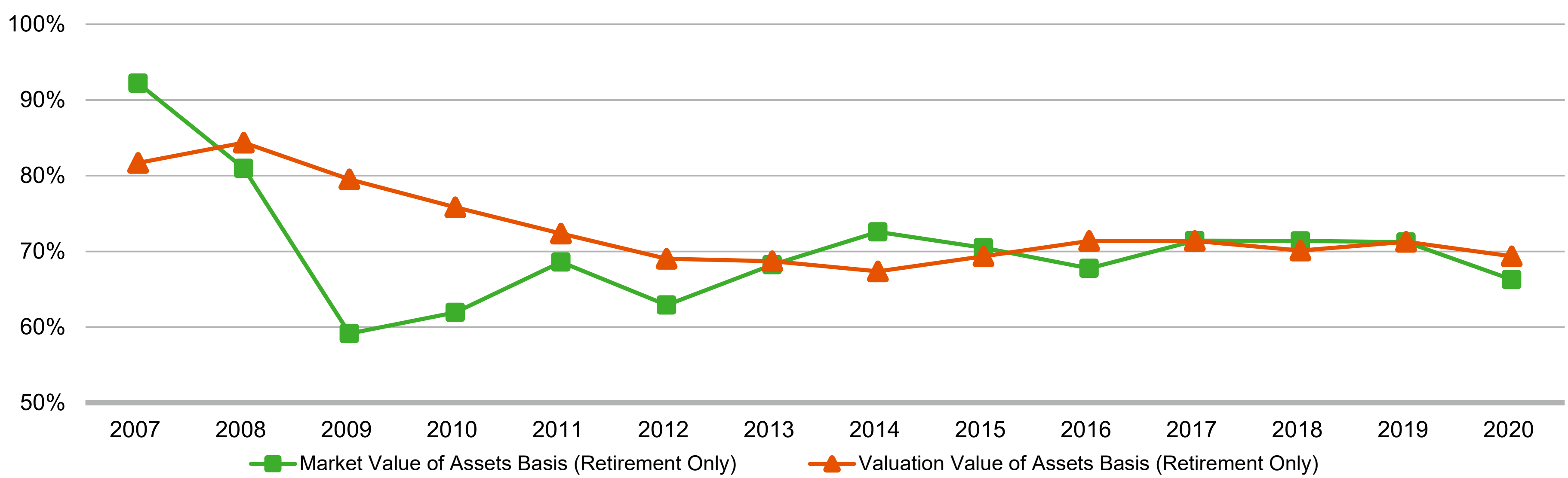
G. Funded Status

A commonly reported piece of information regarding the Plan's financial status is the funded ratio. These ratios compare the Market Value and Valuation Value of Assets to the Actuarial Accrued Liability of the Plan. Higher ratios indicate a relatively well-funded plan while lower ratios may indicate recent changes to actuarial assumptions, funding of the plan below actuarial requirements, poor asset performance, or a variety of other causes.

The chart below depicts a history of the funded ratio for the Plan. The chart on the next page shows the Plan's schedule of funding progress for the last ten years.

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

Funded Ratio for Years Ended June 30, 2007 – 2020



Schedule of Funding Progress for Years Ended June 30, 2011 – 2020

Actuarial Valuation Date as of June 30	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll [(b) - (a)] / (c)
2011	$9,691,011,496	$13,391,704,000	$3,700,692,504	72.37%	$1,833,392,381	201.85%
2012	9,934,959,310	14,393,958,574	4,458,999,264	69.02%	1,819,269,630	245.10%
2013	10,223,960,886	14,881,663,162	4,657,702,276	68.70%	1,846,970,474	252.18%
2014	10,944,750,574	16,248,853,099	5,304,102,525	67.36%	1,898,064,175	279.45%
2015	11,727,161,378	16,909,996,380	5,182,835,002	69.35%	1,907,664,598	271.68%
2016	12,439,250,206	17,424,996,329	4,985,746,123	71.39%	1,968,702,630	253.25%
2017	13,178,333,884	18,458,187,953	5,279,854,069	71.40%	2,062,316,129	256.02%
2018	13,982,435,465	19,944,579,058	5,962,143,593	70.11%	2,177,687,102	273.78%
2019	14,818,564,427	20,793,421,143	5,974,856,716	71.27%	2,225,412,831	268.48%
2020	15,630,102,547	22,527,195,295	6,897,092,748	69.38%	2,445,016,587	282.09%

H. Actuarial Balance Sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, first the amount and timing of all future payments that will be made by the Plan for current participants is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the actuarial present value of future benefits of the Plan.

Second, this actuarial present value of future benefits is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

Actuarial Balance Sheet

	Year Ended	
	June 30, 2020	**June 30, 2019**
Actuarial present value of future benefits		
• Present value of benefits for retired members and beneficiaries	$12,377,357,430	$11,620,004,477
• Present value of benefits for inactive vested members	562,921,724	516,719,939
• Present value of benefits for active members	13,316,127,323	11,598,917,004
Total actuarial present value of future benefits	**$26,256,406,477**	**$23,735,641,420**
Current and future assets		
• Total valuation value of assets	$15,630,102,547	$14,818,564,427
• Present value of future contributions by members	2,139,920,447	1,848,423,280
• Present value of future employer contributions for:		
• Entry age normal cost	1,589,290,735	1,093,796,997
• Unfunded actuarial accrued liability	6,897,092,748	5,974,856,716
Total of current and future assets	**$26,256,406,477**	**$23,735,641,420**

I. Volatility Ratios

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

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

The current AVR is about 6.1. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 6.1% of one-year's payroll. Since actuarial gains and losses are amortized over 15 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the actuarial accrued liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions. The current LVR is about 9.2. This is about 51% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long term.

Volatility Ratios for Years Ended 2011 – 2020

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2011	5.0	7.3
2012	5.0	7.9
2013	5.5	8.1
2014	6.2	8.6
2015	6.2	8.9
2016	6.0	8.9
2017	6.4	9.0
2018	6.5	9.2
2019	6.7	9.3
2020	6.1	9.2

J. Risk Assessment

Since the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. Earlier this year, prior to the completion of the triennial experience study recommending assumptions for the June 30, 2020 valuations, we prepared a stand-alone Risk Assessment report for the Retirement and Health Plans dated February 19, 2020 by using membership and financial information as provided in the actuarial valuations as of June 30, 2019. That report includes various deterministic projections of future results under different investment return scenarios based on the assumptions adopted for the June 30, 2019 valuations (i.e., prior to the adoption of new assumptions for the June 30, 2020 valuations). A copy of the stand-alone risk assessment report associated with this June 30, 2020 valuation, including the quantitative analyses recommended by Segal in consultation with LACERS staff, will be available in the first quarter of 2021.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the Plan's financial health, as well as a discussion of historical trends and maturity masures:

Risk Assessments

- Asset/Liability Mismatch Risk (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the Plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any change in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risk such as longevity, which affects liabilities but have no impact on asset levels. This risk is also discussed below.

- Investment Risk (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial health of the system, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the Actuarial Value of Assets, however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection I, Volatility Ratios*, on page 38, a 1% asset gain or loss (relative to the assumed investment return) translates to about 6.1% of one-year's payroll. Since actuarial gains and losses are amortized over 15 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain or loss.

The single year market value rate of return over the last 10 years has ranged from a low of 0.05% to a high of 21.33%.

- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the Plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections. Effective with this valuation, the Board has adopted mortality tables based on public plan experience that are weighted by benefits and include generational mortality projections.

- Other Risks

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different pension plans.

Some plans also carry significant contribution risk, defined as the potential for actual future contributions deviating from expected future contributions. However, the employer has a proven track-record of making the Actuarially Determined Contributions based on the Board's Actuarial Funding Policy, so contribution risk is minimal.

Evaluation of Historical Trends

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

- The funded percentage on the Valuation Value of Assets basis has decreased from 72.37% to 69.38%. This is primarily due to changes in the actuarial assumptions. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 35.
- The average geometric investment return on the Actuarial Value of Assets over the last 10 years was 6.71%. This includes a high of 9.05% return and a low of 4.43%. The average over the last 5 years was 7.16%. For more details see *Section 2, Subsection C, Investment Return* on page 24.

- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in:
  - 2014 changed the discount rate from 7.75% to 7.50% and updated mortality tables, adding $785 million in unfunded liability;
  - 2017 changed the discount rate from 7.50% to 7.25%, adding $341 million in unfunded liability;
  - 2018 included the use of generational mortality tables to better reflect future mortality improvement, adding $484 million in unfunded liability; and
  - 2020 changed the discount rate from 7.25% to 7.00% and updated mortality tables based on public plan experience that are weighted by benefits, adding $531 million in unfunded liability.

  For more details on the unfunded liability changes see *Section 3, Exhibit G, Table of Amortization Bases* on page 55. A graphical representation of historical changes in UAAL by source prior to this valuation was included in the stand-alone risk assessment report as of June 30, 2019.
- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in the *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 56 and 57.

Maturity Measures

In the last 10 years the ratio of retired members and beneficiaries to active members has increased from 0.68 to 0.74. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 15.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. For the prior year, benefits paid were $166 million more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return. However, this plan currently has relatively low levels of negative cash flows. For more details on historical cash flows see the Comparison of Contributions with Benefits in *Section 2, Subsection B, Financial Information* on page 19.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection I, Volatility Ratios* on page 38.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Active members in valuation:			
• Number	27,490	26,632	3.2%
• Average age	46.8	47.0	-0.2
• Average years of employment service	12.9	13.2	-0.3
• Total projected compensation[1]	$2,445,016,587	$2,225,412,831	9.9%
• Average projected compensation[1]	$88,942	$83,562	6.4%
• Account balances	$2,384,680,646	$2,266,740,475	5.2%
• Total active vested members	17,722	17,812	-0.5%
Inactive vested members:			
• Number	9,207	8,588	7.2%
• Average age	44.3	44.5	-0.2
• Average contribution balance for those with under 5 years of service	$7,097	$6,819	4.1%
• Average monthly benefit at age 60 for those with 5 or more years of service	$1,634	$1,616	1.1%
Retired members:			
• Number in pay status	15,525	15,165	2.4%
• Average service at retirement	26.5	26.5	0.0
• Average age at retirement	60.4	60.4	0.0
• Average age	72.0	71.9	0.1
• Average monthly benefit (includes July COLA)	$4,665	$4,489	3.9%

[1] Reflects annualized salaries for part-time members.

Exhibit A: Table of Plan Coverage (continued)

Total Plan (continued)

Category	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Disabled members:			
• Number in pay status	884	888	-0.5%
• Average service at retirement	11.5	11.6	-0.1
• Average age at retirement	47.8	47.6	0.2
• Average age	67.6	67.1	0.5
• Average monthly benefit (includes July COLA)	$1,815	$1,762	3.0%
Beneficiaries:			
• Number in pay status	4,014	3,981	0.8%
• Average age	76.4	76.3	0.1
• Average monthly benefit (includes July COLA)	$2,418	$2,342	3.2%

Exhibit A: Table of Plan Coverage (continued)

Tier 1[1]

Category	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Active members in valuation:			
• Number	20,101	21,226	-5.3%
• Average age	50.2	49.6	0.6
• Average years of employment service	16.9	16.2	0.7
• Total projected compensation[2]	$1,926,176,122	$1,877,504,719	2.6%
• Average projected compensation[2]	$95,825	$88,453	8.3%
• Account balances	$2,287,178,255	$2,213,161,075	3.3%
• Total active vested members	17,565	17,715	-0.8%
Inactive vested members:			
• Number	7,777	7,638	1.8%
• Average age	45.7	45.5	0.2
• Average contribution balance for those with under 5 years of service	$7,073	$6,941	1.9%
• Average monthly benefit at age 60 for those with 5 or more years of service	$1,635	$1,617	1.1%
Retired members:			
• Number in pay status	15,525	15,165	2.4%
• Average service at retirement	26.5	26.5	0.0
• Average age at retirement	60.4	60.4	0.0
• Average age	72.0	71.9	0.1
• Average monthly benefit (includes July COLA)	$4,665	$4,489	3.9%

[1] Includes the following number of Airport Peace Officers eligible for enhanced benefits:

	June 30, 2020	June 30, 2019
Active Members	416	433
Inactive Members	20	17
Retired Members	55	43

[2] Reflects annualized salaries for part-time members.

Exhibit A: Table of Plan Coverage (continued)

Tier 1 (continued)

Category	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Disabled members:			
• Number in pay status	884	888	-0.5%
• Average service at retirement	11.5	11.6	-0.1
• Average age at retirement	47.8	47.6	0.2
• Average age	67.6	67.1	0.5
• Average monthly benefit (includes July COLA)	$1,815	$1,762	3.0%
Beneficiaries:			
• Number in pay status	4,014	3,981	0.8%
• Average age	76.4	76.3	0.1
• Average monthly benefit (includes July COLA)	$2,418	$2,342	3.2%

Exhibit A: Table of Plan Coverage (continued)

Tier 3

Category	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Active members in valuation:			
• Number	7,389	5,406	36.7%
• Average age	37.4	37.0	0.4
• Average years of employment service	2.0	1.6	0.4
• Total projected compensation[1]	$518,840,465	$347,908,112	49.1%
• Average projected compensation[1]	$70,218	$64,356	9.1%
• Account balances	$97,502,391	$53,579,400	82.0%
• Total active vested members	157	97	61.9%
Inactive vested members:			
• Number	1,430	950	50.5%
• Average age	36.8	36.3	0.5
• Average contribution balance for those with under 5 years of service	$7,189	$6,152	16.9%
• Average monthly benefit at age 60 for those with 5 or more years of service	$438	$438	0.0%
Retired members:			
• Number in pay status	N/A	N/A	N/A
• Average service at retirement	N/A	N/A	N/A
• Average age at retirement	N/A	N/A	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit (includes July COLA)	N/A	N/A	N/A

[1] Reflects annualized salaries for part-time members.

Exhibit A: Table of Plan Coverage (continued)

Tier 3 (continued)

Category	Year Ended June 30: 2020	Year Ended June 30: 2019	Change From Prior Year
Disabled members:			
• Number in pay status	N/A	N/A	N/A
• Average service at retirement	N/A	N/A	N/A
• Average age at retirement	N/A	N/A	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	N/A	N/A	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit (includes July COLA)	N/A	N/A	N/A

Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service,[1] and Average Projected Compensation[2]

Total Plan

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	816	815	1	- -	- -	- -	- -	- -	- -	- -
	$51,419	$51,378	$85,021	- -	- -	- -	- -	- -	- -	- -
25 – 29	2,431	2,249	180	2	- -	- -	- -	- -	- -	- -
	62,897	61,554	79,756	$55,786	- -	- -	- -	- -	- -	- -
30 – 34	2,750	1,980	523	238	9	- -	- -	- -	- -	- -
	71,545	67,308	85,935	75,498	$62,823	- -	- -	- -	- -	- -
35 – 39	2,945	1,404	456	851	219	15	- -	- -	- -	- -
	85,728	74,295	96,215	96,853	93,905	$86,449	- -	- -	- -	- -
40 – 44	3,241	1,033	293	850	837	217	11	- -	- -	- -
	93,252	74,887	99,114	99,622	104,054	105,947	$97,159	- -	- -	- -
45 – 49	3,309	811	232	695	802	614	138	17	- -	- -
	95,932	74,439	94,784	94,155	102,168	113,928	115,105	$109,848	- -	- -
50 – 54	3,960	646	192	614	749	714	515	504	26	- -
	100,553	77,808	93,278	89,229	95,265	111,000	125,436	113,557	$107,276	- -
55 – 59	3,704	465	163	547	655	566	416	718	171	3
	100,861	74,710	90,830	86,547	93,832	106,368	118,698	119,155	115,605	$112,908
60 – 64	2,459	272	118	401	506	320	238	423	153	28
	96,953	73,056	92,931	84,393	86,971	101,824	107,415	115,794	127,377	110,883
65 – 69	1,244	83	41	230	308	195	94	187	69	37
	95,348	66,741	93,239	80,575	87,618	100,015	112,672	111,258	121,314	120,593
70 & over	631	35	36	108	175	105	50	70	19	33
	83,152	63,729	80,434	67,208	72,349	90,988	97,379	104,066	95,903	118,002
Total	**27,490**	**9,793**	**2,235**	**4,536**	**4,260**	**2,746**	**1,462**	**1,919**	**438**	**101**
	$88,942	**$68,239**	**$91,583**	**$90,913**	**$95,453**	**$107,552**	**$117,617**	**$115,542**	**$119,268**	**$116,827**

[1] Based on employment service. Average employment service is 12.9 years compared to average benefit service of 12.2 years.
[2] Limited by Internal Revenue Code Section 401(a)(17) compensation limit.

Exhibit B: Members in Active Service as of June 30, 2020
by Age, Years of Service,[1] and Average Projected Compensation[2] (continued)

Tier 1

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	172	171	1	- -	- -	- -	- -	- -	- -	- -
	$44,909	$44,675	$85,021	- -	- -	- -	- -	- -	- -	- -
25 – 29	859	679	178	2	- -	- -	- -	- -	- -	- -
	63,435	59,261	79,444	$55,786	- -	- -	- -	- -	- -	- -
30 – 34	1,261	518	502	232	9	- -	- -	- -	- -	- -
	74,630	63,964	85,565	75,240	$62,823	- -	- -	- -	- -	- -
35 – 39	1,854	349	434	840	216	15	- -	- -	- -	- -
	91,445	71,620	95,768	96,919	93,852	$86,449	- -	- -	- -	- -
40 – 44	2,426	244	282	842	833	214	11	- -	- -	- -
	99,142	76,006	98,053	99,488	104,107	106,366	$97,159	- -	- -	- -
45 – 49	2,657	188	225	684	796	611	136	17	- -	- -
	100,793	75,304	94,349	93,374	102,177	113,974	115,559	$109,848	- -	- -
50 – 54	3,449	158	184	612	743	710	512	504	26	- -
	103,485	72,305	93,827	89,275	95,024	110,996	125,320	113,557	$107,276	- -
55 – 59	3,344	113	161	546	651	566	415	718	171	3
	103,261	66,933	90,228	86,184	93,738	106,368	118,725	119,155	115,605	$112,908
60 – 64	2,276	93	115	401	506	320	238	422	153	28
	98,494	65,827	91,834	84,393	86,971	101,824	107,415	115,873	127,377	110,883
65 – 69	1,185	25	41	230	307	195	94	187	69	37
	96,604	59,566	93,239	80,575	87,620	100,015	112,672	111,258	121,314	120,593
70 & over	618	23	35	108	175	105	50	70	19	33
	82,710	47,976	76,230	67,208	72,349	90,988	97,379	104,066	95,903	118,002
Total	**20,101**	**2,561**	**2,158**	**4,497**	**4,236**	**2,736**	**1,456**	**1,918**	**438**	**101**
	$95,825	**$64,979**	**$91,040**	**$90,714**	**$95,393**	**$107,584**	**$117,613**	**$115,559**	**$119,268**	**$116,827**

[1] Based on employment service. Average employment service for Tier 1 is 16.9 years compared to average benefit service of 16.0 years.
[2] Limited by Internal Revenue Code Section 401(a)(17) compensation limit.

Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service,[1] and Average Projected Compensation[2] (continued)

Tier 3

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	644	644	- -	- -	- -	- -	- -	- -	- -	- -
	$53,158	$53,158	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	1,572	1,570	2	- -	- -	- -	- -	- -	- -	- -
	62,603	62,546	$107,579	- -	- -	- -	- -	- -	- -	- -
30 – 34	1,489	1,462	21	6	- -	- -	- -	- -	- -	- -
	68,932	68,493	94,760	$85,497	- -	- -	- -	- -	- -	- -
35 – 39	1,091	1,055	22	11	3	- -	- -	- -	- -	- -
	76,012	75,180	105,045	91,861	$97,705	- -	- -	- -	- -	- -
40 – 44	815	789	11	8	4	3	- -	- -	- -	- -
	75,719	74,540	126,318	113,637	93,077	$76,020	- -	- -	- -	- -
45 – 49	652	623	7	11	6	3	2	- -	- -	- -
	76,124	74,178	108,777	142,737	100,965	104,690	$84,204	- -	- -	- -
50 – 54	511	488	8	2	6	4	3	- -	- -	- -
	80,762	79,590	80,668	75,437	125,127	111,699	145,232	- -	- -	- -
55 – 59	360	352	2	1	4	- -	1	- -	- -	- -
	78,566	77,206	139,316	285,000	109,062	- -	107,348	- -	- -	- -
60 – 64	183	179	3	- -	- -	- -	- -	1	- -	- -
	77,796	76,811	134,986	- -	- -	- -	- -	$82,554	- -	- -
65 – 69	59	58	- -	- -	1	- -	- -	- -	- -	- -
	70,125	69,834	- -	- -	86,999	- -	- -	- -	- -	- -
70 & over	13	12	1	- -	- -	- -	- -	- -	- -	- -
	104,206	93,923	227,602	- -	- -	- -	- -	- -	- -	- -
Total	**7,389**	**7,232**	**77**	**39**	**24**	**10**	**6**	**1**	**- -**	**- -**
	$70,218	**$69,393**	**$106,800**	**$113,808**	**$106,051**	**$98,893**	**$118,575**	**$82,554**	**- -**	**- -**

1 Based on employment service. Average employment service for Tier 3 is 2.0 years compared to average benefit service of 1.8 years. We understand that some Tier 3 members entered LACERS with incoming reciprocal (i.e., employment) service. Such service is only used for eligibility determination purposes.
2 Limited by Internal Revenue Code Section 401(a)(17) compensation limit.

Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members	Retired Members	Disabled Members	Beneficiaries	Total
Number as of June 30, 2019	**26,632**	**8,588**	**15,165**	**888**	**3,981**	**55,254**
• New members	2,535	0	0	0	253	2,788
• Terminations – with vested rights	-1,163	1,163	0	0	0	0
• Contribution refunds	-52	-223	0	0	0	-275
• Retirements	-700	-154	854	0	0	0
• New disabilities	0	-25	0	25	0	0
• Return to work	296	-295	0	-1	0	0
• Died with or without beneficiary	-58	-32	-496	-28	-217	-831
• Data adjustments	0	185[1]	2	0	-3	184
Number as of June 30, 2020	**27,490**	**9,207**	**15,525**	**884**	**4,014**	**57,120**

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

[1] Includes members who were both hired and terminated employment after June 30, 2019.

Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis for Retirement, Health, Family Death, and Larger Annuity Benefits

	Year Ended June 30, 2020		Year Ended June 30, 2019	
Net assets at market value at the beginning of the year		**$17,707,909,933**		**$16,989,616,344**
Contribution income:				
• Employer contributions	$665,358,602		$586,753,902	
• Member contributions	263,935,650		240,357,396	
Net contribution income		$929,294,252		$827,111,298
Investment income:				
• Interest, dividends and other income	$404,725,040		$416,415,425	
• Asset appreciation	50,201,536		637,092,495	
• Less investment and administrative fees	-116,063,829		-107,917,081	
Net investment income		$338,862,747		$945,590,839
Total income available for benefits		**$1,268,156,999**		**$1,772,702,137**
Less benefit payments:				
• Benefits paid[1]	-$1,100,410,396		-$1,042,725,029	
• Member refunds	-12,332,170		-11,683,519	
Net benefit payments		-$1,112,742,566		-$1,054,408,548
Change in net assets at market value		$155,414,433		$718,293,589
Net assets at market value at the end of the year		**$17,863,324,366**		**$17,707,909,933**

Note: Results may be slightly off due to rounding.

[1] Includes offsets related to self funded dental insurance premium and health insurance premium reserve.

Exhibit E: Summary Statement of Plan Assets for Retirement, Health, Family Death, and Larger Annuity Benefits

	June 30, 2020		June 30, 2019	
Cash equivalents		$665,047,501		$440,455,108
Accounts receivable:				
• Accrued investment income	$60,957,885		$62,832,172	
• Proceeds from sales of investments	73,531,756		234,349,252	
• Other	18,773,983		15,324,165	
Total accounts receivable		$153,263,624		$312,505,589
Investments:				
• Fixed income	$4,457,096,025		$4,359,360,084	
• Equities	9,527,332,330		9,912,472,407	
• Real estate and alternative investment	2,991,513,495		2,801,074,174	
• Derivative instruments	2,124,127		-796,982	
• Other	552,844,013		918,104,377	
Total investments at market value		$17,530,909,990		$17,990,214,060
Capital assets		42,358,528		8,788,596
Total assets		$18,391,579,643		$18,751,963,353
Accounts payable:				
• Accounts payable and accrued expenses	-$65,278,228		-$54,418,516	
• Accrued investment expenses	-12,118,451		-9,664,366	
• Purchases of investments	-125,595,619		-274,435,536	
• Securities lending collateral	-325,262,979		-705,535,002	
Total accounts payable		-$528,255,277		-$1,044,053,420
Net assets at market value		**$17,863,324,366**		**$17,707,909,933**
Net assets at actuarial value		**$18,697,966,253**		**$17,711,461,636**
Net assets at valuation value		**$15,630,102,547**		**$14,818,564,427**

Note: Results may be slightly off due to rounding.

Exhibit F: Development of the Fund through June 30, 2020 for Retirement, Health, Family Death, and Larger Annuity Benefits

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return[1]	Benefit Payments[2]	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2011	$414,133,032	$114,731,434	$1,934,130,562	$770,755,578	$10,693,603,976	$11,280,641,736	105.5%
2012	423,920,740	178,246,151	67,093,447	767,163,328	10,595,700,986	11,620,457,827	109.7%
2013	419,266,581	197,880,631	1,512,696,071	803,005,352	11,922,538,917	12,004,110,338	100.7%
2014	455,658,786	204,135,914	2,180,005,302	826,566,921	13,935,771,998	12,935,503,398	92.8%
2015	481,765,868	207,564,465	348,113,908	848,455,864[3]	14,124,760,375	13,895,589,227	98.4%
2016	546,687,123	211,344,752	7,190,895	884,923,630	14,005,059,515	14,752,102,625	105.3%
2017	550,961,514	227,531,810	1,834,657,728	928,640,257	15,689,570,310	15,686,973,131	100.0%
2018	551,247,264	236,222,166	1,498,100,177	985,523,573[4]	16,989,616,344	16,687,907,767	98.2%
2019	586,753,902	240,357,396	945,590,839	1,054,408,548	17,707,909,933	17,711,461,636	100.0%
2020	665,358,602	263,935,650	338,862,747	1,112,742,566	17,863,324,366	18,697,966,253	104.7%

Note: Results may be slightly off due to rounding.

[1] On a market value basis, net of investment fees and administrative expenses.

[2] Includes offsets related to self funded dental insurance premium and health insurance premium reserve starting with the June 30, 2019 valuation.

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

[4] Includes approximately $3.0 million transferred to LAFPP on January 5, 2018 for the APO who transferred from LACERS to LAFPP on January 7, 2018.

Exhibit G: Table of Amortization Bases

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Plan amendment (2009 ERIP)	June 30, 2009	$300,225,354	15	146,872,630	4	38,705,800
Combined base	June 30, 2012	4,173,548,280	30	4,660,231,359	22	300,331,891
Experience loss	June 30, 2013	116,022,989	15	89,970,871	8	12,699,598
Experience gain	June 30, 2014	-215,549,892	15	-177,552,618	9	-22,657,842
Change in assumptions	June 30, 2014	785,439,114	20	752,613,330	14	67,092,088
Experience gain	June 30, 2015	-185,473,782	15	-160,677,898	10	-18,767,232
Experience gain	June 30, 2016	-255,444,007	15	-230,429,645	11	-24,880,212
Experience gain	June 30, 2017	-99,814,895	15	-92,991,301	12	-9,358,109
Change in assumptions	June 30, 2017	340,717,846	20	336,739,650	17	25,952,690
Experience loss	June 30, 2018	147,418,362	15	141,404,425	13	13,354,255
Change in assumptions	June 30, 2018	483,717,164	20	481,329,808	18	35,600,268
Plan amendment (APO Tier 1 Enhancement)	January 7, 2018	25,170,149	15	24,689,056	12.5	2,404,992
Experience loss	June 30, 2019	394,012	15	386,859	14	34,487
Experience loss	June 30, 2020	393,785,997	15	393,785,997	15	33,302,617
Change in assumptions	June 30, 2020	530,720,225	20	530,720,225	20	36,464,923
Subtotal before GASB amount				**$6,897,092,748**		**$490,280,214**
40-year minimum GASB 25/27	June 30, 2005	12,708,684	15	0	0	0
Total				**$6,897,092,748**		**$490,280,214**

Note: the equivalent single amortization period is about 19 years.

[1] Beginning of year payments, based on level percentage of payroll.

Exhibit H: Projection of UAAL Balances and Payments

Outstanding Balance of $6.90 Billion in Net UAAL as of June 30, 2020

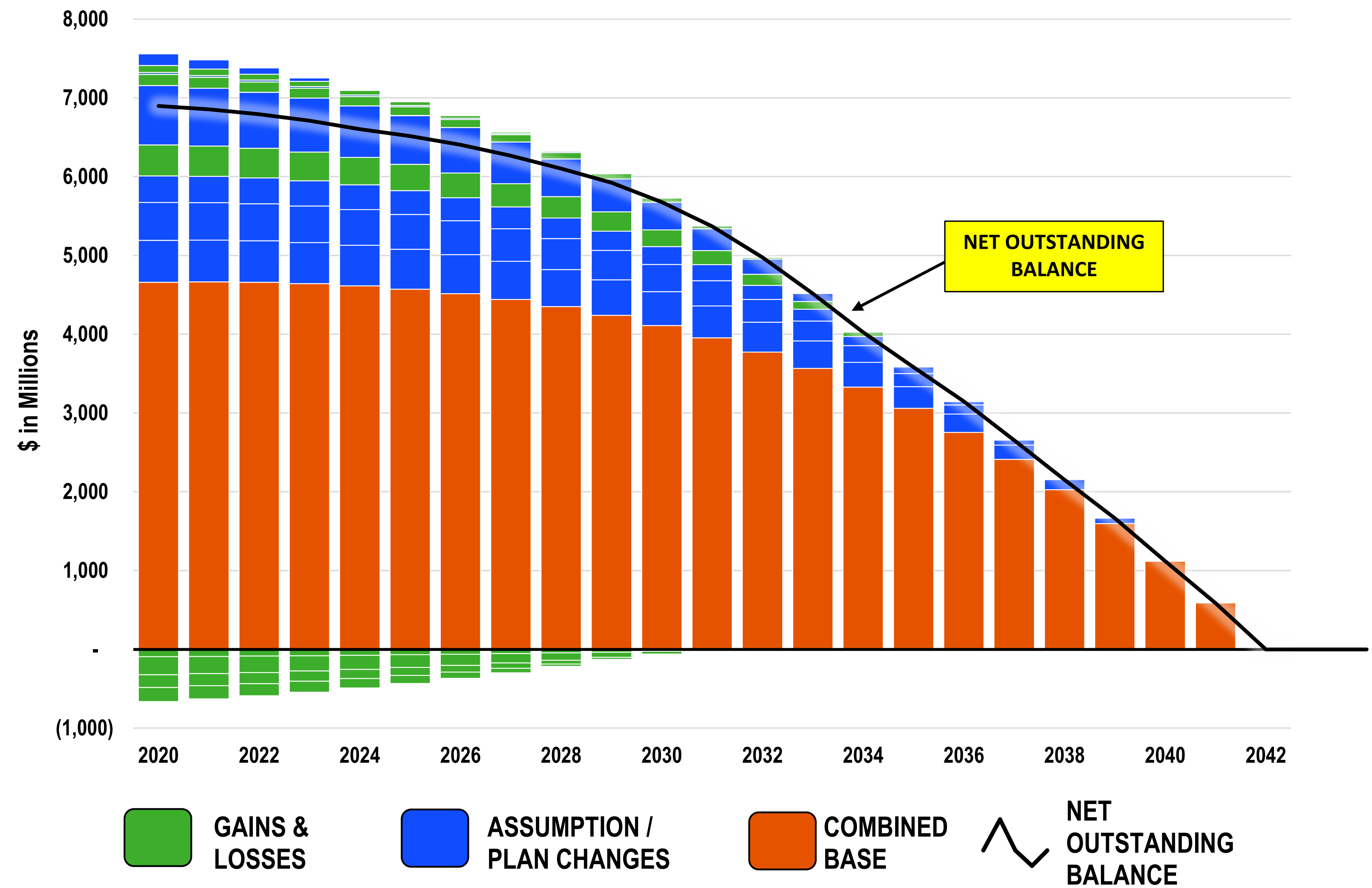


Exhibit H: Projection of UAAL Balances and Payments (continued)

Annual Payments Required to Amortize $6.90 Billion in Net UAAL as of June 30, 2020

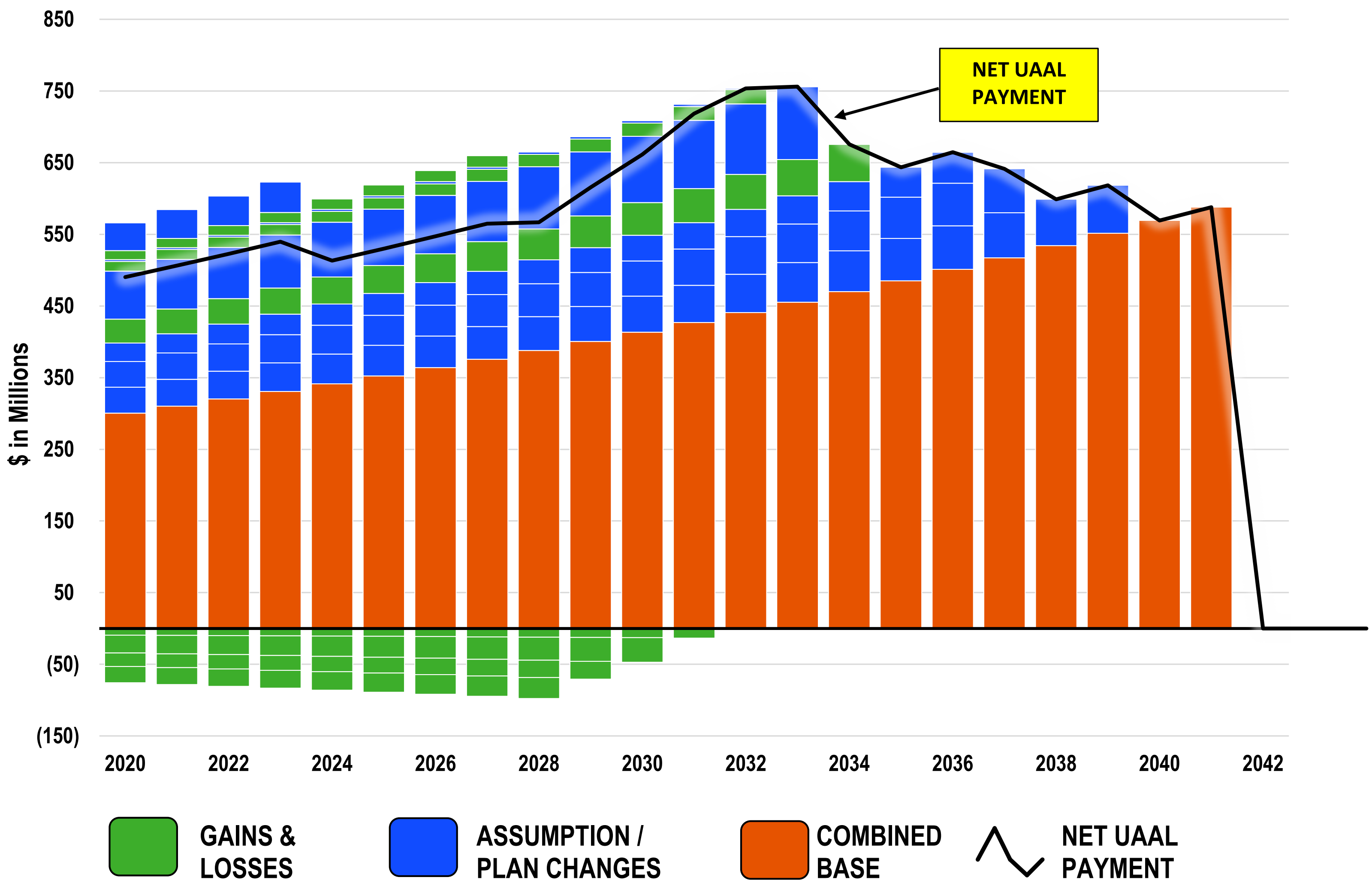


Exhibit I: Definition of Pension Terms

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

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated Normal Costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners and Beneficiaries:	The single-sum value of lifetime benefits to existing pensioners and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected.
Actuarially Equivalent:	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	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. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts 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, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
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 plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
Actuarial Value of Assets (AVA):	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates – the probability of disability retirement at a given age; Withdrawal rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the Valuation Value of Assets (VVA) to the Actuarial Accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the VVA.
Investment Return:	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Valuation Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions and Methods

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2016 through June 30, 2019 Actuarial Experience Study dated June 17, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 3 members. These assumptions have been adopted by the Board.
Economic Assumptions	
Net Investment Return:	7.00%; net of administrative and investment expenses. Based on the Actuarial Experience Study report referenced above, expected administrative and investment expenses represent about 0.40% of the Actuarial Value of Assets.
Employee Contribution Crediting Rate:	Based on average of 5-year Treasury note rate. An assumption of 2.75% is used to approximate that crediting rate in this valuation.
Consumer Price Index (CPI):	Increase of 2.75% per year; benefit increases due to CPI subject to 2.75% maximum for Tier 1 and 2.00% maximum for Tier 3. (For Tier 1 members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3% per year.)
Payroll Growth:	Inflation of 2.75% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.75% per year from the valuation date.

Salary Increases:

The annual rate of compensation increase includes: inflation at 2.75%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotion increases:

Merit and Promotion Increases

Years of Service	Rate (%)
Less than 1	6.70
1 – 2	6.50
2 – 3	5.80
3 – 4	4.00
4 – 5	3.00
5 – 6	2.20
6 – 7	2.00
7 – 8	1.80
8 – 9	1.60
9 – 10	1.40
10 & Over	1.00

Demographic Assumptions:

Post-Retirement Mortality Rates:

Healthy Members

- Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables with rates increased by 10% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Disabled Members

- Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables with rates increased by 10% for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Beneficiaries

- Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Tables with rates increased by 10% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2019.

The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Pre-Retirement Mortality Rates:

- Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables with rates increased by 10%, projected generationally with the two-dimensional mortality improvement scale MP-2019.

	Rate (%)	
Age	**Male**	**Female**
20	0.04	0.01
25	0.03	0.01
30	0.03	0.01
35	0.05	0.02
40	0.06	0.04
45	0.09	0.06
50	0.14	0.08
55	0.21	0.12
60	0.30	0.19
65	0.45	0.30

Generational projections beyond the base year (2010) are not reflected in the above mortality rates.

For Tier 1 Enhanced, 100% of pre-retirement death benefits are assumed to be service-connected.

Disability Incidence:

Disability Incidence

Age	Rate (%)
25	0.01
30	0.02
35	0.04
40	0.06
45	0.12
50	0.16
55	0.18
60	0.18
65	0.22

For Tier 1 Enhanced, 90% of disability retirements are assumed to be service-connected with service-connected disability benefits based on years of service, as follows:

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

For Tier 1 Enhanced, 10% of disability retirements are assumed to be nonservice-connected with nonservice-connected disability benefits equal to 40% of Final Average Monthly Compensation.

Termination:

Less Than Five Years of Service

Years of Service	Rate (%)
Less than 1	11.50
1 – 2	10.00
2 – 3	8.50
3 – 4	7.75
4 – 5	7.00

Five or More Years of Service

Age	Rate (%)
25	7.00
30	6.70
35	5.30
40	3.75
45	3.10
50	3.00
55	3.00
60	3.00

No termination is assumed after a member is eligible for retirement (as long as a retirement rate is present).

Retirement Rates:

	Rate (%)					
	Tier 1		Tier 1 Enhanced		Tier 3	
Age	Non-55/30	55/30	Non-55/30	55/30	Non-55/30	55/30
50	5.0	0.0	7.0	0.0	5.0	0.0
51	3.0	0.0	5.0	0.0	3.0	0.0
52	3.0	0.0	5.0	0.0	3.0	0.0
53	3.0	0.0	5.0	0.0	3.0	0.0
54	18.0	0.0	20.0	0.0	17.0	0.0
55	6.0	27.0	8.0	30.0	0.0[1]	26.0
56	6.0	18.0	8.0	22.0	0.0[1]	17.0
57	6.0	18.0	8.0	22.0	0.0[1]	17.0
58	6.0	18.0	8.0	22.0	0.0[1]	17.0
59	6.0	18.0	8.0	22.0	0.0[1]	17.0
60	7.0	18.0	9.0	22.0	6.0	17.0
61	7.0	18.0	9.0	22.0	6.0	17.0
62	7.0	18.0	9.0	22.0	6.0	17.0
63	7.0	18.0	9.0	22.0	6.0	17.0
64	7.0	18.0	9.0	22.0	6.0	17.0
65	14.0	21.0	16.0	26.0	13.0	20.0
66	14.0	21.0	16.0	26.0	13.0	20.0
67	14.0	21.0	16.0	26.0	13.0	20.0
68	14.0	21.0	16.0	26.0	13.0	20.0
69	14.0	21.0	16.0	26.0	13.0	20.0
70 & Over	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not eligible to retire under the provisions of the Tier 3 plan at these ages with less than 30 years of service. If a member has at least 30 years of service at these ages, they would be subject to the "55/30" rates.

Retirement Age and Benefit for Inactive Vested Members: Pension benefit paid at the later of age 59 or the current attained age. For reciprocals, 4.25% compensation increases per annum.

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

Service:	Employment service is used for eligibility determination purposes. Benefit service is used for benefit calculation purposes.
Future Benefit Accruals:	1.0 year of service credit per year.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Form of Payment:	All active and inactive Tier 1 and Tier 3 members who are assumed to be married or with domestic partners at retirement are assumed to elect the 50% Joint and Survivor Cash Refund Annuity. For Tier 1 Enhanced, the continuance percentage is 70% for service retirement and nonservice-connected disability, and 80% for service-connected disability. Those members who are assumed to be un-married or without domestic partners are assumed to elect the Single Cash Refund Annuity.
Percent Married/Domestic Partner:	For all active and inactive members, 76% of male participants and 52% of female participants are assumed to be married or with domestic partner at pre-retirement death or retirement.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.
Actuarial Funding Policy	
Actuarial Cost Method:	Entry Age Cost Method, level percent of salary. Entry age is calculated as age on the valuation date minus years of employment service. Both the normal cost and the actuarial accrued liability are calculated on an individual basis.
Actuarial Value of Assets:	Market value of assets (MVA) less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. The actuarial value of assets (AVA) is limited by a 40% corridor; the AVA cannot be less than 60% of MVA, nor greater than 140% of MVA.
Valuation Value of Assets:	The portion of the total actuarial value of assets allocated for retirement benefits, based on a prorated share of market value.
Amortization Policy:	The amortization method for the UAAL is a level percent of payroll, assuming annual increases in total covered payroll equal to inflation plus across the board increases (other than inflation). Changes in the UAAL due to actuarial gains/losses are amortized over separate 15-year periods. Changes in the UAAL due to assumption or method changes are amortized over separate 20-year periods. Plan changes, including the 2009 ERIP, are amortized over separate 15-year periods. Future ERIPs will be amortized over 5 years. Any actuarial surplus is amortized over 30 years. All the bases on or before June 30, 2012, except those arising from the 2009 ERIP and the two (at that time) GASB 25/27 layers, were combined and amortized over 30 years effective June 30, 2012.

Other Actuarial Methods	
Employer Contributions:	Employer contributions consist of two components: *Normal Cost* The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is determined as a level percentage of the member's compensation. *Contribution to the Unfunded Actuarial Accrued Liability (UAAL)* The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the System) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual rate of 3.25% (i.e., 2.75% inflation plus 0.50% across-the-board salary increase). The amortization policy is described on the previous page. The recommended employer contributions are provided in *Section 2, Subsection F*.
Internal Revenue Code Section 415:	Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan. A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active members could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets. In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $230,000 for 2020. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions. Benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m). Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard. Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.

Justification for Change in Actuarial Assumptions:	Based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were:
Economic Assumptions	
Net Investment Return:	7.25%; net of administrative and investment expenses. Based on the June 30, 2017 Review of Economic Actuarial Assumptions dated June 30, 2017, expected administrative and investment expenses represent about 0.60% of the Market Value of Assets.
Employee Contribution Crediting Rate:	Based on average of 5-year Treasury note rate. An assumption of 3.00% is used to approximate that crediting rate in this valuation.
Consumer Price Index:	Increase of 3.00% per year; benefit increases due to CPI subject to 3.00% maximum for Tier 1 and 2.00% maximum for Tier 3.
Payroll Growth:	Inflation of 3.00% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 3.00% per year from the valuation date.
Salary Increases:	The annual rate of compensation increase includes: inflation at 3.00%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotion increases:

Merit and Promotion Increases

Years of Service	Rate (%)
Less than 1	6.50
1 – 2	6.20
2 – 3	5.10
3 – 4	3.10
4 – 5	2.10
5 – 6	1.10
6 – 7	1.00
7 – 8	0.90
8 – 9	0.70
9 – 10	0.60
10 & Over	0.40

Justification for Change in Actuarial Assumptions:	Based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were:
<u>Demographic Assumptions:</u>	
Post-Retirement Mortality Rates:	*Healthy Members and All Beneficiaries* • Headcount-Weighted RP-2014 Healthy Annuitant Mortality Tables (separate tables for males and females), with no setback for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2017. *Disabled Members* • Headcount-Weighted RP-2014 Disabled Retiree Mortality Tables (separate tables for males and females), with no setback for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2017. The RP-2014 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.
Pre-Retirement Mortality Rates:	• Headcount-Weighted RP-2014 Employee Mortality Tables (separate tables for males and females), with no setback for males and females, multiplied by 90%, projected generationally with the two-dimensional mortality improvement scale MP-2017.

	Rate (%)[1]	
Age	**Male**	**Female**
20	0.05	0.02
25	0.06	0.02
30	0.05	0.02
35	0.06	0.03
40	0.07	0.04
45	0.11	0.07
50	0.19	0.12
55	0.31	0.19
60	0.51	0.27
65	0.88	0.40

For Tier 1 Enhanced, 100% of pre-retirement death benefits are assumed to be service-connected.

[1] Generational projections beyond the base year (2014) are not reflected in the above mortality rates.

Justification for Change in Actuarial Assumptions:	Based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were:
Disability Incidence:	(see below)

Disability Incidence

Age	Rate (%)
25	0.01
30	0.02
35	0.05
40	0.07
45	0.13
50	0.19
55	0.20
60	0.20

For Tier 1 Enhanced, 90% of disability retirements are assumed to be service-connected with service-connected disability benefits based on years of service, as follows:

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

For Tier 1 Enhanced, 10% of disability retirements are assumed to be nonservice-connected with nonservice-connected disability benefits equal to 40% of Final Average Monthly Compensation.

Justification for Change in Actuarial Assumptions:	Based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were:
Termination:	*Less Than Five Years of Service*

Years of Service	Rate (%)
Less than 1	12.00
1 – 2	10.00
2 – 3	9.00
3 – 4	8.25
4 – 5	7.75

Five or More Years of Service

Age	Rate (%)
25	7.00
30	7.00
35	5.50
40	3.90
45	3.20
50	2.70
55	2.50
60	2.50

No termination is assumed after a member is eligible for retirement (as long as a retirement rate is present).

Justification for Change in Actuarial Assumptions:	Based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were:
Retirement Rates:	

Retirement Rates (%)

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

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

[2] Not eligible to retire under the provisions of the Tier 3 plan.

Section 4: Actuarial Valuation Basis

Justification for Change in Actuarial Assumptions:	Based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study, the following actuarial assumptions were changed. Previously, these assumptions were:
Retirement Age and Benefit for Inactive Vested Members:	Pension benefit paid at the later of age 59 or the current attained age. For reciprocals, 3.90% compensation increases per annum.
Percent Married/Domestic Partner:	For all active and inactive members, 76% of male participants and 50% of female participants are assumed to be married or with domestic partner at pre-retirement death or retirement.

Exhibit II: Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	July 1 through June 30
Census Date:	June 30
Membership Eligibility:	
Tier 1 *(§ 4.1002(a))* *(§ 4.1002.1)*	All employees who became members of the System before July 1, 2013, and certain employees who became members of the System on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees who became members of the System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016. Includes Airport Peace Officers who did not pay for enhanced benefits.
Tier 1 Enhanced *(§4.1002(e))*	All Tier 1 Airport Peace Officers (including certain fire fighters) appointed to their positions before January 7, 2018 who elected to remain at LACERS after January 6, 2018, and who paid their mandatory additional contribution of $5,700 to LACERS before January 8, 2019, or prior to their retirement date, whichever was earlier.
Tier 3 *(§4.1080.2(a))*	All employees who became members of the System on or after February 21, 2016, except as provided otherwise in Section 4.1080.2(b) of the Los Angeles Administrative Code.
Normal Retirement Benefit:	
Tier 1 & Tier 1 Enhanced *Age & Service Requirement* *(§ 4.1005(a))*	Age 70; or Age 60 with 10 years of continuous City service; or Age 55 with at least 30 years of City service.
Tier 1 *Amount (§ 4.1007(a))*	2.16% per year of service credit (not greater than 100%) of the Final Average Monthly Compensation.
Tier 1 Enhanced *Amount (§ 4.1007(a))*	2.30% per year of service credit (not greater than 100%) of the Final Average Monthly Compensation.

Normal Retirement Benefit: (continued)	
Tier 3	
• *With less than 30 Years of Service (§ 4.1080.5(a)(2)(i))*	
Age & Service Requirement	Age 60 with 10 years of service, including 5 years of continuous City service.
Amount	1.50% per year of service credit at age 60 (not greater than 80%[1]) of the Final Average Monthly Compensation.
• *With 30 or more Years of Service (§ 4.1080.5(a)(2)(ii))*	
Age & Service Requirement	Age 60 with 30 years of service, including 5 years of continuous City service.
Amount	2.00% per year of service credit at age 60 (not greater than 80%[1]) of the Final Average Monthly Compensation.
	[1] Except when benefit is based solely on the annuity component funded by the member's contributions.
Early Retirement Benefit:	
Tier 1 & Tier 1 Enhanced	Age 55 with 10 years of continuous City service; or
Age & Service Requirement (§ 4.1005(b))	Any age with 30 years of City service.
Amount (§ 4.1007(a) & (b))	2.16% and 2.30% per year of service credit for Tier 1 and Tier 1 Enhanced, respectively, (not greater than 100%) of the Final Average Monthly Compensation, reduced for retirement ages below age 60 using the following Early Retirement benefit adjustment factors:

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

Early Retirement Benefit: (continued)

Tier 3

Age & Service Requirement — Prior to age 60 with 30 years of service, including 5 years of continuous City service.

(§ 4.1080.5(a)(1))

Amount (§ 4.1080.5(a)(1)) — 2.00% per year of service credit (not greater than 80%[1]) of the Final Average Monthly Compensation, reduced for retirement ages below age 55 using the following Early Retirement benefit adjustment factors:

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

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

Enhanced Retirement Benefit:

Tier 1 & Tier 1 Enhanced

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

Amount — Not applicable - see Normal Retirement amount.

Tier 3

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

Age & Service Requirement — Age 63 with 10 years of service, including 5 years of continuous City service.

Amount — 2.00% per year of service credit at age 63 (not greater than 80%[1]) of the Final Average Monthly Compensation.

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

Age & Service Requirement — Age 63 with 30 years of service, including 5 years of continuous City service.

Amount — 2.10% per year of service credit at age 63 (not greater than 80%[1]) of the Final Average Monthly Compensation.

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

Service Credit:

Tier 1, Tier 1 Enhanced, & Tier 3

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

Final Average Monthly Compensation:	
Tier 1 & Tier 1 Enhanced (§ 4.1001(b))	Equivalent of monthly average salary of highest continuous 12 months (one year); includes base salary plus regularly assigned pensionable bonuses or premium pay.[1]
Tier 3 (§ 4.1080.1(b))	Equivalent of monthly average salary of highest continuous 36 months (three years); limited to base salary and any items of compensation that are designated as pension based.[1] [1] IRC Section 401(a)(17) compensation limit would apply to all employees who began membership in LACERS after June 30, 1996.
Post-Retirement Cost-of-Living Benefits:	
Tier 1 & Tier 1 Enhanced (§ 4.1022)	Based on changes to Los Angeles area[1] Consumer Price Index, to a maximum of 3% per year; excess banked.
Tier 3 (§ 4.1080.17)	Based on changes to Los Angeles area[1] Consumer Price Index, to a maximum of 2% per year; excess not banked. [1] Currently referred to as the Los Angeles-Long Beach-Anaheim Area, by the Bureau of Labor Statistics.
Death after Retirement:	
Tier 1 & Tier 3 (§ 4.1010(c), § 4.1080.10(c), & § 4.1012(c))	(i) 50% of retiree's unmodified allowance continued to an eligible spouse or a domestic partner; or a modified continuance to an eligible spouse or a domestic partner at the time of member's death (or a designated beneficiary selected by member at the time of retirement);[1] (ii) $2,500 lump sum death benefit paid to a designated beneficiary; and (iii) Any unused contributions if the member has elected the cash refund annuity option. [1] The retiree may elect at the time of retirement to take a reduced allowance in order to provide for a higher continuance percentage pursuant to the provisions of either Section 4.1015 (Tier 1) or Section 4.1080.14 (Tier 3).
Tier 1 Enhanced (§ 4.1010.1(b), § 4.1010.1(i), and § 4.1010.1(j)) • *While on service-connected disability*	(i) 80% of retiree's unmodified allowance continued to an eligible spouse or a domestic partner; or a modified continuance to an eligible spouse or a domestic partner at the time of member's death (or a designated beneficiary selected by member at the time of retirement) [1, 2] (ii) $2,500 lump sum death benefit paid to a designated beneficiary; and (iii) Any unused contributions if the member has elected the cash refund annuity option. [1] If the death occurs within three years of the retiree's retirement, the eligible survivor shall receive 80% of the Final Average Monthly Compensation (adjusted with Cost of Living benefit). [2] The retiree may elect at the time of retirement to take a reduced allowance in order to provide for a higher continuance percentage pursuant to the provision of Section 4.1010.1(c).

Death after Retirement: (continued)	
• *While on nonservice-connected disability or service retirement*	(i) 70% of retiree's unmodified allowance continued to an eligible spouse or a domestic partner; or a modified continuance to an eligible spouse or a domestic partner at the time of member's death (or a designated beneficiary selected by member at the time of retirement)[3] (ii) $2,500 lump sum death benefit paid to a designated beneficiary; and (iii) Any unused contributions if the member has elected the cash refund annuity option. [3] The retiree may elect at the time of retirement to take a reduced allowance in order to provide for a higher continuance percentage pursuant to the provision of Section 4.1010.1(c).
Death before Retirement:	
Tier 1, Tier 1 Enhanced & Tier 3 (§ 4.1010(a), § 4.1010.1(b), & § 4.1080.10(a))	Greater of: Option #1: (i) Eligibility – None. (ii) Benefit – Refund of employee contributions plus a limited pension benefit equal to 50% of monthly salary paid, according to the following schedule:[1]

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

[1] Refund only if less than one year of service credit.

Tier 1 & Tier 3	Option #2: (i) Eligibility – Duty-related death or after 5 years of continuous service. (ii) Benefit – Deferred, service, optional, or disability survivorship benefit payable under 100% joint and survivor option to an eligible spouse or qualified domestic partner. (Limited pension waived.) (iii) Refund of accumulated contributions. No survivorship benefit payable with refund.

Death before Retirement: (continued)	
Tier 1 Enhanced	Option #2
• *Service-Connected Death*	(i) Eligibility – None. (ii) Benefit – 80% of member's Final Average Monthly Compensation.
• *Nonservice-Connected Death*	(i) Eligibility – 5 years of service (unless on military leave and killed while on military duties). (ii) Benefit – 50% of member's Final Average Monthly Compensation. (iii) Eligibility – Less than 5 years of service. (iv) Benefit – The Basic Death Benefit shall consist of: (1) the return of a deceased Member's accumulated contributions to the Retirement System with accrued interest thereon, subject to the rights created by virtue of the Member's designation of a beneficiary as otherwise provided in the Retirement System; and (2) if the deceased Member had at least one year of service, the deceased Member's Final Compensation multiplied by the number of completed years of Service, not to exceed six years, provided that said amount shall be paid in monthly installments of one-half of the deceased Member's Final Compensation.
Member Contributions:	
Tier 1 & Tier 1 Enhanced *(§ 4.1003)*	Effective July 1, 2011, the member contribution rate became 7% for all employees. Of the 7% rate, 0.5% is the survivor contribution portion and 6.5% is the normal contribution. The 7% member rate shall be paid until June 30, 2026 or until the ERIP Cost Obligation (defined in ERIP Ordinance No. 180926) is fully paid, whichever comes first.[1] Beginning January 1, 2013, all non-represented members and members in certain bargaining groups are required to pay an additional 4% member contribution rate to defray the cost of providing a Retiree Medical Plan premium subsidy (this additional rate has increased to 4.5% for certain members). For Tier 1 (excluding Tier 1 Enhanced), members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay). [1] The member contribution rate will drop to 6% afterwards.
Tier 3 *(§ 4.1080.3)*	The member contribution rate is 7% for all employees. Of the 7% rate, 0.5% is the survivor contribution portion and 6.5% is the normal contribution. All members are required to pay an additional 4% member contribution rate to defray the cost of providing a Retiree Medical Plan premium subsidy. Members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay).

Disability:	
Tier 1 & Tier 3	
Service Requirement	
(§ 4.1008(a) & § 4.1080.8(a))	5 years of continuous service
Amount[1] *(§ 4.1008(c) & § 4.1080.8(c))*	1/70 (1.43%) of the Final Average Monthly Compensation per year of service or 1/3 of the Final Average Monthly Compensation, if greater. [1] The benefit calculated using the service retirement formula will be paid if the member is eligible and that benefit is greater than that calculated under the disability retirement formula.
Tier 1 Enhanced	
Service Requirement	
(§ 4.1008.1)	
• *Service-Connected Disability*	None
• *Nonservice-Connected Disability*	5 years of continuous service
Amount[1]	
(§ 4.1008.1)	
• *Service-Connected Disability*	30% to 90% of the Final Average Monthly Compensation depending on severity of disability, with a minimum of 2% of the Final Average Monthly Compensation per year of service.
• *Nonservice-Connected Disability*	30% to 50% of the Final Average Monthly Compensation depending on severity of disability. [1] The benefit calculated using the service retirement formula will be paid if the member is eligible and that benefit is greater than that calculated under the disability retirement formula.
Deferred Retirement Benefit (Vested):	
Tier 1 & Tier 1 Enhanced	
(§ 4.1006)	
Age & Service Requirement	Age 70 with 5 years of continuous City service; or Age 60 with 5 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 55 with at least 30 years of service. Deferred employee who meets part-time eligibility: age 60 and at least 10 years elapsed from first date of membership.
Amount	Normal retirement benefit (or refund of contributions and accumulated interest).

Deferred Retirement Benefit (Vested): (continued)	
Age & Service Requirement	A former member who is not yet age 60 may retire for early retirement with an age-based reduced retirement allowance at age 55 or older with 5 years of continuous City service, provided at least 10 years have elapsed from first date of membership. Deferred employee who meets part-time eligibility: age 55 and at least 10 years elapsed from first date of membership.
Amount	Early retirement benefit (or refund of contributions and accumulated interest), using the following Early Retirement benefit adjustment factors:

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

Tier 3 *(§ 4.1080.6)*	
Age & Service Requirement	Age 60 with 5 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 70 with 5 years of continuous City service, regardless of the number of years that have elapsed from first date of membership.
Amount	Normal retirement benefit (based on a Retirement Factor of 1.50%; or refund of contributions and accumulated interest).
Age & Service Requirement	Age 60 with 30 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 63 with 10 years of service, including 5 years of continuous City service.
Amount	Normal retirement benefit (benefit based on a Retirement Factor of 2.00%; or refund of contributions and accumulated interest).
Age & Service Requirement	Age 63 with 30 years of continuous City service and at least 10 years elapsed from first date of membership.
Amount	Enhanced retirement benefit (full retirement benefit based on an unreduced Retirement Factor of 2.10%; or refund of contributions and accumulated interest).

Deferred Retirement Benefit (Vested): (continued)	
Tier 3	
Age & Service Requirement	Age 55 (but not yet 60) with 5 years of continuous City service and at least 10 years elapsed from first date of membership.
Amount	Early retirement benefit (based on a Retirement Factor of 1.50% and using the following Early Retirement benefit adjustment factors; or refund of contributions and accumulated interest):

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

Withdrawal of Contributions Benefit (Ordinary Withdrawal):	Refund of employee contributions with interest.
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.

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

5647183v6/05806.002

Board Meeting: 11/10/2020
Item: VI-A
Attachment 3

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2020

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

Segal

180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

November 3, 2020

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

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2020. The report summarizes the actuarial data used in the valuation, establishes the Actuarially Determined Contribution (ADC) for the Fiscal Year 2021/2022, and analyzes the preceding year's experience. This report was based on the census and unaudited financial data provided by the System and the terms of the Plan as summarized in Exhbit III. The actuarial calculations were completed under the supervision of Thomas Bergman, ASA, MAAA, Enrolled Actuary and Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary. The health care trend and other related medical assumptions have been reviewed by Paul Sadro, ASA, MAAA.

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

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

Sincerely,

Segal

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

JAC/jl

Table of Contents

Section 1: Actuarial Valuation Summary

Purpose

This report presents the results of our actuarial valuation of the City of Los Angeles Employees' Retirement System OPEB plan as of June 30, 2020 for funding purposes. The results of the valuation for financial reporting purposes consistent with GASB Statement No. 74 are provided in a separate report.

Highlights of the Valuation

- The recommended contribution rate has decreased from 4.49% of payroll to 4.29% of payroll while the recommended contribution amount has increased from $100.0 million to $104.9 million, assuming contributions are received by LACERS on July 15. The main reasons for the decline in the contribution rate were: (i) 2020/2021 premium and subsidy levels lower than expected from favorable premium renewal experience, (ii) total projected payroll larger than expected and (iii) repeal of the excise tax on high cost health plans ("Cadillac Tax"), offset to some degree by (iv) reflecting assumptions based on the triennial experience study, (v) updated trend assumption for projecting medical premiums after 2020/2021, and (vi) an investment loss (after smoothing). A complete reconciliation of the change in the recommended contribution rate is provided in Exhibit H. Rates are shown separately for Tier 1 and Tier 3 in Section 2D.
- The ratio of the actuarial value of assets to actuarial accrued liabilities increased from 84.36% to 85.60%. On a market value of assets basis, the funded ratio decreased from 84.34% to 81.78%. The unfunded actuarial accrued liability decreased from $521.6 million to $502.1 million. A complete reconciliation of the System's unfunded actuarial accrued liability is provided in Section 2B.
- As noted above, the GAS 74 report with a measurement date of June 30, 2020 for financial reporting purposes for the Plan is provided as a separate report.
- The GAS 75 report with a measurement date of June 30, 2020 for financial reporting purposes for the employer (with a reporting date of June 30, 2021) will be provided in the next few months.
- The actuarial valuation report as of June 30, 2020 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

Section 1: Actuarial Valuation Summary

- As in prior years, the employer contribution rates provided in this report have been developed assuming they will be received by LACERS on any of the following dates:
  - The beginning of the fiscal year, or
  - On July 15, 2021, or
  - Throughout the year (i.e., LACERS will receive contributions at the end of every pay period).
- As noted above this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have varied significantly during 2020. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the pandemic will continue to affect market conditions, health care costs, and other demographic experience of the Plan prior to next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

Summary of Valuation Results

	June 30, 2020	June 30, 2019
Actuarial Accrued Liability (AAL)	$3,486,530,510	$3,334,298,549
Actuarial Value of Assets	2,984,423,687	2,812,661,894
Unfunded Actuarial Accrued Liability	502,106,823	521,636,655
Funded Ratio on Actuarial Value Basis	85.60%	84.36%
Market Value of Assets	2,851,204,652	$2,812,097,867
Funded Ratio on Market Value Basis	81.78%	84.34%
Actuarially Determined Contribution (ADC)		
Normal cost (beginning of year)	$84,817,265	$76,422,769
Amortization of the unfunded actuarial accrued liability	19,814,702	23,236,922
Total Actuarially Determined Contribution (beginning of year)	**$104,631,967**	**$99,659,691**
Total Actuarially Determined Contribution (July 15)	**$104,923,300**	**$99,950,758**
Total Actuarially Determined Contribution (end of each pay period)	**$108,232,148**	**$103,209,147**
Total projected compensation[1]	$2,445,016,587	$2,225,412,831
ADC as a percentage of pay (there is a 12-month delay until the rate is effective)[2]		
Beginning of year	4.28%	4.47%
July 15	4.29%	4.49%
End of each pay period	4.43%	4.64%
Total Participants[3]	50,730	49,367

[1] Reflects amount calculated in the pension valuation.
[2] A breakdown of the ADC by tier is provided in Section 2D.
[3] Includes 142 pensioners and beneficiaries as of June 30, 2020 and 146 pensioners and beneficiaries as of June 30, 2019 entitled but not yet eligible for health benefits.

Important Information about Actuarial Valuations

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

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

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by LACERS. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	This valuation is based on the market value of assets as of the valuation date, as provided by LACERS.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to health care plan trend and enrollment. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

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

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

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

Actuarial Certification

November 3, 2020

This is to certify that Segal has conducted an actuarial valuation of certain benefit obligations of Los Angeles City Employees' Retirement System's other postemployment benefit programs as of June 30, 2020, in accordance with generally accepted actuarial principles and practices. In particular, it is our understanding that the assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs). Actuarial valuations are performed annually for this other postemployment benefit program with the last valuation completed as of June 30, 2019.

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

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

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

Segal prepared all of the supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report (CAFR) and certain supporting schedules in the Financial Section, based on the results of the June 30, 2020 actuarial valuation. A listing of the supporting schedules Segal prepared for inclusion in the Financial Section, and in the Actuarial Section, is provided below:

Financial Section

1. Schedule of Net OPEB Liability*
2. Schedule of Changes in Net OPEB Liability and Related Ratios*
3. Schedule of Contribution History*

Section 1: Actuarial Valuation Summary

Actuarial Section

4. Summary of Significant Valuation Results
5. Active Member Valuation Data
6. Retirees and Beneficiaries Added to and Removed from Retiree Payroll
7. Schedule of Funded Liabilities by Type
8. Schedule of Funding Progress
9. Actuarial Analysis of Financial Experience
10. Actuarial Balance Sheet
11. Schedule of Changes in Net OPEB Liability and Related Ratios*

* Source: Segal's GASB Statement No. 74 valuation report as of June 30, 2020.

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

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

Thomas Bergman, ASA, MAAA, EA Retiree Health Actuary	Andy Yeung, ASA, MAAA, FCA, EA Vice President and Actuary	Paul Sadro, ASA, MAAA Senior Actuary

Section 2: Actuarial Valuation Results

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

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

	Actuarial Present Value of Total Projected Benefits (APB)	
	June 30, 2020	**June 30, 2019**
Participant Category		
Current retirees, beneficiaries, and dependents	$1,677,722,536	$1,600,130,890
Current active members	2,483,454,887	2,315,499,364
Terminated members entitled but not yet eligible	70,327,305	65,887,248
Total	**$4,231,504,728**	**$3,981,517,502**

	Actuarial Balance Sheet	
	June 30, 2020	**June 30, 2019**
Assets		
1. Actuarial value of assets	$2,984,423,687	$2,812,661,894
2. Present value of future normal costs	744,974,218	647,218,953
3. Unfunded actuarial accrued liability	502,106,823	521,636,655
4. Present value of current and future assets	**$4,231,504,728**	**$3,981,517,502**
Liabilities		
5. Actuarial present value of total projected benefits	$4,231,504,728	$3,981,517,502

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

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

	June 30, 2020	June 30, 2019
Participant Category		
Current retirees, beneficiaries, and dependents	$1,677,722,536	$1,600,130,890
Current active members	1,738,480,669	1,668,280,411
Terminated members entitled but not yet eligible	70,327,305	65,887,248
Total actuarial accrued liability	**$3,486,530,510**	**$3,334,298,549**
Unfunded Actuarial Accrued Liability		
Total actuarial accrued liability	$3,486,530,510	$3,334,298,549
Actuarial value of assets	2,984,423,687	2,812,661,894
Unfunded actuarial accrued liability	**$502,106,823**	**$521,636,655**
Development of Unfunded Actuarial Accrued Liability for the Year Ended June 30, 2020		
1. Unfunded actuarial accrued liability as of June 30, 2019		**$521,636,655**
2. Employer normal cost as of June 30, 2019		76,422,769
3. Expected employer contributions during 2019/2020 fiscal year		-99,659,691
4. Interest		36,133,979
5. Expected unfunded actuarial accrued liability as of June 30, 2020 (1 + 2 + 3 + 4)		$534,533,712
6. Change due to investment loss, after smoothing		20,258,878
7. Change due to actual contributions more than expected		-13,042,556
8. Change due to miscellaneous demographic gains and losses		8,576,854
9. Change due to repeal of excise tax on certain high-cost health plans (“Cadillac Tax”)		-37,656,237
10. Change due to reflecting assumptions based on the triennial experience study		95,917,476
11. Change due to updated 2020/2021 premium and subsidy levels		-144,296,543
12. Change due to updated trend assumption to project future medical premiums after 2020/2021		37,815,239
13. Unfunded actuarial accrued liability as of June 30, 2019 (5 + 6 + 7 + 8 + 9 + 10 + 11 + 12)		**$502,106,823**

C. Table of Amortization Bases

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

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Plan Amendment (2009 ERIP)	06/30/2009	$54,735,645	15	$26,777,114	4	$7,056,656
Combined Base[2]	06/30/2012	597,984,614	30	667,716,407	22	43,031,454
Experience Loss	06/30/2013	16,206,142	15	12,567,172	8	1,773,886
Change in Assumptions	06/30/2014	135,287,549	20	129,633,489	14	11,556,241
Experience Gain	06/30/2014	-101,972,860	15	-83,997,017	9	-10,719,026
Experience Gain	06/30/2015	-193,346,818	15	-167,498,392	10	-19,563,868
Plan Change	06/30/2015	17,466,894	15	15,131,753	10	1,767,394
Experience Gain	06/30/2016	-21,878,470	15	-19,736,021	11	-2,130,960
Change in Assumptions	06/30/2017	121,183,087	20	119,768,163	17	9,230,591
Experience Gain	06/30/2017	-109,999,503	15	-102,479,665	12	-10,312,964
Change in Assumptions	06/30/2018	109,882,560	20	109,340,241	18	8,087,058
Experience Gain	06/30/2018	-59,754,629	15	-57,316,938	13	-5,413,020
Experience Gain	06/30/2019	-117,505,679	15	-115,372,594	14	-10,284,947
Change in Assumptions	06/30/2020	95,917,476	20	95,917,476	20	6,590,334
Experience Gain	06/30/2020	-128,344,365	15	-128,344,365	15	-10,854,127
Total				**$502,106,823**		**$19,814,702**

[1] Level percentage of payroll.

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

D. Determination of Actuarially Determined Contribution (ADC)

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

Tier 1

	Determined as of			
	June 30, 2020		June 30, 2019	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Normal cost	$64,567,930	3.35%	$61,834,858	3.29%
2. Amortization of the unfunded actuarial accrued liability[1]	15,609,958	0.81%	19,604,197	1.04%
3. Total Actuarially Determined Contribution (beginning of year)	**$80,177,888**	**4.16%**	**$81,439,055**	**4.33%**
4. Total Projected Compensation[2]	$1,926,176,122		$1,877,504,719	
5. Adjustment for timing (July 15)	$223,244	0.01%	$237,851	0.02%
6. Total Actuarially Determined Contribution (July 15)	**$80,401,132**	**4.17%**	**$81,676,906**	**4.35%**
7. Adjustment for timing (end of pay period)	$2,758,764	0.15%	$2,900,514	0.16%
8. Total Actuarially Determined Contribution (end of pay period)	**$82,936,652**	**4.31%**	**$84,339,569**	**4.49%**

[1] In developing the UAAL contribution rate, we have combined the UAAL for Tier 1 and Tier 3 and amortized that total UAAL over the total payroll for Tier 1 and Tier 3

[2] Reflects amount calculated in the pension valuation.

Tier 3

	Determined as of			
	June 30, 2020		June 30, 2019	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Normal cost	$20,249,335	3.90%	$14,587,911	4.19%
2. Amortization of the unfunded actuarial accrued liability[1,2]	4,204,744	0.81%	3,632,725	1.04%
3. Total Actuarially Determined Contribution (beginning of year)	**$24,454,079**	**4.71%**	**$18,220,636**	**5.23%**
4. Total Projected Compensation[3]	$518,840,465		$347,908,112	
5. Adjustment for timing (July 15)	$68,089	0.02%	$53,216	0.02%
6. Total Actuarially Determined Contribution (July 15)	**$24,522,168**	**4.73%**	**$18,273,852**	**5.25%**
7. Adjustment for timing (end of pay period)	$841,417	0.17%	$648,942	0.19%
8. Total Actuarially Determined Contribution (end of pay period)	**$25,295,496**	**4.88%**	**$18,869,578**	**5.42%**

[1] In developing the UAAL contribution rate, we have combined the UAAL for Tier 1 and Tier 3 and amortized that total UAAL over the total payroll for Tier 1 and Tier 3.

[2] For purposes of Government Service Buybacks for Tier 3, the cost of the purchase is based, in part, on the "City Contribution Rate," pursuant to the Administrative Code. As Tier 3 has no UAAL as of June 30, 2020, the City's normal cost rate of 3.90% (beginning of year) is used for purposes of these buybacks.

[3] Reflects amount calculated in the pension valuation.

Total Plan

	Determined as of			
	June 30, 2020		June 30, 2019	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Normal cost	$84,817,265	3.47%	$76,422,769	3.43%
2. Amortization of the unfunded actuarial accrued liability	19,814,702	0.81%	23,236,922	1.04%
3. Total Actuarially Determined Contribution (beginning of year)	**$104,631,967**	**4.28%**	**$99,659,691**	**4.47%**
4. Total Projected Compensation[1]	$2,445,016,587		$2,225,412,831	
5. Adjustment for timing (July 15)	$291,333	0.01%	$291,067	0.02%
6. Total Actuarially Determined Contribution (July 15)	**$104,923,300**	**4.29%**	**$99,950,758**	**4.49%**
7. Adjustment for timing (end of pay period)	$3,600,181	0.15%	$3,549,456	0.17%
8. Total Actuarially Determined Contribution (end of pay period)	**$108,232,148**	**4.43%**	**$103,209,147**	**4.64%**

[1] Reflects amount calculated in the pension valuation.

E. Schedule of Employer Contributions

Fiscal Year Ended June 30	Actuarially Determined Contributions[1]	Actual Contributions[1]	Percentage Contributed
2015	$100,466,945	$100,466,945	100.00%
2016	105,983,112	105,983,112	100.00%
2017	97,457,455	97,457,455	100.00%
2018	100,909,010	100,909,010	100.00%
2019	107,926,949	107,926,949	100.00%
2020	112,136,429	112,136,429	100.00%

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

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

F. Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll[1] (c)	UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]
06/30/2015	$2,108,924,651	$2,646,989,367	$538,064,716	79.67%	$1,907,664,598	28.21%
06/30/2016	2,248,753,480	2,793,688,955	544,935,475	80.49%	1,968,702,630	27.68%
06/30/2017	2,438,458,132	3,005,806,234	567,348,102	81.12%	2,062,316,129	27.51%
06/30/2018	2,628,843,511	3,256,827,847	627,984,336	80.72%	2,177,687,102	28.84%
06/30/2019	2,812,661,894	3,334,298,549	521,636,655	84.36%	2,225,412,831	23.44%
06/30/2020	2,984,423,687	3,486,530,510	502,106,823	85.60%	2,445,016,587	20.54%

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

[1] Reflects amount calculated in the pension valuation.

G. Volatility Ratios for Years Ended June 30, 2011 – 2020

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

For LACERS, the current AVR is about 1.17. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 1.17% of one-year's payroll. Since LACERS amortizes actuarial gains and losses over a period of 15 years, there would be a 0.1% of payroll decrease/(increase) in the determined contribution for each 1% asset gain/(loss).

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

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

For LACERS, the current LVR is about 1.43. This is about 22% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long-term.

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2011	0.80	1.07
2012	0.82	1.26
2013	0.93	1.31
2014	1.10	1.40
2015	1.12	1.39
2016	1.08	1.42
2017	1.18	1.46
2018	1.23	1.50
2019	1.26	1.50
2020	1.17	1.43

H. Member Population: 2011 – 2020

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

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

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

Year Ended June 30	Active Members	Inactive Vested Members	Retired Members and Beneficiaries[1]*	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2011	25,449	813	13,436	14,249	0.56	0.53
2012	24,917	858	13,431	14,289	0.57	0.54
2013	24,441	861	13,592	14,453	0.59	0.56
2014	24,009	955	13,686	14,641	0.61	0.57
2015	23,895	1,032	14,012	15,044	0.63	0.59
2016	24,446	1,119	14,313	15,432	0.63	0.59
2017	25,457	1,280	14,652	15,932	0.63	0.58
2018	26,042	1,401	15,144	16,545	0.64	0.58
2019	26,632	1,474	15,791	17,265	0.65	0.59
2020	27,490	1,526	16,107	17,633	0.64	0.59

[1] Excludes retirees and surviving spouses not yet enrolled in retiree health benefits.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Active members in valuation:			
• Number	27,490	26,632	3.2%
• Average age	46.8	47.0	-0.2
• Average service	12.9	13.2	-0.3
• Total projected compensation	$2,445,016,587	$2,225,412,831	9.9%
Inactive members:			
• Number	1,526	1,474	3.5%
• Average age	50.8	50.9	-0.1
Retirees:[1]			
• Number of non-disabled	13,965	13,609	2.6%
• Number of disabled	335	334	0.3%
• Total number of retirees	14,300	13,943	2.6%
• Average age of retirees	72.0	71.9	0.1
• Number of spouses	5,465	5,324	2.6%
• Average age of spouses	68.7	68.5	0.2
Surviving Spouses:[1]			
• Number in pay status	1,807	1,848	-2.2%
• Average age	79.7	79.6	0.1

[1] Excludes retirees and surviving spouses not receiving health benefits.

Tier 1

Category[1]	Year Ended June 30 2020	Year Ended June 30 2019	Change From Prior Year
Active members in valuation:			
• Number	20,101	21,226	-5.3%
• Average age	50.2	49.6	0.6
• Average service	16.9	16.2	0.7
• Total projected compensation	$1,926,176,122	$1,877,504,719	2.6%
Inactive members:			
• Number	1,515	1,466	3.3%
• Average age	50.8	51.0	-0.2
Retirees:[2]			
• Number of non-disabled	13,965	13,609	2.6%
• Number of disabled	335	334	0.3%
• Total number of retirees	14,300	13,943	2.6%
• Average age of retirees	72.0	71.9	0.1
• Number of spouses	5,465	5,324	2.6%
• Average age of spouses	68.7	68.5	0.2
Surviving Spouses:[2]			
• Number in pay status	1,807	1,848	-2.2%
• Average age	79.7	79.6	0.1

[1] Includes the following number of Airport Peace Officers eligible for enhanced retirement benefits:

	June 30, 2020	June 30, 2019
Active Members	416	433
Inactive Members	14	17
Retired Members	52	43

[2] Excludes retirees and surviving spouses not receiving health benefits.

Tier 3

Category	Year Ended June 30: 2020	2019	Change From Prior Year
Active members in valuation:			
• Number	7,389	5,406	36.7%
• Average age	37.4	37.0	0.4
• Average service	2.0	1.6	0.4
• Total projected compensation	$518,840,465	$347,908,112	49.1%
Inactive members:			
• Number	11	8	37.5%
• Average age	45.9	46.7	-0.8
Retirees:[1]			
• Number of non-disabled	N/A	N/A	N/A
• Number of disabled	N/A	N/A	N/A
• Total number of retirees	N/A	N/A	N/A
• Average age of retirees	N/A	N/A	N/A
• Number of spouses	N/A	N/A	N/A
• Average age of spouses	N/A	N/A	N/A
Surviving Spouses:			
• Number in pay status	N/A	N/A	N/A
• Average age	N/A	N/A	N/A

[1] Excludes retirees and surviving spouses not receiving health benefits.

Exhibit B: Reconciliation of Retiree Health Participant Data with Pension Participant Data

Category	Year Ended June 30 2020	Year Ended June 30 2019
Active		
• Pension valuation	27,490	26,632
• Health valuation	27,490	26,632
Retirees		
• Pension valuation	15,525	15,165
• Retirees with no subsidy due to service or decision not to enroll	-1,540	-1,540
• Deferred retirees eligible for future health benefits	-20	-16
• Health valuation	13,965	13,609
Disableds		
• Pension valuation	884	888
• Disabled with no subsidy due to service or decision not to enroll	-498	-500
• Deferred disableds eligible for future health benefits	-51	-54
• Health valuation	335	334
Surviving Spouses		
• Pension valuation	4,014	3,981
• Surviving spouses with no subsidy due to service or decision not to enroll	-2,136	-2,057
• Deferred surviving spouses eligible for future health benefits	-71	-76
• Health valuation	1,807	1,848
Inactive Vested		
• Pension valuation	9,207	8,588
• Inactive vesteds with less than 10 years of service	-7,681	-7,114
• Health valuation	1,526	1,474

Exhibit C: Retirees and Beneficiaries Added to and Removed from Health Benefits

Year Ended 6/30	No. of New Retirees/ Beneficiaries	Annual Allowances Added[1]	No. of Retirees/ Beneficiaries Removed	Annual Allowances Removed	No. of Retirees/ Beneficiaries at 6/30	Annual Allowances at 6/30	Percent Increase in Annual Allowances	Average Annual Allowance
2015	860	$10,844,333	534	$3,174,045	14,012	$112,629,520	7.3	$8,038
2016	837	2,185,058	536	3,102,492	14,313	111,712,086	-0.8	7,805
2017	913	13,706,185	574	3,316,380	14,652	122,101,891	9.3	8,333
2018	1,104	17,413,241	612	3,649,382	15,144	135,865,750	11.3	8,972
2019	1,195	12,323,187	548	3,780,696	15,791	144,408,241	6.3	9,145
2020	967	7,878,817	651	3,979,061	16,107	148,307,997	2.7	9,208

[1] Also reflects changes in subsidies for continuing retirees and beneficiaries.

Exhibit D: Cash Flow Projections

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

	Projected Number of Retirees[1]			Projected Benefit Payments		
Year Ending June 30	**Current**	**Future**	**Total**	**Current**	**Future**	**Total**
2021	21,572	1,891	23,463	$140,083,260	$13,834,128	$153,917,388
2022	21,125	3,078	24,203	138,414,039	24,760,553	163,174,592
2023	20,461	4,210	24,671	138,711,649	36,675,483	175,387,132
2024	19,783	5,312	25,095	138,928,874	49,123,217	188,052,091
2025	19,106	6,358	25,464	138,333,452	61,973,407	200,306,859
2026	18,420	7,356	25,776	137,320,678	74,857,127	212,177,805
2027	17,729	8,315	26,044	135,753,202	87,750,805	223,504,007
2028	17,034	9,261	26,295	133,914,156	100,575,857	234,490,013
2029	16,338	10,178	26,516	132,233,652	113,002,600	245,236,252
2030	15,638	11,076	26,714	130,611,838	125,484,570	256,096,408

[1] Includes spouses of retirees, but excludes those not receiving a subsidy from LACERS.

Exhibit E: Summary Statement of Income and Expenses on a Market Value Basis for Retirement, Health, Family Death, and Larger Annuity Benefits

	Year Ended June 30, 2020		Year Ended June 30, 2019	
Net assets at market value at the beginning of the year		**$17,707,909,933**		**$16,989,616,344**
Contribution income:				
• Employer contributions	$665,358,602		$586,753,902	
• Member contributions	263,935,650		240,357,396	
Net contribution income		$929,294,252		$827,111,298
Investment income:				
• Interest, dividends and other income	$404,725,040		$416,415,425	
• Asset appreciation	50,201,536		637,092,495	
• Less investment and administrative fees	-116,063,829		-107,917,081	
Net investment income		$338,862,747		$945,590,839
Total income available for benefits		**$1,268,156,999**		**$1,772,702,137**
Less benefit payments:				
• Service retirement and disability benefits[1]	-$1,100,410,396		-$1,042,725,029	
• Member refunds	-12,332,170		-11,683,519	
Net benefit payments		-$1,112,742,566		-$1,054,408,548
Change in net assets at market value		$155,414,433		$718,293,589
Net assets at market value at the end of the year		**$17,863,324,366**		**$17,707,909,933**

Note: Results may be slightly off due to rounding.

[1] Includes offsets related to self funded dental insurance premiums and health insurance premium reserve.

Exhibit F: Summary Statement of Plan Assets for Retirement, Health, Family Death, and Larger Annuity Benefits

	June 30, 2020		June 30, 2019	
Cash equivalents		$665,047,501		$440,455,108
Accounts receivable:				
• Accrued investment income	$60,957,885		$62,832,172	
• Proceeds from sales of investments	73,531,756		234,349,252	
• Other	18,773,983		15,324,165	
Total accounts receivable		$153,263,624		$312,505,589
Investments:				
• Fixed income	$4,457,096,025		$4,359,360,084	
• Equities	9,527,332,330		9,912,472,407	
• Real estate and alternative investment	2,991,513,495		2,801,074,174	
• Derivative instruments	2,124,127		-796,982	
• Other	552,844,013		918,104,377	
Total investments at market value		$17,530,909,990		$17,990,214,060
Capital Assets		42,358,528		8,788,596
Total assets		$18,391,579,643		$18,751,963,353
Accounts payable:				
• Accounts payable and accrued expenses	-$65,278,228		-$54,418,516	
• Accrued investment expenses	-12,118,451		-9,664,366	
• Purchases of investments	-125,595,619		-274,435,536	
• Securities lending collateral	-325,262,979		-705,535,002	
Total accounts payable		-$528,255,277		-$1,044,053,420
Net assets at market value		**$17,863,324,366**		**$17,707,909,933**
Net assets at actuarial value		**$18,697,966,253**		**$17,711,461,636**
Net assets at valuation value (health benefits)		**$2,984,423,687**		**$2,812,661,894**

Note: Results may be slightly off due to rounding.

Exhibit G: Determination of Actuarial Value of Assets as of June 30, 2020

		Actual Return	Expected Return	Investment Gain/(Loss)	Portion Not Recognized	Unrecognized Amount
1	**Market Value of Assets**					**$17,863,324,366**
2	Calculation of unrecognized return[1]					
a)	Year ended June 30, 2020	$338,862,747	$1,299,282,781	-$960,420,034	6/7	-$834,641,887
b)	Year ended June 30, 2019	945,590,839	1,242,978,109	-297,387,270	5/7	-212,419,479
c)	Year ended June 30, 2018	1,498,100,177	1,148,631,872	349,468,305	4/7	199,696,174
d)	Year ended June 30, 2017	1,834,657,728	1,063,688,256	770,969,472	See footnote 2 below	
e)	Year ended June 30, 2016	7,190,895	1,072,214,464	-1,065,023,569		
f)	Year ended June 30, 2015	348,113,908	1,055,874,448	-707,760,540		
g)	Year ended June 30, 2014	2,180,005,303	933,719,722	1,246,285,581		
h)	Combined net deferred loss as of June 30, 2013			-81,571,421	3/6	1,298,590
i)	Total unrecognized return					-$834,641,887
3	**Preliminary Actuarial Value of Assets (1) - (2i)**					**18,697,966,253**
4	Adjustment to be within 40% corridor					0
5	**Final Actuarial Value of Assets 3 + 4**					**$18,697,966,253**
6	Actuarial Value of Assets as a percentage of Market Value of Assets 5 ÷ 1					104.7%
7	Market value of health assets					2,851,204,652
8	**Valuation value of health assets 5 ÷ 1 x 7**					**$2,984,423,687**
9	Deferred return recognized in each of the next 6 years:					
a)	Amount recognized on 6/30/2021					-$129,329,851
b)	Amount recognized on 6/30/2022					-129,329,851
c)	Amount recognized on 6/30/2023					-129,329,851
d)	Amount recognized on 6/30/2024					-129,762,714
e)	Amount recognized on 6/30/2025					-179,686,758
f)	Amount recognized on 6/30/2026					-137,202,862
g)	Subtotal (may not total exactly due to rounding)					-$834,641,887

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

[2] Based on action taken by the Board on July 24, 2018, the net unrecognized gain as of June 30, 2017 (i.e., $2,597,179) has been divided into six level amounts, with three years of gains remaining to be recognized after June 30, 2020.

Exhibit H: Reconciliation of Recommended Contribution Rate

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

Reconciliation of Recommended Contribution from June 30, 2019 to June 30, 2020

	Contribution Rate
Recommended Contribution as of June 30, 2019[1]	4.49%
Change due to investment loss, after smoothing	0.07
Change due to miscellaneous demographic gains and losses	0.02
Change due to reflecting assumptions based on the triennial experience study	0.62
Change due to repeal of excise tax on certain high-cost health plans ("Cadillac Tax")	-0.22
Change due to updated 2020/2021 premium and subsidy levels	-0.64
Change due to updated trend assumption to project future medical premiums after 2020/2021	0.18
Change in UAAL rate from larger than expected projected total payroll	-0.23
Recommended Contribution as of June 30, 2020[1]	4.29%

[1] If received on July 15.

Exhibit I: Member Benefit Coverage Information for OPEB

	Aggregate Actuarial Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Assets		
	1	2	3		1	2	3
Valuation Date	Terminated Members	Retirees, Beneficiaries, & Dependents	Active Members	Valuation Value of Retiree Health Assets	Terminated Members	Retirees, Beneficiaries, & Dependents	Active Members
06/30/2015	$42,943,089	$1,210,066,527	$1,393,979,751	$2,108,924,651	100	100	61
06/30/2016	50,413,399	1,275,604,225	1,467,671,331	2,248,753,480	100	100	63
06/30/2017	62,252,306	1,379,356,850	1,564,197,078	2,438,458,132	100	100	64
06/30/2018	67,137,848	1,497,370,105	1,692,319,894	2,628,843,511	100	100	63
06/30/2019	65,887,248	1,600,130,890	1,668,280,411	2,812,661,894	100	100	69
06/30/2020	70,327,305	1,677,722,536	1,738,480,669	2,984,423,687	100	100	71

Section 4: Actuarial Valuation Basis

Exhibit I: Summary of Supplementary Information

Valuation date	June 30, 2020
Actuarial cost method	Entry Age Cost Method, level percent of salary.
Amortization method	Level percent of payroll – assuming a 3.25% increase in total covered payroll.
Amortization period	**Multiple Layers:**
Asset valuation method	Market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.

Multiple Layers:

2009 ERIP	15 years
2012 Combined Base	30 years
Actuarial Experience	15 years
Change in non-health related assumptions	20 years
Change in health related assumptions	15 years
Future ERIP	5 years
AVA in excess of AAL	30 years
Plan Amendment	15 years

Section 4: Actuarial Valuation Basis

Actuarial assumptions		
Investment rate of return	7.00%	
Inflation rate	2.75%	
Real across-the-board salary increase	0.50%	
Projected salary increases	Ranges from 9.95% to 4.25% based on years of service, including inflation	
Medical, dental, Medicare Part B trend rates	See table on page 41.	
Plan participants	**June 30, 2020**	**June 30, 2019**
Current retirees, beneficiaries, and dependents receiving benefits	21,572	21,115
Current active participants	27,490	26,632
Terminated participants entitled but not yet eligible	1,526	1,474
Pensioners and beneficiaries entitled but not yet eligible for health benefits	142	146
Total	**50,730**	**49,367**

Exhibit II: Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2016 through June 30, 2019 Actuarial Experience Study dated June 17, 2020 and retiree health assumptions letter dated September 15, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 3 members. These assumptions have been adopted by the Board.
Economic Assumptions	
Net Investment Return	7.00%, net of administrative and investment expenses.
Payroll Growth:	Inflation of 2.75% per year plus real "across the board" salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.

Salary Increase

Inflation: 2.75%; plus additional 0.50% “across the board” salary increases (other than inflation); plus the following merit and promotional increases:

Merit and Promotion Increases

Service	Rate (%)
Less than 1	6.70
1 – 2	6.50
2 – 3	5.80
3 – 4	4.00
4 – 5	3.00
5 – 6	2.20
6 – 7	2.00
7 – 8	1.80
8 – 9	1.60
9 – 10	1.40
10 & Over	1.00

Demographic Assumptions

Post-Retirement Mortality Rates

Healthy Members

- Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Tables with rates increased by 10% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Disabled Members

- Pub-2010 Non-Safety Disabled Retiree Headcount-Weighted Mortality Tables with rates increased by 10% for males and decreased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Beneficiaries

- Pub-2010 Contingent Survivor Headcount-Weighted Above-Median Mortality Tables with rates increased by 10% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2019.

The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Pre-Retirement Mortality Rates

- Pub-2010 General Employee Headcount-Weighted Above-Median Mortality Tables with rates increased by 10%, projected generationally with the two-dimensional mortality improvement scale MP-2019.

	Rate (%)	
Age	**Male**	**Female**
20	0.04	0.01
25	0.03	0.01
30	0.04	0.02
35	0.05	0.03
40	0.07	0.04
45	0.10	0.06
50	0.15	0.09
55	0.22	0.13
60	0.32	0.19
65	0.46	0.30

Generational projections beyond the base year (2010) are not reflected in the above mortality rates.

For Tier 1 Enhanced, 100% of pre-retirement death benefits are assumed to be service-connected.

Disability Incidence

Disability Incidence

Age	Rate (%)
25	0.01
30	0.02
35	0.04
40	0.06
45	0.12
50	0.16
55	0.18
60	0.18
65	0.22

Termination

Less Than Five Years of Service

Years of Service	Rate (%)
Less than 1	11.50
1 – 2	10.00
2 – 3	8.50
3 – 4	7.75
4 – 5	7.00

Five or More Years of Service

Age	Rate (%)
25	7.00
30	6.70
35	5.30
40	3.75
45	3.10
50	3.00
55	3.00
60	3.00

No termination is assumed after a member is eligible for retirement (as long as a retirement rate is present).

Retirement Rates

	Rate (%)					
	Tier 1		Tier 1 Enhanced		Tier 3	
Age	Non-55/30	55/30	Non-55/30	55/30	Non-55/30	55/30
50	5.0	0.0	7.0	0.0	5.0	0.0
51	3.0	0.0	5.0	0.0	3.0	0.0
52	3.0	0.0	5.0	0.0	3.0	0.0
53	3.0	0.0	5.0	0.0	3.0	0.0
54	18.0	0.0	20.0	0.0	17.0	0.0
55	6.0	27.0	8.0	30.0	0.0[1]	26.0
56	6.0	18.0	8.0	22.0	0.0[1]	17.0
57	6.0	18.0	8.0	22.0	0.0[1]	17.0
58	6.0	18.0	8.0	22.0	0.0[1]	17.0
59	6.0	18.0	8.0	22.0	0.0[1]	17.0
60	7.0	18.0	9.0	22.0	6.0	17.0
61	7.0	18.0	9.0	22.0	6.0	17.0
62	7.0	18.0	9.0	22.0	6.0	17.0
63	7.0	18.0	9.0	22.0	6.0	17.0
64	7.0	18.0	9.0	22.0	6.0	17.0
65	14.0	21.0	16.0	26.0	13.0	20.0
66	14.0	21.0	16.0	26.0	13.0	20.0
67	14.0	21.0	16.0	26.0	13.0	20.0
68	14.0	21.0	16.0	26.0	13.0	20.0
69	14.0	21.0	16.0	26.0	13.0	20.0
70 & Over	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not eligible to retire under the provisions of the Tier 3 plan at these ages with less than 30 years of service. If a member has at least 30 years of service at these ages, they would be subject to the "55/30" rates.

Section 4: Actuarial Valuation Basis

Retirement Age and Benefit for Inactive Vested Members	Assume retiree health benefit will be paid at the later of age 59 or the current attained age.
Future Benefit Accruals	1.0 year of service credit per year.
Service	Employment service is used for eligibility determination purposes. Benefit service is used for benefit calculation purposes.
Future Benefit Accruals	1.0 year of service credit per year.
Unknown Data for Members	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Actuarial Funding Policy	
Actuarial Cost Method	Entry Age Cost Method, level percent of salary. Entry age is calculated as age on the valuation date minus years of employment service. Both the normal cost and the actuarial accrued liability are calculated on an individual basis.
Actuarial Value of Assets	The market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual and expected returns on a market value basis and is recognized over a seven-year period. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.
Valuation Value of Assets	The portion of the total actuarial value of assets allocated for retiree health benefits, based on a prorated share of market value.
Amortization Policy	The amortization method for the UAAL is a level percent of payroll, assuming annual increases in total covered payroll equal to inflation plus across the board increases (other than inflation). Changes in the UAAL due to actuarial gains/losses are amortized over separate 15-year periods. Changes in the UAAL due to assumption or method changes are amortized over separate 20-year periods. Plan changes, including the 2009 ERIP, are amortized over separate 15-year periods. Future ERIPs will be amortized over 5 years. Any actuarial surplus is amortized over 30 years. All the bases on or before June 30, 2012, except those arising from the 2009 ERIP, were combined and amortized over 30 years effective June 30, 2012.

Retiree Health Assumptions	
Per Capita Cost Development	The assumed costs on a composite basis are the future costs of providing postemployment health care benefits at each age. To determine the assumed costs on a composite basis, historical premiums are reviewed and adjusted for increases in the cost of health care services.
Per Capita Cost Development - Maximum Dental Subsidy	(see table below)
Per Capita Cost Development - Medicare Part B Premium Subsidy	(see table and text below)

Per Capita Cost Development - Maximum Dental Subsidy

Carrier	Election Percent (%)	Monthly 2020-2021 Fiscal Year Subsidy
Delta Dental PPO	79.9	$44.60
DeltaCare USA	20.1	14.38

Per Capita Cost Development - Medicare Part B Premium Subsidy

	Single Monthly Premium
Actual monthly premium for calendar year 2020	$144.60
Projected monthly premium for calendar year 2021	153.30
Projected average monthly premium for plan year 2020/2021	148.95

LACERS will not reimburse Medicare Part B premiums for Spouse/Domestic Partners, unless they are LACERS retired Members with Medicare Parts A and B enrolled as a dependent in a LACERS medical plan. This valuation does not reflect Medicare Part B reimbursement for any spouse/domestic partners enrolled in Medicare Parts A and B.

For retirees age 65 and over on the valuation date, we valued the Medicare Part B premium subsidy as reported in the data. For current and future retirees under age 65, we will assume 100% of those electing a medical subsidy will be eligible for the Medicare Part B premium subsidy.

Per Capita Cost Development – Medical Subsidy	Tier members 1 not subject to medical subsidy cap and all Tier 3 members.

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

2020-2021 Fiscal Year		Single Party			Married/With Domestic Partner			Eligible Survivor		
Carrier	Observed and Assumed Election Rate (%)	Monthly Premium*	Maximum Subsidy	Subsidy	Monthly Premium*	Maximum Subsidy	Subsidy	Monthly Premium*	Maximum Subsidy	Subsidy
Kaiser HMO	61.5	$853.39	$1,790.80	$853.39	$1,706.78	$1,790.80	$1,706.78	$853.39	$853.39	$853.39
Anthem Blue Cross PPO	21.6	1,275.68	1,790.80	1,275.68	2,546.32	1,790.80	1,790.80	1,275.68	853.39	853.39
Anthem Blue Cross HMO	16.9	1,054.59	1,790.80	1,054.59	2,104.14	1,790.80	1,790.80	1,054.59	853.39	853.39

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

Participant Eligible for Medicare A&B

2020-2021 Fiscal Year		Single Party			Married/With Domestic Partner			Eligible Survivor		
Carrier	Observed and Assumed Election Rate (%)	Monthly Premium*	Maximum Subsidy	Subsidy	Monthly Premium*	Maximum Subsidy	Subsidy	Monthly Premium*	Maximum Subsidy	Subsidy
Kaiser Senior Advantage HMO	57.1	$262.47	$262.47	$262.47	$524.94	$524.94	$524.94	$262.47	$262.47	$262.47
Anthem Blue Cross Medicare Supplement	31.8	557.75	557.75	557.75	1,110.46	1,072.87	1,072.87	557.75	557.75	557.75
UHC Medicare Advantage Plan	11.1	278.98	278.98	278.98	552.93	552.93	552.93	278.98	278.98	278.98

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

** *Rates for CA plan.*

Per Capita Cost Development – Medical Subsidy	Tier 1 Subject to Retiree Medical Subsidy Cap

Tier 1 members who are subject to the retiree medical subsidy cap will have monthly health insurance subsidy maximums capped at the levels in effect at July 1, 2011, as shown in the table below. We understand that no active members are subject to the cap but that some inactive members may be subject to the cap.

Retiree Plan	Single Party	Married/With Domestic Partner	Eligible Survivor
Under 65 – All Plans	$1,190.00	$1,190.00	$593.62
Over 65			
Kaiser Senior Advantage	$203.27	$406.54	$203.27
Anthem Blue Cross Medicare Supplement	478.43	478.43*	478.43
UHC Medicare Adv. HMO	219.09	433.93	219.09

*The reason the subsidy is only at the single-party amount is that there is no excess subsidy to cover a dependent.

Per Capita Cost Development – Medical Subsidy	Adjustments to per-capita costs (as shown on page 39-40) based on age, gender, and status, are as follows:

	Retiree		Spouse	
Age	Male	Female	Male	Female
55	0.9003	0.9295	0.7085	0.8025
60	1.0692	1.0019	0.9485	0.9308
64	1.2266	1.0628	1.1974	1.0476
65	0.9182	0.7805	0.9182	0.7805
70	1.0642	0.8411	1.0642	0.8411
75	1.1468	0.9053	1.1468	0.9053
80+	1.2350	0.9760	1.2350	0.9760

Health Care Cost Subsidy Trend Rates	Trend is to be applied to premium for shown fiscal year to calculate next fiscal year's projected premium. First Fiscal Year is July 1, 2020 through June 30, 2021.

	Rate (%)					
Plan	**Anthem Blue Cross PPO,** Under Age 65	**Anthem Blue Cross Medicare Supplement**	**Kaiser HMO,** Under Age 65	**Kaiser Senior Advantage**	**Anthem Blue Cross HMO,** Under 65	**UHC Medical HMO**
Trend to be applied to 2020-2021 Fiscal Year premium	3.71	4.45	3.37	3.12	4.85	3.12

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

	Approximate Trend Rate (%)			**Trend Applied to Calculate Following Year Premium Rate (%)**	
Fiscal Year	**Non-Medicare**	**Medicare**	**Calendar Year**	**Non-Medicare**	**Medicare**
2021-2022	6.62	6.12	2021	6.75*	6.25*
2022-2023	6.37	5.87	2022	6.50	6.00
2023-2024	6.12	5.62	2023	6.25	5.75
2024-2025	5.87	5.37	2024	6.00	5.50
2025-2026	5.62	5.12	2025	5.75	5.25
2026-2027	5.37	4.87	2026	5.50	5.00
2027-2028	5.12	4.62	2027	5.25	4.75
2028-2029	4.87	4.50	2028	5.00	4.50
2029-2030	4.62	4.50	2029	4.75	4.50
2030 and later	4.50	4.50	2030	4.50	4.50

Dental Premium Trend	4.00% for all years
Medicare Part B Premium Trend	4.50% for all years.

* *For example, the 6.75% assumption when applied to the 2021 non-Medicare medical premiums would provide the projected 2022 non-Medicare medical premiums. This trend would also be applied to the maximum medical subsidy, based on the non-Medicare Kaiser premium.*

Alternative actuarial models exist to project future medical trend assumptions and one of those is called the Getzen Model. To apply that model in studying the medical trend assumptions, there are some other hypothetical assumptions that need to be made (such as real per capita GDP growth, excess medical cost growth, and capacity constraints on health costs with respect to GDP) before that model can be applied.

Spouse/Domestic Partner Coverage	For all active and inactive members, 60% of male participants and 35% of female participants who receive a retiree health subsidy are assumed to be married or have a qualified domestic partner and elect dependent coverage. Of these covered spouses/domestic partners, 100% are assumed to continue coverage if the retiree predeceases the spouse/domestic partner. Male retirees are assumed to be 4 years older than their female spouses/domestic partners. Female retirees are assumed to be 2 years younger than their male spouses/domestic partners.
Participation	Retiree Medical and Dental Coverage Election: (see table below) [1]For deferred vested members, we assume an election percent of 50% of these rates.
Health Care Reform	In both the funding valuation and the GASB Statements No. 74 and 75 actuarial valuations for financial reporting purposes as of June 30, 2019, we included the impact of the projected excise tax on certain high cost medical plans ("Cadillac Tax") beginning in 2022 as prescribed by the Affordable Care Act (ACA) and related statutes. Subsequent to the June 30, 2019 valuations, the excise tax was repealed. The excise tax is no longer reflected beginning with the June 30, 2020 valuations for funding and financial reporting purposes.
Administrative Expenses	No administrative expenses were valued separately from the premium costs.
Plan Design	Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III.
Assumption Changes Since Prior Valuation	Starting premium costs and first year trends were updated to reflect 2021 calendar year premium data. Reflect updated trends to project future medical costs after 2020/2021. The excise tax on high costs health plans ("Cadillac Tax") was removed to reflect the recent repeal effective as of December 20, 2019. Economic and demographic assumptions have been updated based on the July 1, 2016 through June 30, 2019 Actuarial Experience Study.

Service Range (Years)	Percent Covered[1] (%)
10 – 14	60
15 – 19	80
20 – 24	90
25 and over	95

Exhibit III: Summary of Plan

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

Membership Eligibility:	
Tier 1 (§4.1002(a))	All employees who became members of the System before July 1, 2013, and certain employees who became members of the System on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees who became members of the System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016.
Tier 3 (§4.1080.2(a))	All employees who became members of the System on or after February 21, 2016, except as provided otherwise in Section 4.1080.2(b) of the Los Angeles Administrative Code.
Benefit Eligibility:	
Tier 1 (§4.1111(a)) and Tier 3 (§4.1126(a))	Retired age 55 or older with at least 10 years of service (including deferred vested members who terminate employment and receive a retirement benefit from LACERS), or if retirement date is between October 2, 1996, and September 30, 1999 at age 50 or older with at least 30 years of service. Benefits are also payable to spouses, domestic partners, or other qualified dependents while the retiree is alive. Please note that the health subsidy is not payable to a disabled retiree before the member reaches age 55.

Medical Subsidy for Members Not Subject to Cap:	
Under Age 65 or Over Age 65 Without Medicare Part A	
Tier 1 (§4.1111(d)) and Tier 3 (§4.1126(c))	The System will pay 4% of the maximum health subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum health subsidy. As of July 1, 2020, the maximum health subsidy is $1,790.80 per month, remaining unchanged in calendar year 2021. This amount includes coverage of dependent premium costs.
Over Age 65 and Enrolled in Both Medicare Parts A and B	
Tier 1 (§4.1111(e)) and Tier 3 (§4.1126(d))	For retirees, a maximum health subsidy shall be paid in the amount of the single-party monthly premium of the approved Medicare supplemental or coordinated plan in which the retiree is enrolled, subject to the following vesting schedule:

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

Subsidy Cap for Tier 1:	
(§4.1111(b))	As of the June 30, 2011 valuation, the retiree health benefits program was changed to cap the medical subsidy for non-retired members who do not contribute an additional 4.00% or 4.50% of employee contributions to the Pension Plan. The capped subsidy is different for Medicare and non-Medicare retirees. The cap applies to the medical subsidy limits at the 2011 calendar year level. The cap does not apply to the dental subsidy or the Medicare Part B premium reimbursement.
Dependents:	
Tier 1 (§4.1111(e)(4)) and Tier 3 (§4.1126(d)(4))	The System will pay 4% of the maximum dental subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum dental subsidy. As of July 1, 2020, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2021. There is no subsidy available to dental plan dependents or surviving spouses/domestic partners. There is also no reimbursement for dental plans not sponsored by the System.

Medicare Part B Reimbursement for Members:	
Tier 1 (§4.1113) and Tier 3 (§4.1128)	If a Retiree is covered by both Medicare Parts A and B, and enrolled in a LACERS' medical plan or participates in the LACERS Retiree Medical Premium Reimbursement Program, LACERS will reimburse the retiree the basic Medicare Part B premium.
Surviving Spouse Medical Subsidy:	
Tier 1 (§4.1115) and Tier 3 (§4.1129.1)	The surviving spouse or domestic partner will be entitled to a health subsidy based on the member's years of service and the surviving dependent's eligibility for Medicare.
Under Age 65 or Over Age 65 Without Medicare Part A	The maximum health subsidy available for survivors is the lowest cost plan available (currently Kaiser) single-party premium ($853.39 per month as of July 1, 2020, remaining unchanged in calendar year 2021).
Over Age 65 and Enrolled in Both Medicare Parts A and B	For survivors, a maximum health subsidy limited to the single-party monthly premium of the plan in which the survivor is enrolled, is provided subject to the following vesting schedule:

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

Changes in Plan Provisions:	None.

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

Exhibit IV: Definitions of Terms

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

Assumptions or Actuarial Assumptions	The estimates on which the cost of the Plan is calculated including: **Investment return** — the rate of investment yield that the Plan will earn over the long-term future; **Mortality rates** — the death rates of employees and pensioners; life expectancy is based on these rates; **Retirement rates** — the rate or probability of retirement at a given age; **Turnover rates** — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Actuarial Present Value of Total Projected Benefits (APB)	Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.
Normal Cost	The amount of contributions required to fund the benefit allocated to the current year of service.
Actuarial Accrued Liability for Actives	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Retirees	The single sum value of lifetime benefits to existing retirees. This sum takes account of life expectancies appropriate to the ages of the retirees and of the interest which the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Value of Assets (AVA)	The value of assets used by the actuary in the valution. These may be at market value or some other method used to smooth variations in market value from one valuation to the next.
Funded Ratio	The ratio AVA/AAL.
Unfunded Actuarial Accrued Liability (UAAL):	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Amortization of the Unfunded Actuarial Accrued Liability	Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.
Investment Return (discount rate)	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next. If the plan is funded on a pay-as-you-go basis, the discount rate is tied to the expected rate of return on day-to-day employer funds.

Covered Payroll	Annual reported salaries for all active participants on the valuation date.
ADC as a Percentage of Covered Payroll	The ratio of the actuarially determined contribution to covered payroll.
Health Care Cost Trend Rates	The annual rate of increase in net claims costs per individual benefiting from the Plan.
Actuarially Determined Contribution (ADC)	The ADC is equal to the sum of the normal cost and the amortization of the unfunded actuarial accrued liability.
Employer Contributions	An employer has contributed to an OPEB plan if the employer has (a) provided benefits directly to retired plan members or their beneficiaries, (b) paid insurance premiums to insure the payment of benefits, or (c) irrevocably transferred assets to a qualifying trust, or equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator

5661652v7/05806.003

Board Meeting: 11/10/2020
Item: VI-A
Attachment 4

Los Angeles City Employees' Retirement System

Governmental Accounting Standards Board Statement 67 (GAS 67) Actuarial Valuation

As of June 30, 2020

Segal

180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

November 3, 2020

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

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2020. It contains various information that will need to be disclosed in order to comply with GAS 67.

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

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

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

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

Sincerely,

Segal

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

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

Table of Contents

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board Statement 67 (GAS 67) as June 30, 2020. This valuation is based on:

- The benefit provisions of the Pension Plan, as administered by the Board of Administration;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2020, provided by LACERS;
- The assets of the Plan as of June 30, 2020, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. that the Board has adopted for the June 30, 2020 valuation.

General observations on GAS 67 actuarial valuation

1. The Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans still develop and adopt funding policies under current practices.
2. When measuring pension liability, GASB uses the same actuarial cost method (Entry Age) and the same type of discount rate (expected return on assets) as LACERS uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as LACERS' Actuarial Accrued Liability (AAL) measure for funding. We note that the same is true for the Normal Cost component of the annual plan cost for funding and financial reporting.
3. The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is the same as the Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The NPL reflects all investment gains and losses as of the measurement date. This is different from the UAAL calculated on an actuarial value of assets basis in the funding valuation that reflects investment gains and losses over a seven-year period.
4. The NPLs measured as of June 30, 2020 and 2019 have been determined from the actuarial valuations as of June 30, 2020 and June 30, 2019, respectively.

Highlights of the valuation

1. The NPL increased from $5.98 billion as of June 30, 2019 to $7.59 billion as of June 30, 2020 mainly due to (a) the return on the market value of retirement plan assets of 2.05%[1] during 2019/2020 that was less than the assumption of 7.25% used in the June 30, 2019 valuation (that loss was about $0.78 billion), (b) changes in the actuarial assumptions (that increase was about $0.53 billion), and (c) higher than expected salary increases for continuing active members (that loss was about $0.31 billion). Changes in these values during the last two fiscal years ending June 30, 2019 and June 30, 2020 can be found in *Section 2, Schedule of Changes in Net Pension Liability* on page 18.
2. The discount rates used to determine the TPLs and NPLs as of June 30, 2020 and 2019 were 7.00% and 7.25%, respectively, following the same assumption used by the System in the pension funding valuations as of the same dates. The detailed calculations used in the derivation of the discount rate of 7.00% used in the calculation of the TPL and NPL as of June 30, 2020 can be found in *Section 3, Appendix A*. Various other information that is required to be disclosed can be found throughout *Section 2*.
3. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have changed significantly during 2020. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the pandemic will continue to affect market conditions prior to next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

[1] Net of investment expenses only.

Summary of key valuation results[1]

Measurement Date		June 30, 2020	June 30, 2019
Disclosure elements:	• Service cost[2]	$374,967,243	$370,409,073
	• Total Pension Liability	22,527,195,295	20,793,421,143
	• Plan's Fiduciary Net Position	14,932,404,300	14,815,592,841
	• Net Pension Liability	7,594,790,995	5,977,828,302
Schedule of contributions:	• Actuarially determined contributions	$553,118,173	$478,716,953
	• Actual contributions	553,118,173	478,716,953
	• Contribution deficiency / (excess)	0	0
Demographic data:	• Number of retired members and beneficiaries	20,423	20,034
	• Number of inactive vested members[3]	9,207	8,588
	• Number of active members	27,490	26,632
Key assumptions:	• Investment rate of return	7.00%	7.25%
	• Inflation rate	2.75%	3.00%
	• Projected salary increases[4]	Ranges from 9.95% to 4.25%, based on years of service	Ranges from 10.00% to 3.90%, based on years of service

1 The assets and liabilities throughout this report are for the Retirement Plan only, and exclude amounts for the Health, Family Death Benefit and Larger Annuity Plans.

2 The service cost is based on the previous year's valuation, meaning the June 30, 2020 and 2019 measurement date values are based on the valuations as of June 30, 2019 and June 30, 2018, respectively. Both service costs have been calculated using the actuarial assumptions shown in the June 30, 2019 measurement date column, as there had been no changes in the actuarial assumptions between the June 30, 2018 and June 30, 2019 valuations.

3 Includes terminated members due a refund of employee contributions.

4 Includes inflation at 2.75% (3.00% for June 30, 2019 measurement date) plus real across the board salary increase of 0.50%, plus merit and promotion increases.

Important information about actuarial valuations

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

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

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	This valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses an “actuarial value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

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

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

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

Section 2: GAS 67 Information

General information about the pension plan

Plan Description

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

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

Plan membership. At June 30, 2020, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	20,423
Inactive vested members entitled to but not yet receiving benefits[1]	9,207
Active members	27,490
Total	57,120

1 Includes terminated members due a refund of employee contributions.

Benefits provided. LACERS provides service retirement, disability, death and survivor benefits to eligible retirees and beneficiaries. Employees of the City become members of LACERS on the first day of employment in a position with the City in which the employee is not excluded from membership. Members employed prior to July 1, 2013 are designated as Tier 1. All Tier 1 Airport Peace Officers (including certain fire fighters) appointed to their positions before January 7, 2018 who elected to remain at LACERS after January 6, 2018, and who paid their mandatory additional contribution of $5,700 to LACERS before January 8, 2019, or prior to their retirement date, whichever was earlier, are designated as Tier 1 Enhanced. Those employed on or after February 21, 2016 are designated as Tier 3 (unless a specific exception applies to the employee, providing a right to Tier 1 status).

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

Tier 1 and 3 members are eligible to retire for disability once they have 5 or more years of continuous service. Tier 1 Enhanced members are eligible to retire for service-connected disability without a service requirement, and once they have 5 or more years of continuous service for a nonservice-connected disability.

Under the Tier 1 formula, the monthly service retirement allowance at normal retirement age is 2.16% of final average monthly compensation per year of service credit. Under the Tier 1 Enhanced formula, the monthly service retirement allowance at normal retirement age is 2.30% of final average monthly compensation per year of service credit. Reduced retirement allowances are available for early retirement for Tier 1 and Tier 1 Enhanced members reaching age 55 with 10 or more years of continuous City service, or with 30 or more years of City service at any age. The Tier 1 and Tier 1 Enhanced early retirement reduction factors, for retirement below age 60, are as follows:

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

Section 2: GAS 67 Information

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

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

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

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

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

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

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

The City of Los Angeles contributes to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Administration. Employer contribution rates are adopted annually based upon recommendations received from LACERS' actuary after the completion of the annual actuarial valuation. The combined employer contribution rate as of June 30, 2020 was 24.36% of compensation.[2]

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

2 Based on the June 30, 2018 funding valuation which established funding requirements for fiscal year 2019/2020. The schedule of contributions in Section 2 of this report provides details on how this rate was calculated

Net Pension Liability

Measurement Date	June 30, 2020	June 30, 2019
Components of the Net Pension Liability		
Total Pension Liability	$22,527,195,295	$20,793,421,143
Plan's Fiduciary Net Position	-14,932,404,300	-14,815,592,841
Net Pension Liability	$7,594,790,995	$5,977,828,302
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	66.29%	71.25%

The NPL was measured as of June 30, 2020 and 2019. The Plan's Fiduciary Net Position was valued as of the measurement date, while the TPL was determined based upon the results of the actuarial valuations as of June 30, 2020 and 2019, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of June 30, 2020 and 2019 are the same as those used in the LACERS funding valuations as of June 30, 2020 and 2019, respectively.

Actuarial assumptions. The TPL as of June 30, 2020 was determined by an actuarial valuation as of June 30, 2020. The actuarial assumptions used in the June 30, 2020 valuation were based on the results of an experience study for the period from July 1, 2016 through June 30, 2019. They are the same as the assumptions used in the June 30, 2020 funding actuarial valuation for LACERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation:	2.75%
Salary increases:	Ranges from 9.95% to 4.25% based on years of service, including inflation
Investment rate of return:	7.00%, net of pension plan investment expense and including inflation
Other assumptions:	Same as those used in the June 30, 2020 actuarial valuation

Section 2: GAS 67 Information

The TPL as of June 30, 2019 was determined by an actuarial valuation as of June 30, 2019. The actuarial assumptions used in the June 30, 2019 valuation were based on the results of an experience study for the period from July 1, 2014 through June 30, 2017 and the June 30, 2017 review of economic actuarial assumptions. They are the same as the assumptions used in the June 30, 2019 funding actuarial valuation for LACERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation:	3.00%
Salary increases:	Ranges from 10.00% to 3.90% based on years of service, including inflation
Investment rate of return:	7.25%, net of pension plan investment expense and including inflation
Other assumptions:	Same as those used in the June 30, 2019 actuarial valuation

Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation but before deducting investment expenses, are summarized in the following table. These values were used in the derivation of the long-term expected investment rate of return assumption that was used in the actuarial valuation as of June 30, 2020. This information is subject to change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
Large Cap U.S. Equity	15.01%	5.54%
Small/Mid Cap U.S. Equity	3.99%	6.25%
Developed International Large Cap Equity	17.01%	6.61%
Developed International Small Cap Equity	2.97%	6.90%
Emerging International Large Cap Equity	5.67%	8.74%
Emerging International Small Cap Equity	1.35%	10.63%
Core Bonds	13.75%	1.19%
High Yield Bonds	2.00%	3.14%
Bank Loans	2.00%	3.70%
TIPS	4.00%	0.86%
Emerging Market Debt (External)	2.25%	3.55%
Emerging Market Debt (Local)	2.25%	4.75%
Core Real Estate	4.20%	4.60%
Non-Core Real Estate	2.80%	5.76%
Cash	1.00%	0.03%
Commodities	1.00%	3.33%
Private Equity	14.00%	8.97%
Private Credit/Debt	3.75%	6.00%
REITS	1.00%	5.98%
Total	**100.00%**	

Section 2: GAS 67 Information

Discount rate. The discount rate used to measure the TPL was 7.00% as of June 30, 2020 and 7.25% as of June 30, 2019. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employee and employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both June 30, 2020 and June 30, 2019.

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability of LACERS as of June 30, 2020, calculated using the discount rate of 7.00%, as well as what LACERS' Net Pension Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net Pension Liability as of June 30, 2020	$10,642,600,459	$7,594,790,995	$5,073,178,955

Schedule of changes in Net Pension Liability – Last two calendar years

Measurement Date	June 30, 2020	June 30, 2019
Total Pension Liability		
• Service cost[1]	$374,967,243	$370,409,073
• Interest	1,499,208,335	1,439,660,906
• Change of benefit terms	0	0
• Differences between expected and actual experience	308,183,796	-46,035,243
• Changes of assumptions	530,720,225	0
• Benefit payments, including refunds of member contributions	-979,305,447	-915,192,651
Net change in Total Pension Liability	**$1,733,774,152**	**$848,842,085**
Total Pension Liability – beginning	**20,793,421,143**	**19,944,579,058**
Total Pension Liability – ending	**$22,527,195,295**	**$20,793,421,143**
Plan's Fiduciary Net Position		
• Contributions – employer	$553,118,173	$478,716,953
• Contributions – member	259,816,657	237,087,419
• Net investment income	306,712,445	799,350,708
• Benefit payments, including refunds of member contributions	-979,305,447	-915,192,651
• Administrative expense	-23,530,369	-19,600,116
• Other	0	0
Net change in Plan's Fiduciary Net Position	**$116,811,459**	**$580,362,313**
Plan's Fiduciary Net Position – beginning	**14,815,592,841**	**14,235,230,528**
Plan's Fiduciary Net Position – ending	**$14,932,404,300**	**$14,815,592,841**
Net Pension Liability – ending	**$7,594,790,995**	**$5,977,828,302**
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	**66.29%**	**71.25%**
Covered payroll[2]	**$2,271,038,575**	**$2,108,171,088**
Net Pension Liability as percentage of covered payroll	**334.42%**	**283.56%**

1 The service cost is based on the previous year's valuation, meaning the June 30, 2020 and 2019 measurement date values are based on the valuations as of June 30, 2019 and June 30, 2018, respectively. Both service costs have been calculated using the actuarial assumptions shown in the June 30, 2019 column on page 6, as there had been no changes in the actuarial assumptions between the June 30, 2018 and June 30, 2019 valuations.

2 Covered payroll is defined as the payroll on which contributions to a pension plan are based.

Schedule of contributions – Last ten fiscal years

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll[1]	Contributions as a Percentage of Covered Payroll
2011	$303,560,953	$303,560,953	$0	$1,678,059,440	18.09%
2012	308,539,905	308,539,905	0	1,715,197,133	17.99%
2013	346,180,852	346,180,852	0	1,736,112,598	19.94%
2014	357,649,232	357,649,232	0	1,802,931,195	19.84%
2015	381,140,923	381,140,923	0	1,835,637,409	20.76%
2016	440,546,011	440,546,011	0	1,876,946,179	23.47%
2017	453,356,059	453,356,059	0	1,973,048,633	22.98%
2018	450,195,254	450,195,254	0	2,057,565,478	21.88%
2019	478,716,953	478,716,953	0	2,108,171,088	22.71%
2020	553,118,173	553,118,173	0	2,271,038,575	24.36%

[1] Covered payroll is defined as the payroll on which contributions to a pension plan are based.

See accompanying notes to this schedule on the next page.

Notes to Schedule:

Methods and assumptions used to establish "actuarially determined contribution" rates:

Valuation date:	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported
Actuarial cost method:	Entry Age Cost Method (individual basis)
Amortization method:	Level percent of payroll
Amortization period:	Multiple layers, closed amortization periods. Actuarial gains/losses are amortized over 15 years. Assumption or method changes are amortized over 20 years. Plan changes, including the 2009 ERIP, are amortized over 15 years. Future ERIPs will be amortized over 5 years. Actuarial surplus is amortized over 30 years. The existing layers on June 30, 2012, except those arising from the 2009 ERIP and the two (at that time) GASB 25/27 layers, were combined and amortized over 30 years.
Asset valuation method:	Market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.

Section 2: GAS 67 Information

Actuarial assumptions:

Valuation Date:	**June 30, 2020**
Investment rate of return:	7.00%
Inflation rate:	2.75%
Real across-the-board salary increase:	0.50%
Projected salary increases:[1]	Ranges from 9.95% to 4.25%, based on years of service
Cost of living adjustments:	2.75% for Tier 1; 2.00% for Tier 3. (Actual increases are contingent upon CPI increases with a 2.75% maximum for Tier 1 and a 2.00% maximum for Tier 3. For Tier 1 members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3% per year.)
Mortality:	Healthy: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 10% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.
Other assumptions:	Same as those used in the June 30, 2020 funding actuarial valuation

[1] Includes inflation at 2.75% plus across the board salary increases of 0.50% plus merit and promotion increases.

Appendix A: Projection of Plan's Fiduciary Net Position for use in the Calculation of Discount Rate as of June 30, 2020 ($ in millions)

Year Beginning July 1,	Projected Beginning Plan's Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan's Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2019	$14,816	$813	$979	$24	$307	$14,932
2020	14,932	925	1,141	24	1,032	15,725
2021	15,725	945	1,168	25	1,088	16,565
2022	16,565	965	1,236	26	1,144	17,412
2023	17,412	985	1,304	28	1,202	18,268
2024	18,268	961	1,370	29	1,258	19,089
2025	19,089	986	1,433	30	1,314	19,926
2026	19,926	1,007	1,501	32	1,371	20,771
2027	20,771	1,018	1,570	33	1,427	21,613
2046	30,722	166	2,592	49	2,054	30,301
2047	30,301	157 *	2,612	48	2,023	29,821
2048	29,821	148 *	2,630	47	1,989	29,281
2049	29,281	139 *	2,648	47	1,950	28,675
2050	28,675	129 *	2,664	46	1,907	28,001
2083	2,947	22 *	589	5	184	2,559
2084	2,559	20 *	529	4	159	2,205
2085	2,205	18 *	471	4	137	1,886
2086	1,886	17 *	417	3	116	1,598
2087	1,598	15 *	366	3	98	1,343
2103	23	1 *	9	0	1	16
2104	16	1 *	7	0	1	11
2105	11	1 *	5	0	1	8
2106	8	1 *	3	0	0	6
2107	6	1 *	2	0	0	4
2108	4	0 *,**	2	0	0	3
2109	3	0 *,**	1	0	0	2
2110	2	0 *,**	1	0	0	2
2111	2	0 *,**	1	0	0	1
2112	1	0 *,**	1	0	0	1
2113	1	0 *,**	0 **	0	0	0
2114	0	0 *,**	0 **	0	0	0
2115	0	0 *,**	0 **	0	0	0
2116	0	0 *,**	0 **	0	0	0
2117	0	0 *,**	0 **	0	0	0
2118	0	0 *,**	0 **	0	0	0

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

** Less than $1 million, when rounded.

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

Notes:

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

(2) Amounts shown for the year beginning July 1, 2019 row are actual amounts, based on the unaudited financial statements provided by LACERS.

(3) Years 2028-2045, 2051-2082, and 2088-2102 have been omitted from this table.

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

(5) Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2020); plus employer contributions to the unfunded actuarial accrued liability; plus contributions to fund each year's annual administrative expenses reflecting a 15-year amortization schedule. Contributions are assumed to occur halfway through the year, on average.

(6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2020. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2020 funding valuation report. Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 31.b.(1)(e) of GASB Statement No. 67, the long-term expected rate of return on Plan investments of 7.00% was applied to all periods of projected benefit payments to determine the discount rate.

(7) Column (d): Projected administrative expenses are calculated as approximately 0.16% of the projected beginning Plan's Fiduciary Net Position amount. The 0.16% portion was based on the actual fiscal year 2019 - 2020 administrative expenses as a percentage of the beginning Plan's Fiduciary Net Position amount as of July 1, 2019. Administrative expenses are assumed to occur halfway through the year, on average.

(8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.00% per annum.

(9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected 'cross-over date' when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2020 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

(10) This projection is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Appendix B: Definition of Terms

Definitions of certain terms as they are used in Statement 67. The terms may have different meanings in other contexts.

Actuarial Present Value of Projected Benefit Payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date:	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad Hoc Cost-of-Living Adjustments (Ad Hoc COLAs):	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad Hoc Postemployment Benefit Changes:	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Automatic Cost-of-Living Adjustments (Automatic COLAs):	Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Automatic Postemployment Benefit Changes:	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Cost-of-Living Adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Cost-Sharing Pension Plan):	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered Payroll:	Payroll on which contributions to the pension plan are based.
Defined Benefit Pension Plans:	Pension plans that are used to provide defined benefit pensions.

Defined Benefit Pensions:	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 67.)
Defined Contribution Pension Plans:	Pension plans that are used to provide defined contribution pensions.
Defined Contribution Pensions:	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount Rate:	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan's Fiduciary Net Position is projected (under the requirements of Statement 67) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
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 age(s). 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.
Inactive Employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Multiple-Employer Defined Benefit Pension Plan:	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net Pension Liability (NPL):	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.

Other Postemployment Benefits:	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension Plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan Members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment:	The period after employment.
Postemployment Benefit Changes:	Adjustments to the pension of an inactive employee.
Postemployment Healthcare Benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected Benefit Payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public Employee Retirement System:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real Rate of Return:	The rate of return on an investment after adjustment to eliminate inflation.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single-Employer Defined Benefit Pension Plan (Single-Employer Pension Plan):	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
Termination Benefits:	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
Total Pension Liability (TPL):	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 67.

Board Meeting: 11/10/2020
Item: VI-A
Attachment 5

Los Angeles City Employees' Retirement System

Governmental Accounting Standards (GAS) 74 Actuarial Valuation of Other Postemployment Benefits (OPEB)

As of June 30, 2020

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

Segal

180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

November 3, 2020

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

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 74 Actuarial Valuation as of June 30, 2020. It contains various information that will need to be disclosed in order to comply with GAS 74.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist LACERS in preparing items related to the other postemployment benefits (OPEB) plan in their financial report. The census and financial information on which our calculations were based was prepared by LACERS. That assistance is gratefully acknowledged.

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

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

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

Sincerely,

Segal

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

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

Table of Contents

Segal

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required for “Other Postemployment Benefits (OPEB)” plans by Statement No. 74 of the Governmental Accounting Standards Board as of June 30, 2020. This valuation is based on:

- The benefit provisions of the OPEB Plan, as administered by the Board of Administration;
- The characteristics of covered active members, inactive vested members, and retired members and surviving spouses as of June 30, 2020, provided by LACERS;
- The assets of the Plan as of June 30, 2020, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other (health and non-health) actuarial assumptions, regarding employee terminations, retirement, death, health care trend and enrollment, etc. that the Board has adopted for the June 30, 2020 valuation.

General Observations on GAS 74 Actuarial Valuation

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

4. The NOLs measured as of June 30, 2020 and 2019 have been determined from the actuarial valuations as of June 30, 2020 and June 30, 2019, respectively.

Highlights of the valuation

1. The NOL has increased from $522.2 million as of June 30, 2019 to $635.3 million as of June 30, 2020 mainly due to (a) an decrease of about $95.9 million from reflecting assumption changes based on the triennial experience study dated June 17, 2020 and (b) a loss of $145.9 million from the return on the market value of retiree health plan assets during 2019/2020 less than the assumption of 7.25% used in the June 30, 2019 valuation, offset to some degree by (d) favorable premium renewal experience of $144.3 million.
2. The discount rates used in the valuations for financial disclosure purposes as of June 30, 2020 and 2019 are the assumed investment returns on Plan assets (i.e. 7.00% and 7.25%, respectively, for the funding valuations as of the same dates). As contributions that are required to be made by the City to amortize the Unfunded Actuarial Accrued Liability in the funding valuation are determined on an actuarial basis, the future Actuarially Determined Contributions and current Plan assets, when projected in accordance with the method prescribed by GAS 74, are expected to be sufficient to make all benefit payments to current members.
3. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have varied significantly during 2020. The Plan’s funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the pandemic will continue to affect market conditions and other demographic experience of the Plan prior to next year’s valuation, Segal is available to prepare projections of potential outcomes upon request.

Summary of key valuation results

Measurement Date		June 30, 2020	June 30, 2019
Disclosure elements for plan year ending June 30:	• Service cost[1]	$76,422,769	$74,477,507
	• Total OPEB Liability	3,486,530,510	3,334,298,548
	• Plan Fiduciary Net Position	2,851,204,652	2,812,097,867
	• Net OPEB Liability	635,325,858	522,200,681
Schedule of contributions for plan year ending June 30:	• Actuarially determined contributions	$112,136,429	$107,926,949
	• Actual contributions	112,136,429	107,926,949
	• Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:	• Number of retired members and surviving spouses[2]	16,107	15,791
	• Number of vested terminated members	1,526	1,474
	• Retired members and surviving spouses entitled but not yet eligible for health benefits.	142	146
	• Number of active members	27,490	26,632
Key assumptions as of June 30:	• Discount rate	7.00%	7.25%
	• Health care premium trend rates		
	Non-Medicare medical plans	Actual premium increase in first year, then graded from 6.62% to ultimate 4.50% over 9 years	Actual premium increase in first year, then graded from 6.62% to ultimate 4.50% over 9 years
	Medicare medical plans	Actual premium increase in first year, then graded from 6.12% to ultimate 4.50% over 7 years	Actual premium increase in first year, then graded from 6.12% to ultimate 4.50% over 7 years
	Dental	4.00%	4.00%
	Medicare Part B	4.50%	4.50%

[1] The service cost is always based on the previous year's valuation, meaning the June 30, 2020 and 2019 values are based on the valuations as of June 30, 2019 and June 30, 2018, respectively. The key assumptions used in the June 30, 2018 valuation are as follows:

Discount rate	7.25%
Health care premium trend rates	
Non-Medicare medical plan*	Actual premium increase in first year, then graded from 6.87% to ultimate 4.50% over 10 years
Medicare medical plan*	Actual premium increase in first year, then graded from 6.37% to ultimate 4.50% over 8 years
Dental and Medicare Part B	4.00%

* The 2019-2020 trends are before reflecting additional estimated increases of 1.0% (non-Medicare) and 0.5% (Medicare) from the impact of the Health Insurance Tax (HIT).

[2] The total number of participants, including married dependents, receiving benefits is 21,572 as of June 30, 2020 and 21,115 as of June 30, 2019.

Important information about actuarial valuations

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

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

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan provisions.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by LACERS. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	This valuation is based on the market value of assets as of the measurement date, as provided by LACERS.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to health care trends and member enrollment in retiree health benefits. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

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

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

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

Section 2: GAS 74 Information

General information about the OPEB plan

Plan Description

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

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

Plan membership. At June 30, 2020, OPEB plan membership consisted of the following:

Retired members or surviving spouses currently receiving benefits[1]	16,107
Vested terminated members entitled to, but not yet receiving benefits	1,526
Retired members and surviving spouses entitled but not yet eligible for health benefits	142
Active members	27,490
Total	45,265

1 The total number of participants, including married dependents, receiving benefits is 21,572.

Section 2: GAS 74 Information

Benefits provided. LACERS provides benefits to eligible retirees and beneficiaries:

Membership Eligibility:	
Tier 1 (§4.1002(a))	All employees who became members of the System before July 1, 2013, and certain employees who became members of the System on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees who became members of the System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016.
Tier 3 (§4.1080.2(a))	All employees who became members of the System on or after February 21, 2016, except as provided otherwise in Section 4.1080.2(b) of the Los Angeles Administrative Code.
Benefit Eligibility:	
Tier 1 (§4.1111(a)) *and Tier 3 (§4.1126(a))*	Retired age 55 or older with at least 10 years of service (including deferred vested members who terminate employment and receive a retirement benefit from LACERS), or if retirement date is between October 2, 1996, and September 30, 1999 at age 50 or older with at least 30 years of service. Benefits are also payable to spouses, domestic partners, or other qualified dependents while the retiree is alive. Please note that the health subsidy is not payable to a disabled retiree before the member reaches age 55.
Medical Subsidy for Members Not Subject to Cap:	
Under Age 65 or Over Age 65 Without Medicare Part A	
Tier 1 (§4.1111(d)) *and Tier 3 (§4.1126(c))*	The System will pay 4% of the maximum health subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum health subsidy. As of July 1, 2020, the maximum health subsidy is $1,790.80 per month; remaining unchanged in calendar year 2021. This amount includes coverage of dependent premium costs

Over Age 65 and Enrolled in Both Medicare Parts A and B	
Tier 1 (§4.1111(e)) and Tier 3 (§4.1126(d))	For retirees, a maximum health subsidy shall be paid in the amount of the single-party monthly premium of the approved Medicare supplemental or coordinated plan in which the retiree is enrolled, subject to the following vesting schedule: **Completed Years of Service** / **Vested Percentage** 1-14 / 75% 15-19 / 90% 20+ / 100%
Subsidy Cap for Tier 1:	
(§4.1111(b))	As of the June 30, 2011 valuation, the retiree health benefits program was changed to cap the medical subsidy for non-retired members who do not contribute an additional 4% or 4.5% of employee contributions to the Pension Plan. The capped subsidy is different for Medicare and non-Medicare retirees. The cap applies to the medical subsidy limits at the 2011 calendar year level. The cap does not apply to the dental subsidy or the Medicare Part B premium reimbursement.
Dependents:	
Tier 1 (§4.1111(e)(4)) and Tier 3 (§4.1126(d)(4))	An additional amount is added for coverage of dependents which shall not exceed the amount provided to a retiree not enrolled in Medicare Parts A and B and covered by the same medical plan with the same years of service. The combined member and dependent subsidy shall not exceed the actual premium. This refers to dependents of retired members with Medicare Parts A and B. It does not apply to those without Medicare or Part B only.
Dental Subsidy for Members:	
Tier 1 (§4.1114(b)) and Tier 3 (§4.1129(b))	The System will pay 4% of the maximum dental subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum dental subsidy. As of July 1, 2020, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2021. There is no subsidy available to spouses or domestic partners or for dependent coverage. There is also no reimbursement for dental plans not sponsored by the System.
Medicare Part B Reimbursement for Members:	
Tier 1 (§4.1113) and Tier 3 (§4.1128)	If a Retiree is covered by both Medicare Parts A and B, and enrolled in a LACERS medical plan or participates in the LACERS Retiree Medical Premium Reimbursement Program, LACERS will reimburse the retiree the basic Medicare Part B premium.

Surviving Spouse Medical Subsidy:	
Tier 1 (§4.1115) and Tier 3 (§4.1129.1)	The surviving spouse or domestic partner will be entitled to a health subsidy based on the member's years of service and the surviving dependent's eligibility for Medicare.
Under Age 65 or Over Age 65 Without Medicare Part A	The maximum health subsidy available for survivors is the lowest cost plan available (currently Kaiser) single-party premium ($853.39 per month as of July 1, 2020; remaining unchanged in calendar year 2021).
Over Age 65 and Enrolled in Both Medicare Parts A and B	For survivors, a maximum health subsidy limited to the single-party monthly premium of the plan in which the survivor is enrolled, is provided subject to the following vesting schedule:

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

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

Net OPEB Liability

Measurement Date	June 30, 2020	June 30, 2019
Components of the Net OPEB Liability		
Total OPEB Liability	$3,486,530,510	$3,334,298,548
Plan Fiduciary Net Position	$2,851,204,652	$2,812,097,867
Net OPEB Liability	$635,325,858	$522,200,681
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	81.78%	84.34%

The NOL was measured as of June 30, 2020 and 2019. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date, while the TOL was determined based upon the results of the actuarial valuations as of June 30, 2020 and 2019, respectively.

Plan provisions. The plan provisions used in the measurement of the NOL as of June 30, 2020 and 2019 are the same as those used in the LACERS funding valuations as of June 30, 2020 and 2019, respectively.

Actuarial assumptions. The TOL as of June 30, 2020 was determined by an actuarial valuation as of June 30, 2020. The actuarial assumptions used in the June 30, 2020 valuation were based on the results of an experience study for the period from July 1, 2016 through June 30, 2019 dated June 17, 2020 and retiree health assumptions letter dated September 15, 2020. They are the same as the assumptions used in the June 30, 2020 funding actuarial valuation for LACERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	Ranges from 9.95% to 4.25% based on years of service, including inflation
Investment rate of return	7.00%, net of OPEB plan investment expense and including inflation
Other assumptions	Same as those used in the June 30, 2020 funding valuation

Section 2: GAS 74 Information

The TOL as of June 30, 2019 was determined by an actuarial valuation as of June 30, 2019. The actuarial assumptions used in the June 30, 2019 valuation were based on the results of an experience study for the period from July 1, 2014 through June 30, 2017, the June 30, 2017 review of economic actuarial assumptions and retiree health assumptions letter dated September 17, 2019. They are the same as the assumptions used in the June 30, 2019 funding actuarial valuation for LACERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	Ranges from 10.00% to 3.90% based on years of service, including inflation
Investment rate of return	7.25%, net of OPEB plan investment expense and including inflation
Other assumptions	Same as those used in the June 30, 2019 funding valuation

Determination of discount rate and investment rates of return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, are summarized in the following table. These values were used in the derivation of the long-term expected investment rate of return assumption that was used in the actuarial valuation as of June 30, 2020. This information is subject to change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
Large Cap U.S. Equity	15.01%	5.54%
Small/Mid Cap U.S. Equity	3.99%	6.25%
Developed International Large Cap Equity	17.01%	6.61%
Developed International Small Cap Equity	2.97%	6.90%
Emerging International Large Cap Equity	5.67%	8.74%
Emerging International Small Cap Equity	1.35%	10.63%
Core Bonds	13.75%	1.19%
High Yield Bonds	2.00%	3.14%
Bank Loans	2.00%	3.70%
TIPS	4.00%	0.86%
Emerging Market Debt (External)	2.25%	3.55%
Emerging Market Debt (Local)	2.25%	4.75%
Core Real Estate	4.20%	4.60%
Non-Core Real Estate	2.80%	5.76%
Cash	1.00%	0.03%
Commodities	1.00%	3.33%
Private Equity	14.00%	8.97%
Private Credit/Debt	3.75%	6.00%
REITS	1.00%	5.98%
Total	**100.00%**	

Section 2: GAS 74 Information

Discount rate: The discount rates used to measure the TOL were 7.00% as of June 30, 2020 and 7.25% as of June 30, 2019. The projection of cash flows used to determine the discount rate assumed employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries are not included. Based on those assumptions, the OPEB Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the TOL as of both June 30, 2020 and June 30, 2019.

Discount rate and trend sensitivity

Sensitivity of the Net OPEB Liability to changes in the discount rate. The following presents the Net OPEB Liability of LACERS as of June 30, 2020, calculated using the discount rate of 7.00%, as well as what LACERS' Net OPEB Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net OPEB Liability as of June 30, 2020	$1,137,842,031	$635,325,858	$225,113,382

Sensitivity of the Net OPEB Liability to changes in the healthcare cost trend rate. The following presents the Net OPEB Liability of LACERS as of June 30, 2020, calculated using the trend rate as well as what LACERS' Net OPEB Liability would be if it were calculated using a trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

	1% Decrease	Current Trend Rates[3]	1% Increase
Net OPEB Liability as of June 30, 2020	$187,138,639	$635,325,858	$1,195,159,497

[3] Current trend rates: Actual premium increase in first year then 6.62% graded down to 4.50% over 9 years for Non-Medicare medical plan costs and 6.12% graded down to 4.50% over 7 years for Medicare medical plan costs. 4.00% for all years for Dental and 4.50% for all years for Medicare Part B subsidy cost.

Schedule of changes in Net OPEB Liability – Last two fiscal years

Measurement Date	June 30, 2020	June 30, 2019
Total OPEB Liability		
• Service cost[4]	$76,422,769	$74,477,507
• Interest	242,665,810	236,677,675
• Change of benefit terms	0	0
• Differences between expected and actual experience	-135,719,690	-134,052,778
• Changes of assumptions	96,076,478	33,939,702
• Benefit payments	-127,213,405	-133,571,405
Net change in Total OPEB Liability	**$152,231,962**	**$77,470,701**
Total OPEB Liability – beginning	**3,334,298,548**	**3,256,827,847**
Total OPEB Liability – ending (a)	**$3,486,530,510**	**$3,334,298,548**
Plan Fiduciary Net Position		
• Contributions – employer	$112,136,429	$107,926,949
• Contributions – employee	0	0
• Net investment income	60,898,611	166,469,503
• Benefit payments	-127,213,405	-133,571,405
• Administrative expense	-6,714,850	-5,098,795
• Other	0	0
Net change in Plan Fiduciary Net Position	**$39,106,785**	**$135,726,252**
Plan Fiduciary Net Position – beginning	**2,812,097,867**	**2,676,371,615**
Plan Fiduciary Net Position – ending (b)	**$2,851,204,652**	**$2,812,097,867**
Net OPEB Liability – ending (a) – (b)	**$635,325,858**	**$522,200,681**
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	**81.78%**	**84.34%**
Covered payroll[5]	**$2,271,038,575**	**$2,108,171,088**
Plan Net OPEB Liability as percentage of covered payroll	**27.98%**	**24.77%**

4 The service cost is always based on the previous year's valuation, meaning the June 30, 2020 and 2019 values are based on the valuations as of June 30, 2019 and June 30, 2018, respectively.

5 Covered payroll is defined as the payroll on which contributions to an OPEB plan are based.

Schedule of contributions – Last ten fiscal years

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll[6]	Contributions as a Percentage of Covered Payroll
2011	$107,395,804	$107,395,804	$0	$1,678,059,440	6.40%
2012	115,208,835	115,208,835	0	1,715,197,133	6.72%
2013	72,916,729	72,916,729	0	1,736,112,598	4.20%
2014	97,840,554	97,840,554	0	1,802,931,195	5.43%
2015	100,466,945	100,466,945	0	1,835,637,409	5.47%
2016	105,983,112	105,983,112	0	1,876,946,179	5.65%
2017	97,457,455	97,457,455	0	1,973,048,633	4.94%
2018	100,909,010	100,909,010	0	2,057,565,478	4.90%
2019	107,926,949	107,926,949	0	2,108,171,088	5.12%
2020	112,136,429	112,136,429	0	2,271,038,575	4.94%

See accompanying notes to this schedule on the next page.

[6] Covered payroll is defined as the payroll on which contributions to an OPEB plan are based.

Section 2: GAS 74 Information

Notes to Schedule:

Methods and assumptions used to establish "actuarially determined contribution" (ADC) rates:

Valuation date:	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported
Actuarial cost method:	Entry Age Cost Method (level percent of payroll)
Amortization method:	Level percent of payroll
Remaining amortization period:	Multiple layers, closed amortization periods. The costs associated with the 2009 ERIP have been amortized over 15 years beginning with the June 30, 2009 valuation date. The unfunded actuarial accrued liability as of June 30, 2012 is amortized over a fixed period of 30 years beginning July 1, 2012. Assumption changes resulting from the triennial experience study will be amortized over 20 years. Health trend and premium assumption changes, plan changes, and gains and losses will be amortized over 15 years.
Asset valuation method:	Market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.
Actuarial assumptions:	
Valuation date:	June 30, 2020
Investment rate of return	7.00%
Inflation rate	2.75%
Real across-the-board salary increase	0.50%
Projected salary increases[7]	Ranges from 9.95% to 4.25%, based on years of service
Medical cost trend rates	
Non-Medicare medical plans	Actual premium increase in first year, then graded from 6.62% to ultimate 4.50% over 9 years
Medicare medical plans	Actual premium increase in first year, then graded from 6.12% to ultimate 4.50% over 7 years
Dental	4.00%
Medicare Part B	4.50%
Other assumptions:	Same as those used in the June 30, 2020 funding actuarial valuation.

[7] Includes inflation at 2.75% plus across the board salary increases of 0.50% plus merit and promotional increases

Section 3: Appendices

Appendix A: Definition of Terms

Definitions of certain terms as they are used in Statement 74. The terms may have different meanings in other contexts.

Actuarially Determined Contribution:	A target or recommended contribution to an OPEB plan for the reporting period based on the most recent measurement available.
Assumptions or Actuarial Assumptions:	The estimates on which the cost of the Plan is calculated including: a) Investment return — the rate of investment yield that the Plan will earn over the long-term future; b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; c) Retirement rates — the rate or probability of retirement at a given age; d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Covered Employee Payroll:	The payroll of the employees that are provided OPEB benefits.
Discount Rate:	The single rate of return, that when applied to all projected benefit payments results in an actuarial present value that is the sum of the following: 1) the actuarial present value of projected benefit payments projected to be funded by plan assets using a long term rate of return, and 2) the actuarial present value of projected benefit payments that are not included in (1) using a yield or index rate for 20 year tax exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
Entry Age Actuarial Cost Method:	An actuarial cost method where the present value of the projected benefits for an individual is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age.
Healthcare Cost Trend Rates:	The rate of change in per capita health costs over time.
Net OPEB Liability:	The Total OPEB Liability less the Plan Fiduciary Net Position.
Plan Fiduciary Net Position:	Market Value of Assets
Real Rate of Return:	The rate of return on an investment after removing inflation.
Service Cost:	The amount of contributions required to fund the benefit allocated to the current year of service.

Total OPEB Liability:	Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.
Valuation Date:	The date at which the actuarial valuation is performed.

5661127v8/05806.009

CHEIRON AUDIT
RECOMMENDATIONS IN REVIEW OF THE ACTUARIAL VALUATIONS

Cheiron Recommendations	Audit Report Page	Disposition of Recommendation
Cheiron commends Segal for including projections of the outstanding balance of the Unfunded Actuarial Liability (UAL) and UAL payment projections on pages 54-55 of the valuation report. However, they suggest that Segal also include projections of the employer contribution rate and funded status in their report to help the LACERS Board and stakeholders understand the dynamics of their actuarial policies and the impact of the new benefit tiers on the future costs of the system.	3	Based on Segal's experience with similar retirement systems and consistent with LACERS' past practice and direction, we have included projections of the employer contribution rate and funded status in a stand-alone Segal work product. Specifically, starting with the June 30, 2019 valuation, some of the sample information provided and cited in Cheiron's audit report has already been included in our Risk Report prepared for LACERS. Furthermore, based on our discussion with the Board when we presented the Risk Report, we are working with LACERS staff to determine what additional stress testing and/or stochastic modeling would be useful for inclusion in future Risk Reports. As for where and how such risk assessments should be made available to LACERS and its stakeholders, we do not agree with Cheiron's practice of including such extensive risk modeling in the basic actuarial valuation report. For a complex system such as LACERS with many stakeholders looking for different information about the Retirement and Health Plans, we find it more effective to present the funding valuation and the risk assessments in separate reports. The funding valuation determines current funded status and recommends contribution rate requirements based on a point-in-time measure of the assets and the liabilities. In contrast, Segal's Risk Report presents first a detailed review of past experience, followed by assessments and illustrations of potential future experience. Even though these more detailed risk assessments are a relatively new work product, we have already found having a separate report and a separate presentation has led to deeper and more focused discussions of risk than if this information was bundled with the regular actuarial valuation.
Segal excludes 54 deferred disabled members from their inactive member count of 1,474 at June 30, 2019 on page 17 of the OPEB valuation report. Deferred disableds do not receive a retiree health subsidy until age 55. The 54 are identified when they reconcile to the pension data on page 20 of the report. Segal assured us that they include their deferred benefit in the valuation. Cheiron suggests Segal consider whether the counts on page 17 should be adjusted in future reports to reflect these deferred members if they are being included in the valuation liabilities.	10	Segal has included the number of retired members and beneficiaries entitled but not yet eligible for health benefits in Summary of Key Valuation Results of its June 30, 2020 OPEB funding and GAS 74 valuations.
On page 20 of the OPEB valuation report, there are members for each valuation status that are "eligible for future health benefits" that are subtracted from the pension valuation counts to arrive at the health valuation counts. Cheiron recommends that Segal make a similar consideration as to whether these members should be included in the status counts if a liability is valued for these members.	10	Segal has included the number of retired members and beneficiaries entitled but not yet eligible for health benefits in Summary of Key Valuation Results of its June 30, 2020 OPEB funding and GAS 74 valuations.

CHEIRON AUDIT
RECOMMENDATIONS IN REVIEW OF THE ACTUARIAL VALUATIONS

Cheiron Recommendations	**Audit Report Page**	**Disposition of Recommendation**
There are several footnotes in the OPEB and GASB 74 report documenting that "other losses include the recognition for the first time of the liability for about 250 retirees receiving a premium reimbursement for health plans not sponsored by LACERS. Data for those retirees are not included in the regular retiree membership data as members receiving a medical subsidy from LACERS, and were provided separately for the first time for this valuation." Cheiron recommends Segal clarify whether this is specifically referring to the Medical Premium Reimbursement Program (MPRP), which does receive annual mention regarding Medicare Part B premium reimbursement.	11	Segal agrees it may be helpful to isolate the impact of first time updates in liability changes, and will consider doing so in the future.
Reference above. We also believe it would be helpful if Segal indicated how much of the Chart 2, row 8, $38,443,686 in other losses is attributable to this first time update.	11	Segal agrees it may be helpful to isolate the impact of first time updates in liability changes, and will consider doing so in the future.
Health Valuation Reports: In accordance with ASOP No. 6, the age and gender specific factors provided on page 35 of the OPEB report are used to adjust premiums to develop graded per-capita claim costs. It may be more appropriate to provide the resulting age banded and gender dollar costs by carrier and tier to illustrate the resulting per capita claim cost assumptions made on page 34, instead of providing the average of the calendar 2019 and 2020 premium rates and referring to those as per capita costs. Rather than as an assumption, the actual premium rates for both 2019 and 2020 could be provided elsewhere such as under Summary of Plan to document the source data used from the annual Health Benefits Guides. This would have no impact on the valuation cost results.	24	Segal has taken this suggestion under advisement.

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

REPORT TO BOARD OF ADMINISTRATION **MEETING: NOVEMBER 10, 2020**
From: Neil M. Guglielmo, General Manager **ITEM: VI – B**

SUBJECT: **MID-YEAR SUPPLEMENTAL BUDGET ADJUSTMENTS FOR FISCAL YEAR 2020-2021 AND POSSIBLE BOARD ACTION**

ACTION: ☒ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☐

Recommendation

That the Board:

1) Approve a Fiscal Year 2020-21 (FY21) supplemental budget of $1,188,812, inclusive of $1,114,314 for operational expenses related to the implementation of the City Separation Incentive Program (CSIP); and
2) Approve the reallocation of $85,000 in the contractual services account for enhanced functionality of the new Retirement Application Portal.

Executive Summary

On September 2, 2020, the City Council approved implementation of the City Separation Incentive Program ("CSIP") for 1,277 LACERS Members, currently revised at 1,381 Members, triggering the return to service of experienced former LACERS staff to assist with processing retirements, as well as necessitating the purchase of laptops, mobile phones, and software licenses for all temporary full-time staff to work remotely. This supplemental budget request for FY21 totals $1,188,812 -- broken down as $1,114,314 for CSIP implementation, and $74,499 for pandemic response expenses.

The full expense for loaned staff through June 2021, the expected duration of CSIP processing, is not yet known. Loaned staff are only approved for the calendar year 2020, however a request for extension in calendar year 2021 is in process. It should be noted that the "borrowed" staff costs are not net new expenditures to the City, but in fact the City is being directly reimbursed by LACERS for these salary costs. With a number of unknown factors it is possible another supplemental budget request may be needed when the list of loaned staff for next year is finalized or as other experience may dictate. We will continue to expend only the funds necessary for CSIP, and exercise prudence with all expenditures.

Discussion

The November retirement benefit payroll marks two key milestones for LACERS, the finalized processing of 334 retirements for the Los Angeles World Airports (LAWA) Separation Incentive Program (SIP), and the initial batch of 87 CSIP Members joining the list of retirees. An additional 230 CSIP retirees are receiving their retirement documents for December retirements. Each month thereafter, 230 retirements will be processed until the applicant list is completed. This milestone is accomplished because of the Board's support of the budget appropriation provided in July. Resources went toward providing the necessary infrastructure and equipment to migrate regular staff to permanent telecommuting status in order to make way for the buildout of workstations for temporary staff. In addition, an unprecedented scale of recruitment, interviewing, and hiring of 89 part-time and full-time staff was accomplished, with 27 additional positions in the recruitment phase. Additional support from the Mayor provided pre-approval for former LACERS staff to be temporarily loaned to LACERS effective upon approval of CSIP by City Council. Further, work is in progress to increase the options for digital services to our Members, including the development of the Retirement Application Portal.

Remaining cognizant of the City's economic challenge, our most significant contribution in this effort is to retire the CSIP applicants as expeditiously as possible. So while a supplemental budget request of $1,188,812 is significant, it is necessary in order to meet the critical timelines expected from the City to implement CSIP and the fiduciary obligation to our Members to work in their best interest to ensure a well counseled and accurate retirement benefit. The requested funds will be used as discussed below.

<u>CSIP Implementation Plan ($1,114,314)</u>

Knowledge and expertise in benefits counseling, calculations, and processing, makes current experienced employees, retired and active former LACERS employees, and employees from other pension systems invaluable to the CSIP effort. The CSIP staffing plan requests overtime primarily for benefit administration staff, maximizing our ability to use our most seasoned staff. Additionally, staffing assistance is provided from four retired LACERS employees authorized to work 120-days in the fiscal year, and 15 former LACERS employees transferred from their departments to assist LACERS through calendar 2020. The Los Angeles Fire and Police Pensions has also loaned two employees to LACERS until April 2021, under a separate agreement between the Plans.

Associated budget expenses for CSIP Implementation are:

- Reimbursement of $625,641 for salaries to respective City departments providing loaned staff in calendar year 2020
- Overtime of $204,057 for staff of the Retirement Services Division, Health Benefits Administration Division, and Human Resources Unit
- Part-time salaries for the Human Resources Unit of $23,600 to assist with support needed for an expanded staff population
- Technology to ensure all staff, including loaned staff, can work from home (laptops, phones, infrastructure, software licenses, headsets), totaling $196,616

- $64,400 in additional office expenses related to processing CSIP applications (additional copiers and related fees, printing, mail and incidental expenses)

Enhanced Retirement Application Portal ($0)

Migration to digital forms of service for Members is an on-going effort necessary in this new paradigm and encouraged by Mayoral Executive Directive #29, the "Contactless and People-Centered City Initiative." An expansion of the Retirement Application Portal is in development that will allow for Members to create accounts within the Box.com system, begin an application and save progress, then return for completion as their schedule fits. This additional scope will substantially enhance the incentive to complete the form digitally while increasing our response rate, as compared to the legacy paper system. The timeline for this addition is parallel pathed with the development of the Portal itself and will launch in tandem in December. Once launched however, the account creation framework will be able to be replicated across LACERS form offerings, unlocking an enhanced Member experience akin to the Retirement Application Portal.

The funding request reallocates $85,000 from savings in the contractual services account due to services not needed during the pandemic to fund the enhanced functionality in the Retirement Application Portal. There is no net budget increase.

COVID-Related Expenses ($74,499)

- Healthy Environment ($51,500)

This request includes funding for quarterly sanitizing services at the Times building as well as the purchase of several air purifier units throughout the office to provide a healthy environment for all occupants.

- Work From Home Tools and Support ($22,999)

There are a variety of expenses related to enabling a work from home environment. Overtime is sometimes needed for dedicated staff time to organize and customize new software tools to handle data in a structure that is logical to its team and users, as well as create usable visualizations of the information. Another necessary tool is a special software to be employed by the Systems team to maximize security when providing remote support assistance to telecommuters. Also, dedicated data plans on tablet computers are necessary to provide reliable connections when conducting video interviews and counseling. And lastly, new work set-ups require ergonomic consideration, and a small budget is set aside to address any ad-hoc equipment requests to support the health and safety of staff.

Pandemic and SIP Cost Reimbursement

While the pandemic is driving up LACERS' administrative costs, there is some relief being pursued.

As LAWA SIP nears completion, LACERS will prepare a bill to LAWA for expenses related to the LAWA SIP including employee overtime, part-time staff, and retired former LACERS employees. LAWA will provide direct reimbursement pursuant to our Memorandum of Agreement between the parties.

In an effort coordinated by the CAO's Office, LACERS has also prepared and submitted a total of four FEMA claims for reimbursement of COVID-related expenses covering the period 1/20/20 through 9/26/20. The total amount of labor costs submitted for reimbursement to date is $774,245.05, and non-labor expenses total $283,789.81. Any reimbursements received will be reported to the Board.

LACERS will fully reimburse the direct costs of salaries to the lending departments; therefore the City will not incur any new net expense this fiscal year for employees loaned to LACERS. All other costs associated with scaling up resources to process the CSIP will factor into future valuations to be recovered from the City.

Strategic Alignment

The Board's action on this item aligns with the Strategic Plan Goal to exercise responsible governance.

Fiscal Impact Statement

The Board's approval of this report will result in a direct fiscal impact to the Department Administrative Budget of $1,188,812. The administrative costs to administer CSIP will be combined with all administrative costs of the system and included in the actuarial valuation for the period ending June 30, 2021.

Prepared By: Dale Wong-Nguyen, Chief Benefits Analyst

NMG/TB/DWN

Attachment: Supplemental Budget Resolution dated November 10, 2020

SUPPLEMENTAL BUDGET
IMPLEMENTATION OF THE CITY'S SEPARATION INCENTIVE PROGRAM AND VARIOUS MID-YEAR ADJUSTMENTS

PROPOSED RESOLUTION

WHEREAS, LACERS recognizes the difficult financial situation of the City and the importance to the City of LACERS processing the City Separation Incentive Program "CSIP" retirement applications as expeditiously as possible;

WHEREAS, on September 2, 2020 the City Council approved moving forward on CSIP after eliminating the minimum participant threshold of 1,300 CSIP retirement applicants; thereby necessitating LACERS hire additional temporary staffing and equip staff with related computer hardware, software, and mobile phones to enable telecommuting as the City and State pandemic health prevention requirements are in place;

WHEREAS, other mid-year funding is needed to address expenses related to good pandemic health practices; various work from home tools;

WHEREAS, pursuant to the City Charter the Board has full control of LACERS budget,

NOW, THEREFORE, BE IT RESOLVED, that the Board

1. Approve a Supplemental Appropriation of $1,188,813, to Fund 800, LACERS Administrative Budget, as indicated in the following schedule;
2. Approve the reallocation of $85,000 from various surpluses within the contractual services account to fund enhancements to the Retirement Application Portal; and
3. Authorize the General Manager to correct any clerical or typographical errors in this document.

FISCAL YEAR 2020-21 – SUPPLEMENTAL BUDGET APPROPRIATION FOR IMPLEMENTATION OF THE CITY SEPARATION INCENTIVE PROGRAM AND VARIOUS MID-YEAR ADJUSTMENTS

LACERS FUND 800

		Supplemental Budget Appropriation 2020-21
SALARIES		
General	$	625,641
As Needed		23,600
Overtime		205,257
Total Salaries	$	854,498
EXPENSE		
Printing and Binding	$	10,000
Contractual Services		14,090
Office and Administrative		228,824
Total Expense	$	252,914
EQUIPMENT		
Furniture, Office and Technical Equipment	$	81,400
Total Equipment	$	81,400
Total Administrative Expense	**$**	**1,188,812**

November 10, 2020

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

REPORT TO BOARD OF ADMINISTRATION | **MEETING: NOVEMBER 10, 2020**
From: Neil M. Guglielmo, General Manager | **ITEM: VI – C**

SUBJECT: **APPROVAL OF LACERS REDESIGNED LOGO AND POSSIBLE BOARD ACTION**

ACTION: ☒ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☐

Recommendation

That the Board approve one of the redesigned LACERS logos as represented in the attachment for use across all LACERS' assets.

Discussion

On October 13, 2020, the redesigned LACERS logo was presented to the Board for feedback and potential adoption. Within that meeting, feedback was offered prompting two additional variations of the logo to be completed and resubmitted for review.

A total of four logo variations (three new and one original) are now being presented for discussion and adoption. In addition to the original logo design presented on October 13th, three additional variations are provided that incorporate edits to font and color selection, as suggested by the Board.

Following discussion, one of the four logo variants selected will be incorporated across LACERS' properties.

Prepared By: Vikram Jadhav, Director of Innovation

NG:TB:VJ

Attachments: 1. LACERS Logo Variants
2. LACERS Logo Redesign Report to the Board dated October 13, 2020

BOARD Meeting: 11/10/20
Item VI – C
Attachment 1

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

REPORT TO BOARD OF ADMINISTRATION **MEETING: OCTOBER 13, 2020**
From: Neil M. Guglielmo, General Manager **ITEM: IX – C**

SUBJECT: **LACERS LOGO REDESIGN AND POSSIBLE BOARD ACTION**

ACTION: ☒ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☐

Recommendation

That the Board approve the redesigned LACERS logo as represented in the attachment for use across all LACERS' assets.

Discussion

In late 2019, a working group of LACERS' staff engaged an external graphic designer to reimagine and design a logo that would serve the purposes of:

- Modernizing the LACERS' brand
- Capturing the vision and mission of LACERS
- Signaling the larger transformation of LACERS' operations

The logo redesign process began with design sessions between the designer and the Logo Redesign Committee, which included operational staff, senior managers, and the Executive team. Through a series of design sessions and design iterations, a new logo and brand identity was drafted that received near unanimous support from the Committee.

The new proposed LACERS logo is displayed in the attachment to this report for the Board's review.

Prepared By: Vikram Jadhav, Director of Innovation

NG:TB:VJ

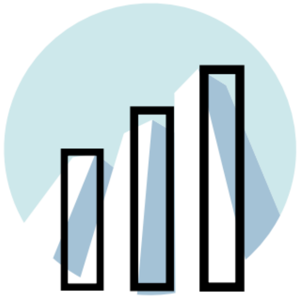
Attachments: 1. LACERS Logo Presentation Material

BOARD Meeting: 10/13/20
ITEM IX - C
Attachment 1

LACERS

SKYLINE

The buildings in this imagined skyline reference Downtown L.A. The dynamic perspective emphasizes the scale and stability of the structures, evoking a sense of security and trust.



BAR GRAPH

The facades of the skyscrapers double as a rising bar graph to represent how LACERS' investments work to grow the Plan Assets and increase the financial stability of its Members.

SUMMIT

The skyline/graph can also be read as an abstracted mountain summit. This distant peak symbolizes Members' goals and aspirations, and how LACERS can help to achieve their ambitions.

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

LACERS WELL

LACERS

SECONDARY LOGOS

In most cases, the primary LACERS logo should be used for both print and digital applications. However, certain situations may necessitate the use of a secondary version of the logo.

A. Horizontal I

B. Horizontal II

C. Dark Background (Color)

D. Grayscale

E. Black & White

F. Dark Background (White)

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

A.

LACERS

B.

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

C.

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

D.

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

E.

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

F.


LACERS


LACERS


LACERS
LA CITY EMPLOYEES' RETIREMENT SYSTEM


Facebook
Instagram
Twitter
Google+
LACERS
Tumblr
LinkedIn
WhatsApp
Messenger

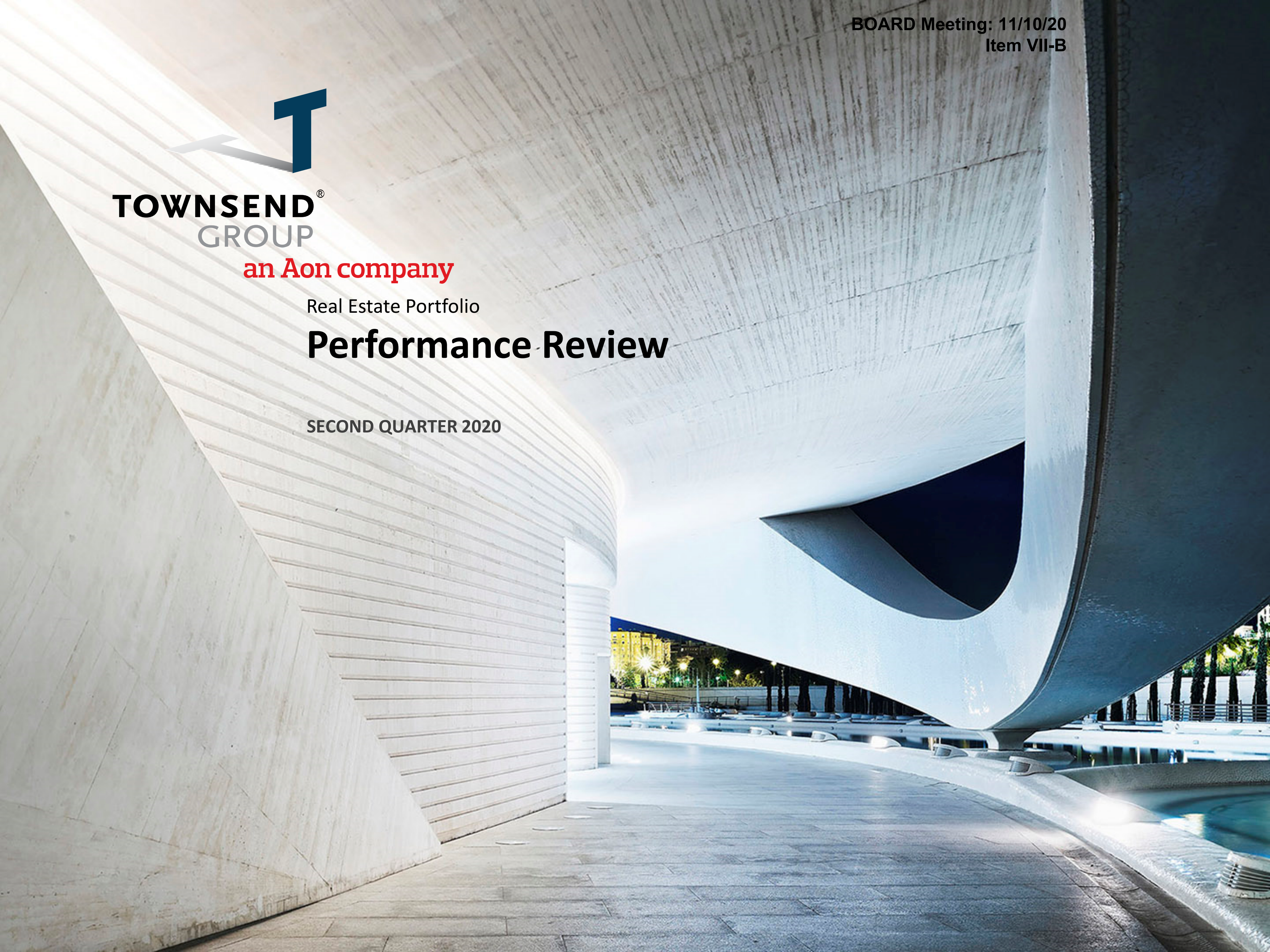

LACERS
LA CITY EMPLOYEES'
RETIREMENT SYSTEM

TOWNSEND® GROUP
an Aon company

Real Estate Portfolio

Performance Review

SECOND QUARTER 2020



Portfolio Funding Status

TOWNSEND® GROUP
an Aon company

- The following slides provide a review of key information pertaining to the Los Angeles City Employees' Retirement System ("LACERS") Real Estate Portfolio (the "Portfolio") through June 30, 2020. A detailed performance report is also provided as **Exhibit A.**
- The System is below its 7.0% target to Real Estate as of year-end on a funded and committed basis. The target allocation was increased from 5.0% in April 2018.

	Market Value ($ millions)*	% LACERS Plan*
LACERS Total Plan Assets	17,689	
Real Estate Target	1,238	7.0%
RE Market Value:		
Core	578	
Non-Core	152	
Timber	19	
Total RE Market Value	750	4.2%
Unfunded Commitments	157	0.9%
RE Market Value & Unfunded Commitments	906	5.1%
Remaining Allocation	332	1.9%

*Figures may not add due to rounding.

TOWNSEND® GROUP
an Aon company

Real Estate Portfolio Composition

	Strategic Targets		*Portfolio Composition (06/30/2020)**	
	Target Allocation	**Tactical Range**	**Market Value**	**Market Value & Unfunded Commitments**
Core	**60%**	**40% - 80%**	**77.1%**	**63.8%**
Non-Core	**40%**	**20% - 60%**	**20.3%**	**34.1%**
Value Add Portfolio	*N/A*	*N/A*	*10.7%*	*22.0%*
Opportunistic Portfolio	*N/A*	*N/A*	*9.6%*	*12.1%*
Timber	**N/A**	**N/A**	**2.5%**	**2.1%**

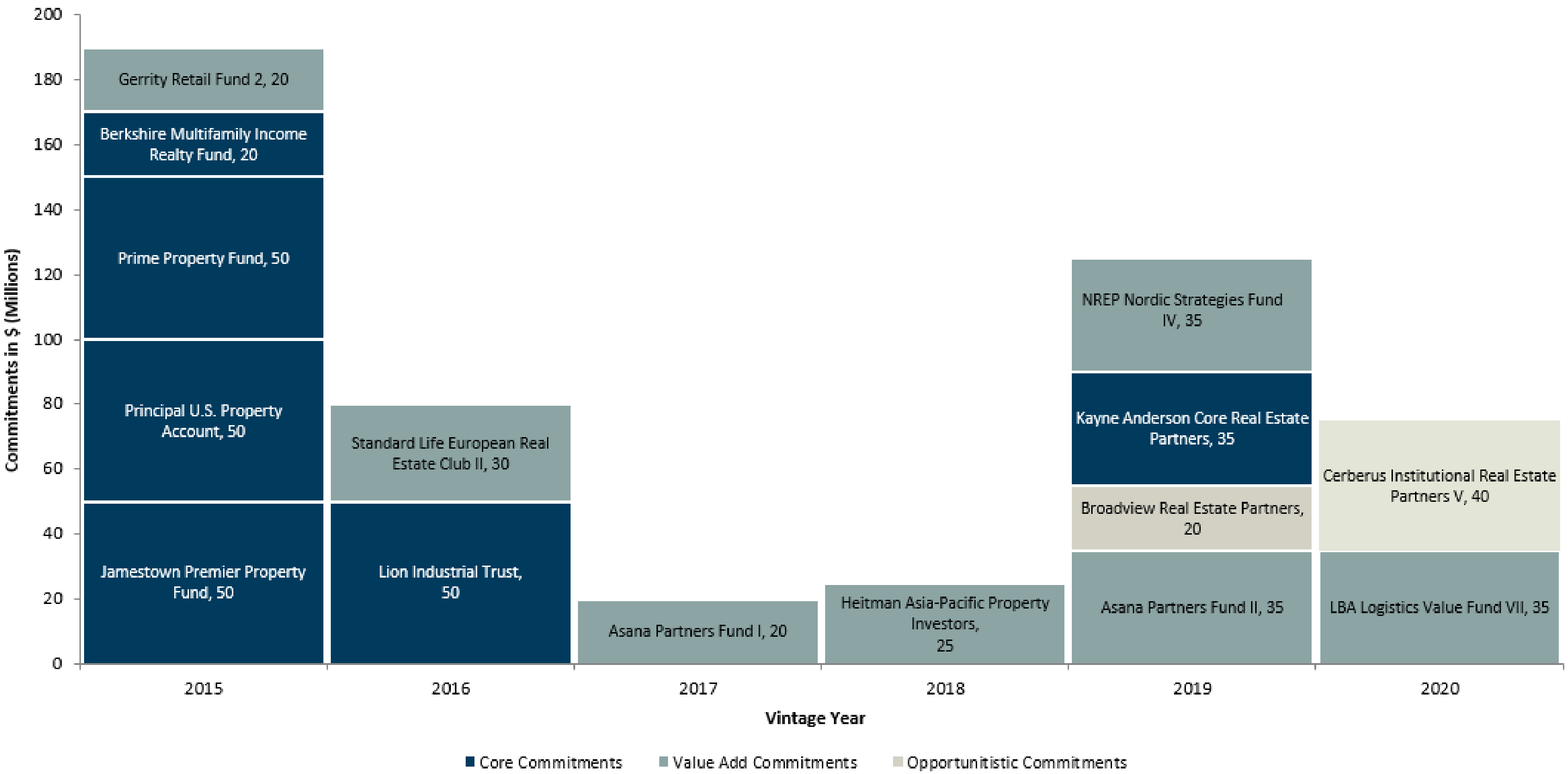
- In May 2014, the Board approved the strategic targets displayed above in order to reflect a more conservative risk profile going-forward. At the time, the Portfolio had 30% exposure to Core and 70% exposure to Non-Core.
- Since 2015, in an effort to transition the Portfolio, the LACERS Board has approved $255 million in Core commitments, which have all been fully funded to date, with the exception of Kayne Anderson Core Real Estate Fund.
- The LACERS Board approved approximately $260 million in Non-Core investments** since 2015. These investments focused on Value Add strategies with pre-specified portfolios, embedded value and/or an element of current income.
- On a funded and committed basis, the LACERS Core and Non-Core allocations are near strategic targets, but moderately below the Non-Core target.
- The Core Portfolio utilizes 27.3% leverage, measured on a loan-to-value (LTV) basis, well below the 40.0% constraint.
- The Non-Core Portfolio has a 51.3% LTV ratio, well below the 75.0% constraint.

*Figures may not add due to rounding.

** Includes commitments made subsequent to 6/30/2020 (Cerberus Institutional Real Estate Partners V).

TOWNSEND® GROUP
an Aon company

LACERS Commitment Activity Under Townsend Advisory – Last Five Years

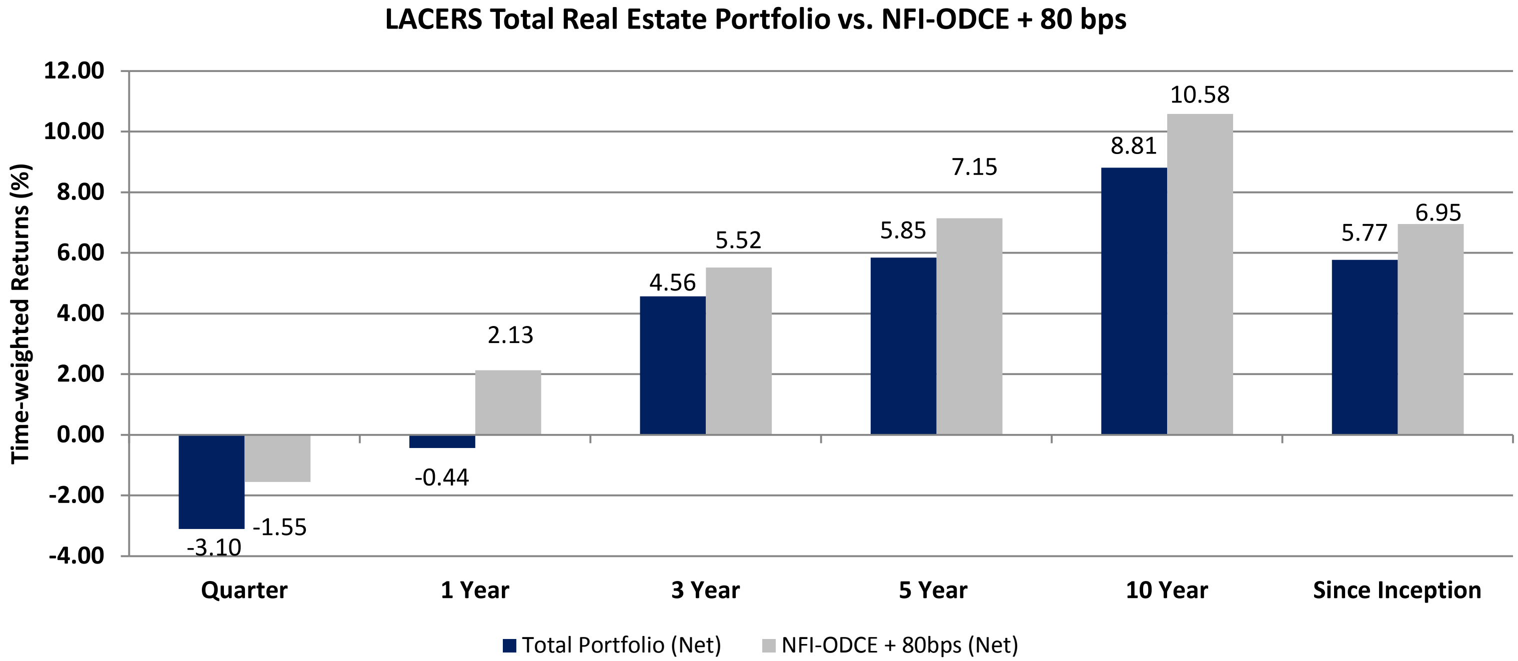


- LACERS has committed $515 million* since 2015, all of which has been Townsend-initiated activity.
- Three Non-Core commitments since 2015 (Gerrity, Asana and Broadview) met LACERS' Emerging Manager guidelines.
  - In the Core Open-End Commingled Fund (OECF) space, there are currently no managers meeting these guidelines.
- Vintage year classifications are based on LACERS' first capital call (or expected capital call), though commitments may have been approved in prior years.

*Inclusive of all commitments approved by LACERS' Board. Cerberus Insitutional Real Estate Partners V approved subsequent to quarter-end.

Total Portfolio Performance

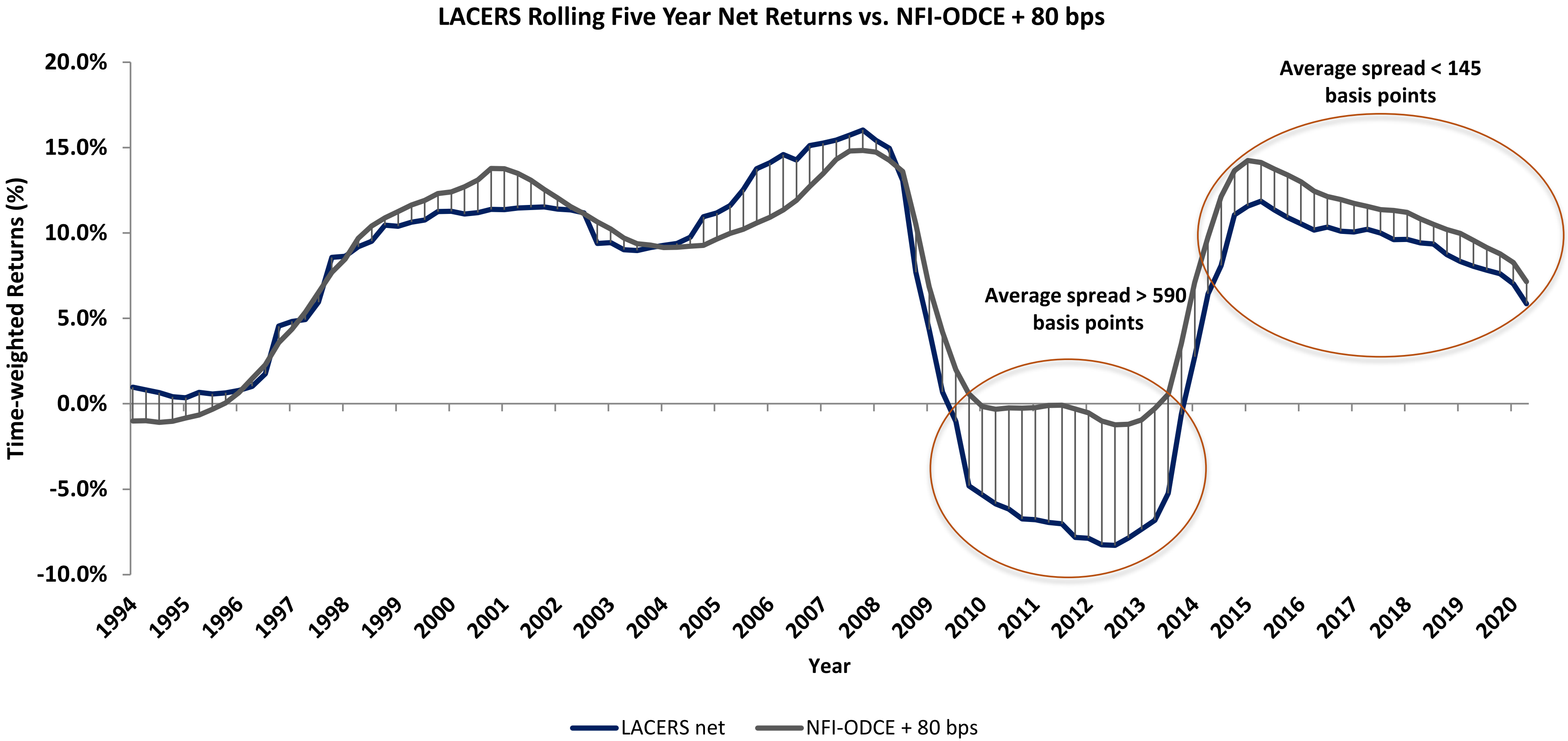
TOWNSEND® GROUP
an Aon company



- The benchmark for the LACERS Total Real Estate Portfolio is the NCREIF Fund Index of Open-End Diversified Core Equity funds (NFI-ODCE) + 80 basis points ("bps"), measured over 5-year time periods, net of fees (defined below). LACERS has underperformed over all periods, mostly due to weak performance of Non-Core legacy funds. However, investments made since 2014 are outperforming the benchmark over the quarter, three and five-year periods, as detailed on page 7.
- The NFI-ODCE is a Core index that includes Core open-end diversified funds with at least 95% of their investments in US markets. The NFI-ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical (back to 1978) and current basis (25 active vehicles), utilizing approximately 22.3% leverage.
  - The 80 basis point ("bps") premium is a reflection of the incremental return expected from Non-Core exposure in the Portfolio, which is not included in the NFI-ODCE.

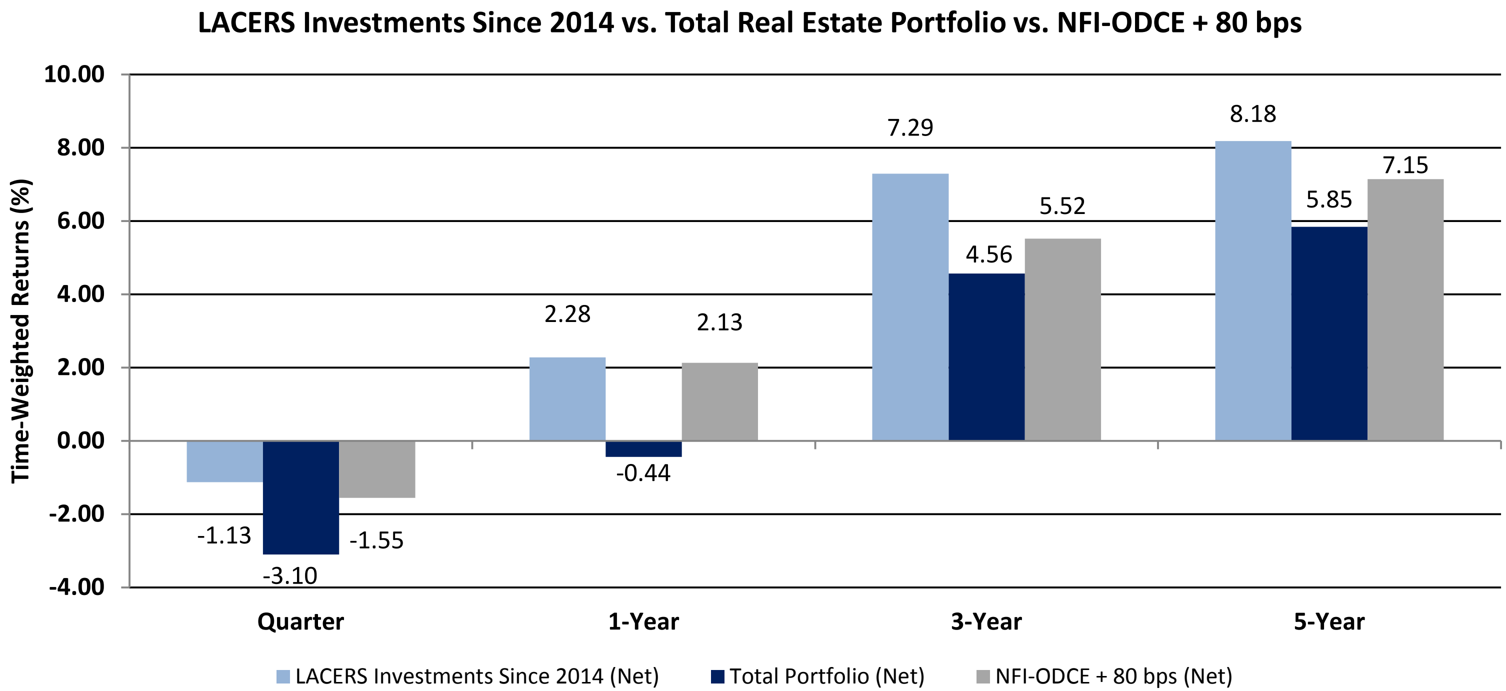
TOWNSEND® GROUP
an Aon company

Improving Relative Total Portfolio Performance



- The chart above displays rolling 5-year time-weighted returns for the Total LACERS Portfolio, net of fees, relative to the benchmark.
- While LACERS continues to underperform the benchmark on a rolling 5-year basis, LACERS' average spread to the benchmark is trending downwards. Performance should continue to improve as accretive investments approved since 2014 continue to fund into the Portfolio and legacy investments fully liquidate.

Post-GFC Investments Accretive to Performance

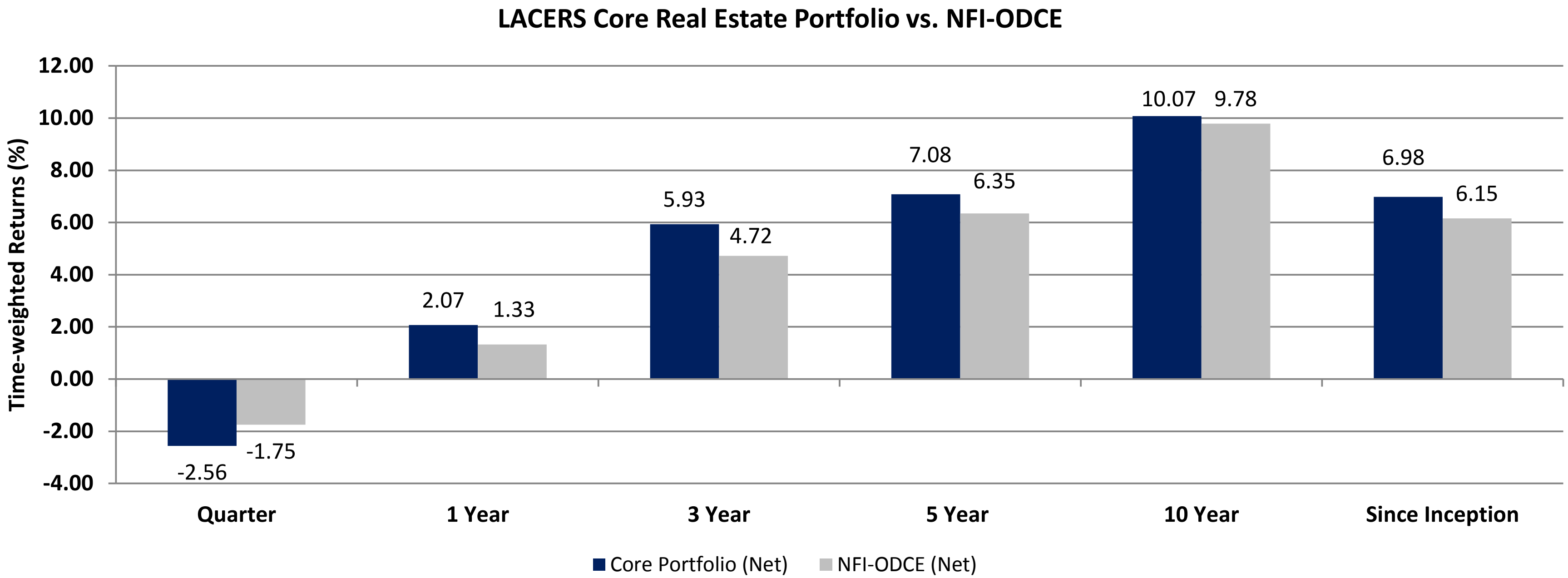


- Since 2014, Townsend has recommended seventeen* investments to LACERS staff and fifteen (including three emerging managers) ultimately were approved by the Board. The first of these investments to call capital was Jamestown Premier Property Fund in 3Q15. Core investments include Berkshire, Jamestown, Lion Industrial Trust, Prime, Principal, and Kayne Anderson Core. Non-Core investments include Gerrity, Standard Life, Asana I and Asana II, Heitman Asia, Broadview Real Estate Partners, NREP, LBA and Cerberus.
- Performance of Townsend-advised investments since 2014 exceeds performance of the Total Portfolio and the benchmark over all periods. These investments are expected to drive performance going forward.

*Includes commitments made subsequent to 6/30/2020 (Cerberus Institutional Real Estate Partners V).

TOWNSEND® GROUP
an Aon company

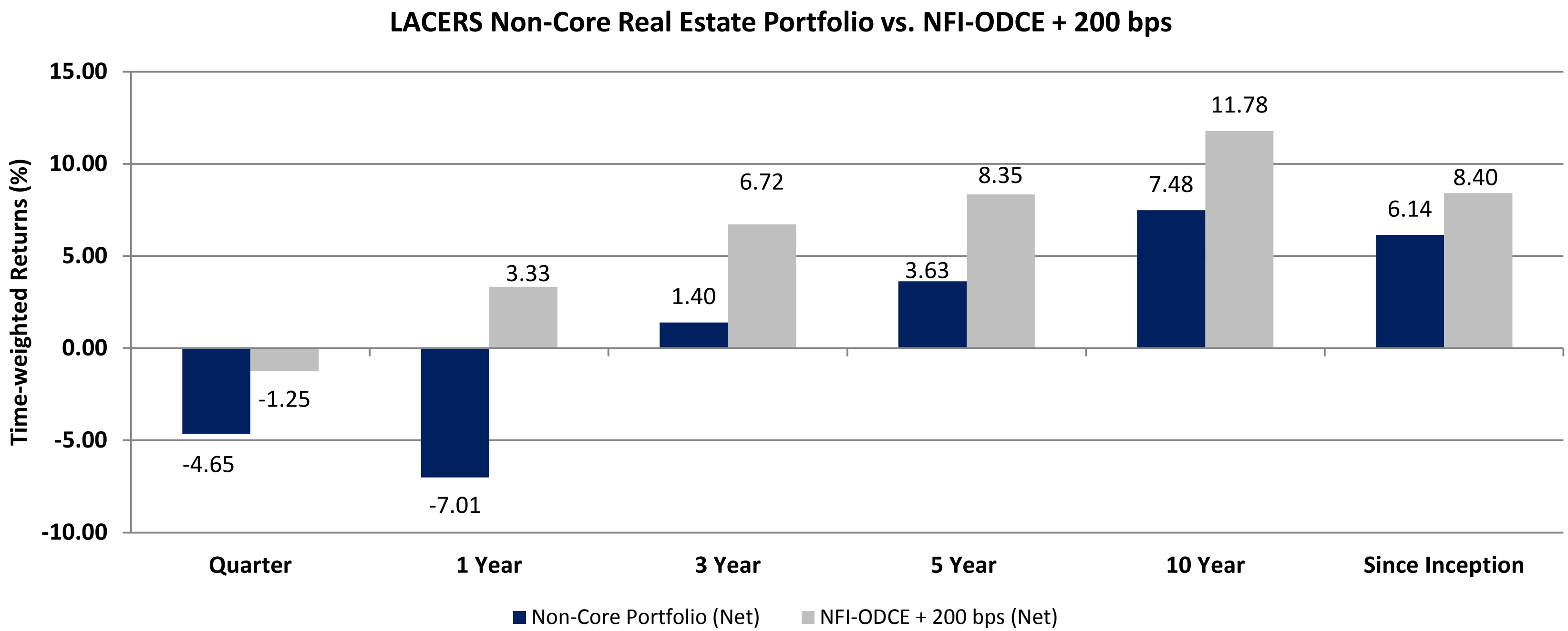
Relative Performance by Strategy: Core



- The LACERS Core benchmark is the NFI-ODCE, measured over 5-year time periods, net of fees.
- The Core Portfolio has outperformed the benchmark over all periods except for the most recent quarter.
- On an absolute return and dollar-weighted basis Lion Industrial Trust was the largest positive contributor to Core performance over the quarter, outperforming the NFI-ODCE by 346 bps.
- Invesco Core Real Estate and CIM VI were the weakest performers, underperforming the NFI-ODCE by 277 bps and 353 bps, respectively.
- Over the trailing year, outperformance on an absolute basis was driven by the strong returns of Lion Industrial Trust and Kayne Anderson Core Real Estate Fund, which outperformed the benchmark by 986 bps and 226 bps, respectively.
- Over the quarter, 8 out of 9 active investments experienced negative returns. Funds with weaker performance tended to have higher allocations to hard-hit asset types such as non-grocery anchored retail.

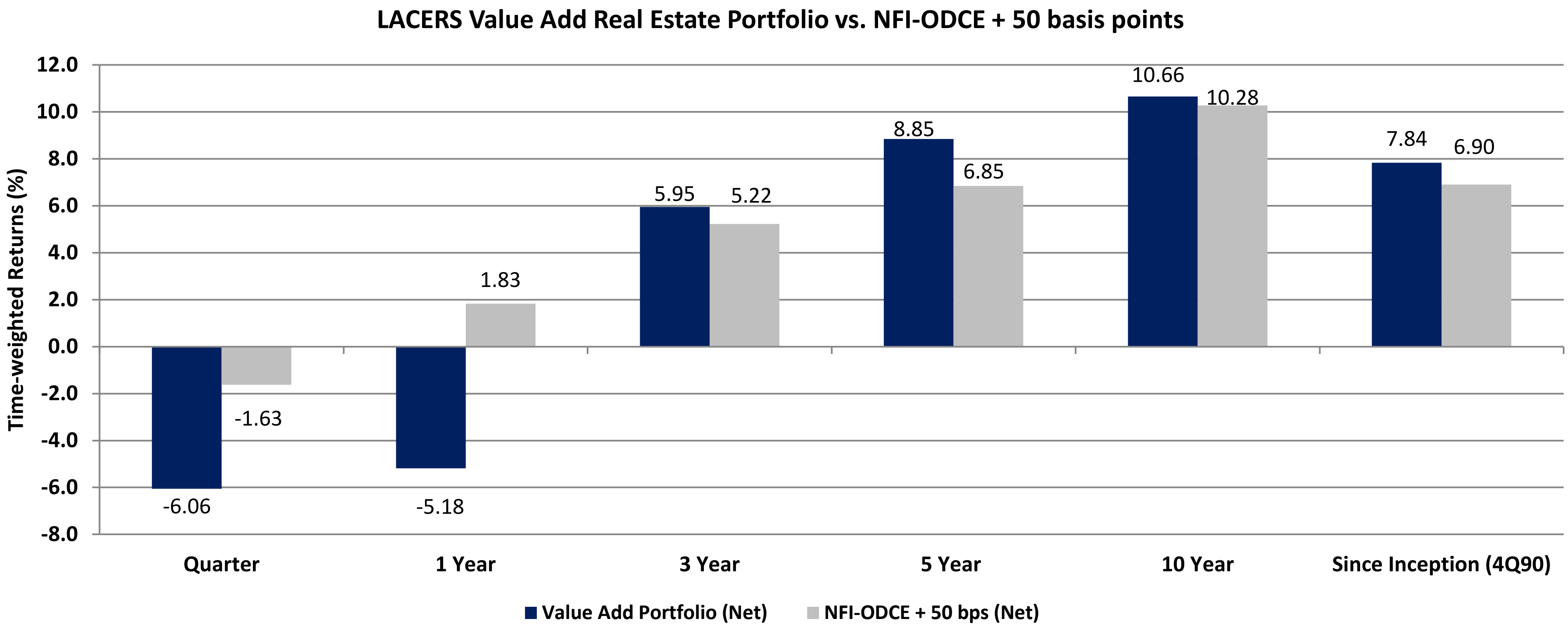
Relative Performance by Strategy: Non-Core

TOWNSEND GROUP
an Aon company



- The LACERS Non-Core benchmark is the NFI-ODCE + 200 bps, measured over 5-year time periods, net of fees. The 200 bps premium is a reflection of the incremental return expected from the additional risk inherent in Non-Core strategies.
- The Non-Core Portfolio underperformed the NFI-ODCE + 200 bps benchmark over all time periods. Underperformance over longer time periods is mostly due to Non-Core legacy funds that are due to liquidate over the next few years. There are currently 9 Non-Core funds in the portfolio that were committed to before the Global Financial Crisis. As these funds liquidate and approved investments are funded, Non-Core portfolio performance is expected to improve.
- The Value Add Portfolio has achieved strong absolute and relative annualized returns over all periods expect the quarterly and one-year periods, while the Opportunistic Portfolio has been the main reason for Non-Core underperformance. Both are discussed in more detail on the following pages.
- Recent negative performance has been largely driven by the effects of COVID-19, which has weakened capital markets and real estate fundamentals, especially for non-core markets.
- During periods of distress, non-core funds generally contract in value quicker than NFI-ODCE funds. As a result, performance relative to LACERS' NFI-ODCE based benchmark will show greater divergence. Over longer periods, this divergence will decrease.

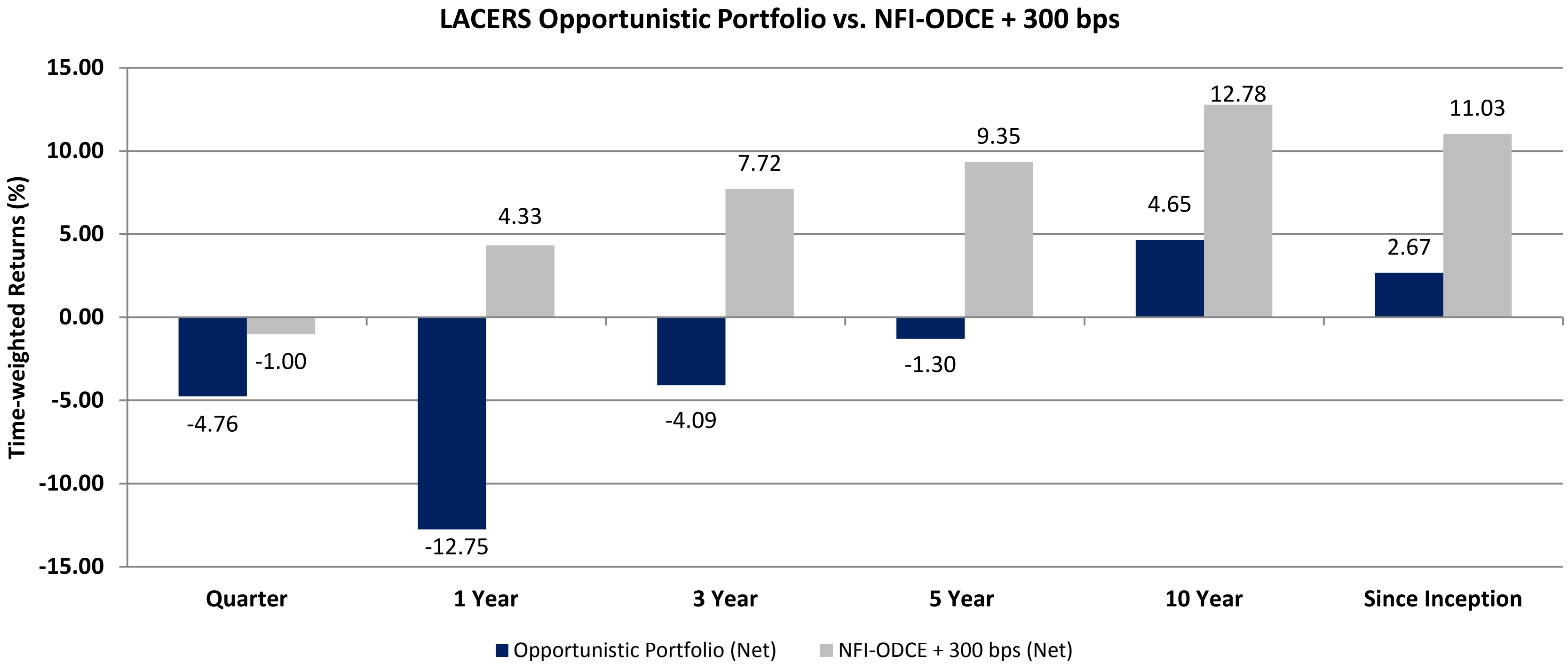
Relative Performance by Strategy: Non-Core — Value Add



- The LACERS Value Add benchmark is the NFI-ODCE + 50 bps, measured over 5-year time periods, net of fees. The 50 bps premium is a reflection of the incremental return expected from additional risk inherent in Value Add strategies
- The Value Add Portfolio outperformed the NFI-ODCE + 50 bps benchmark over all periods except for the recent quarter and the one-year period.
  - Underperformance over the quarter was driven by COVID-19 effects. The worst-hit holding was DRA Growth & Income Fund VIII– a fund that was nearly 50% allocated to retail assets prior to the pandemic – which delivered a -22.5% net quarterly return. This is a product of the substantial negative effects to retail caused by shelter-in-place orders within the United States.
- Heitman Asia-Pacific Property Investors, which outperformed its benchmark by 1552 bps over the quarter, was the strongest driver of performance on a dollar-return and absolute return basis. This is largely a product of quicker recovery from COVID-19 in Asian markets.
- Over the trailing year, one (DRA Growth & Income VII) of seven active Value Add investments outperformed the benchmark.
  - Some non-core funds took markdowns to their portfolio in 1Q20 when assets were valued internally. ODCE, as an externally appraised benchmark, tends to adjust values more slowly. As a result, ODCE valuations generally lag those od non-core funds.

Relative Performance by Strategy: Non-Core — Opportunistic

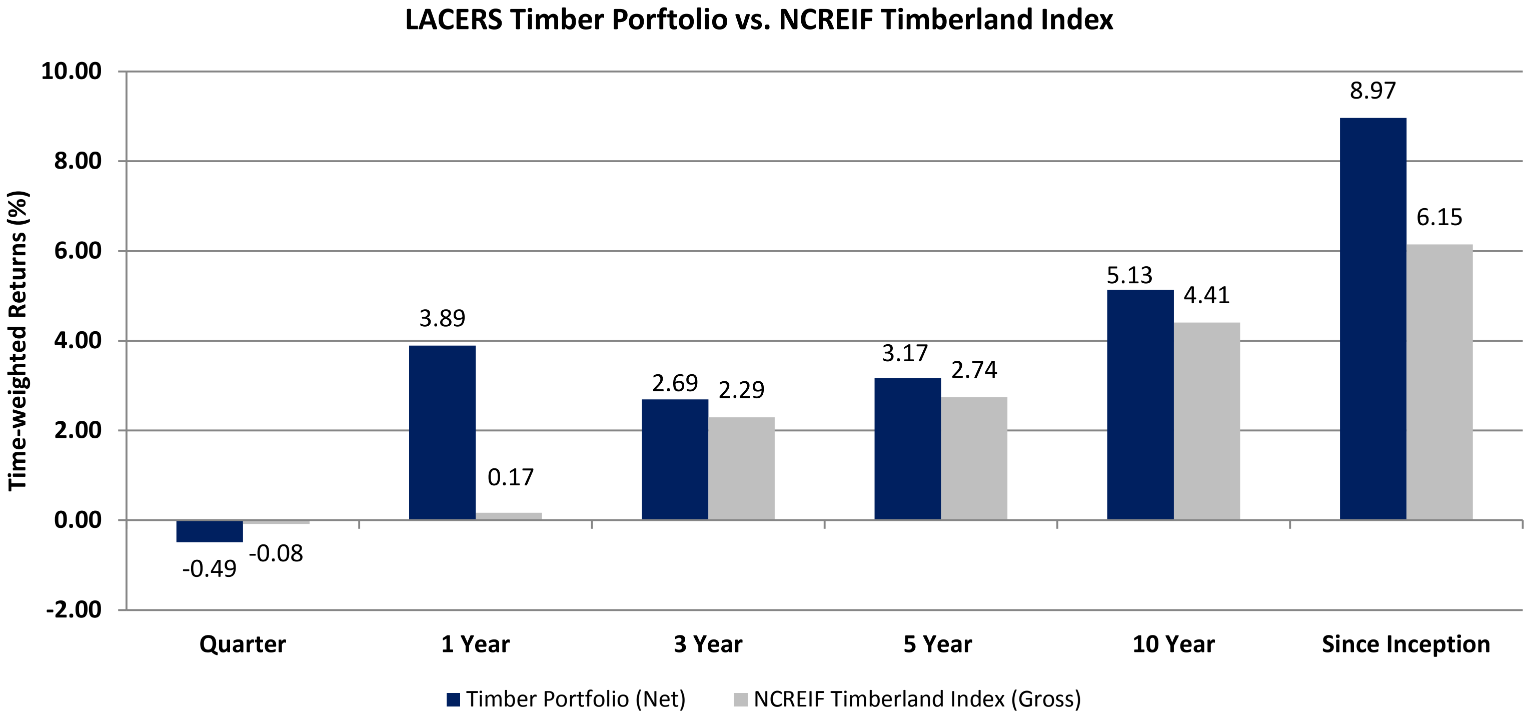
TOWNSEND GROUP
an Aon company



- The LACERS Opportunistic benchmark is the NFI-ODCE + 300 bps, measured over 5-year time periods, net of fees. The 300 bps premium is a reflection of the incremental return expected from additional risk inherent in Opportunistic strategies.
- The Opportunistic Portfolio underperformed the NFI-ODCE + 300 bps benchmark across all time periods. Underperformance over long time periods is mostly due to legacy funds that are due to liquidate over the next few years.
  - Similar to the Value Add portfolio, COVID-19 significantly impacted the returns of Opportunistic funds, which generally have higher leverage, vacancy, and operating risks.
- There are currently 9 active Opportunistic funds in the portfolio that were committed to before the Global Financial Crisis. As these funds liquidate and approved investments are funded, Opportunistic portfolio performance is expected to improve.
- The only active outperforming Opportunistic funds over the trailing year were Bryanston Retail Opportunity Fund and California Smart Growth Fund IV, delivering 4787 bps and 1123 bps of alpha, respectively.

TOWNSEND® GROUP
an Aon company

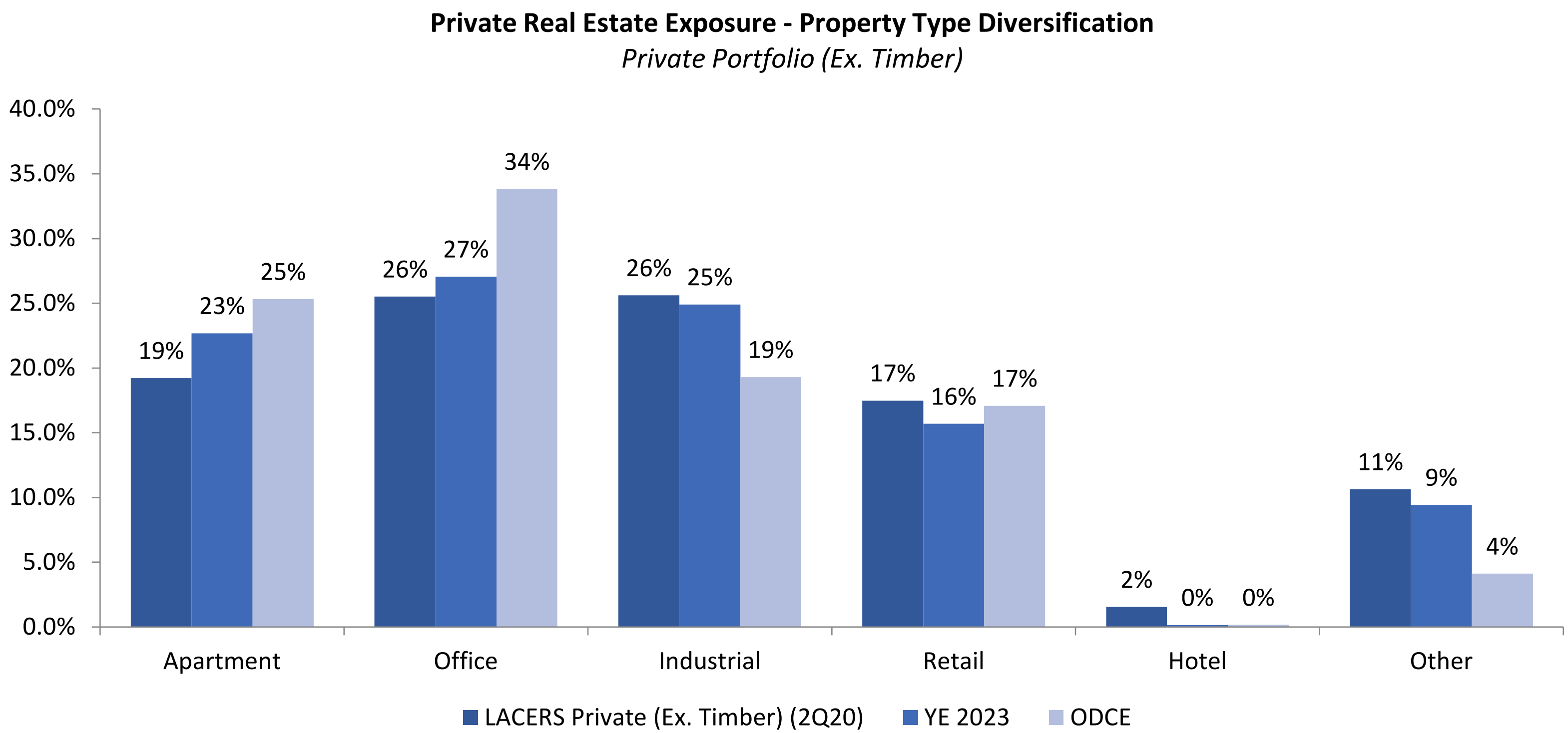
Relative Performance by Strategy: Timber



- The Timber Portfolio, net of fees, outperformed or matched its benchmark, the NCREIF Timberland Index, gross of fees, over all periods except for the recent quarter.
- Outperformance over the long-term is mostly related to strong performance of Hancock ForesTree V, which was fully liquidated by year-end 2015.
- The LACERS active timberland investment is Hancock Timberland IX. The Fund's assets are located in the United States (85%, split between the South and the Northwest) and Chile (15%). The Southern region was the strongest performing region in the NCREIF Timberland Index over the quarter.
- Income returns for timber investments tend to be infrequent and are realized through harvest. To date, there has been no meaningful income from the fund due to limited harvest activity during a period of lower timber prices. This has impacted total returns.
- Further, all assets in Hancock Timberland IX are appraised at year-end, which is why appreciation usually remains relatively flat from the first quarter through the third quarter of each year. The effect of year-end appraisals is demonstrated in the annualized returns.

TOWNSEND® GROUP
an Aon company

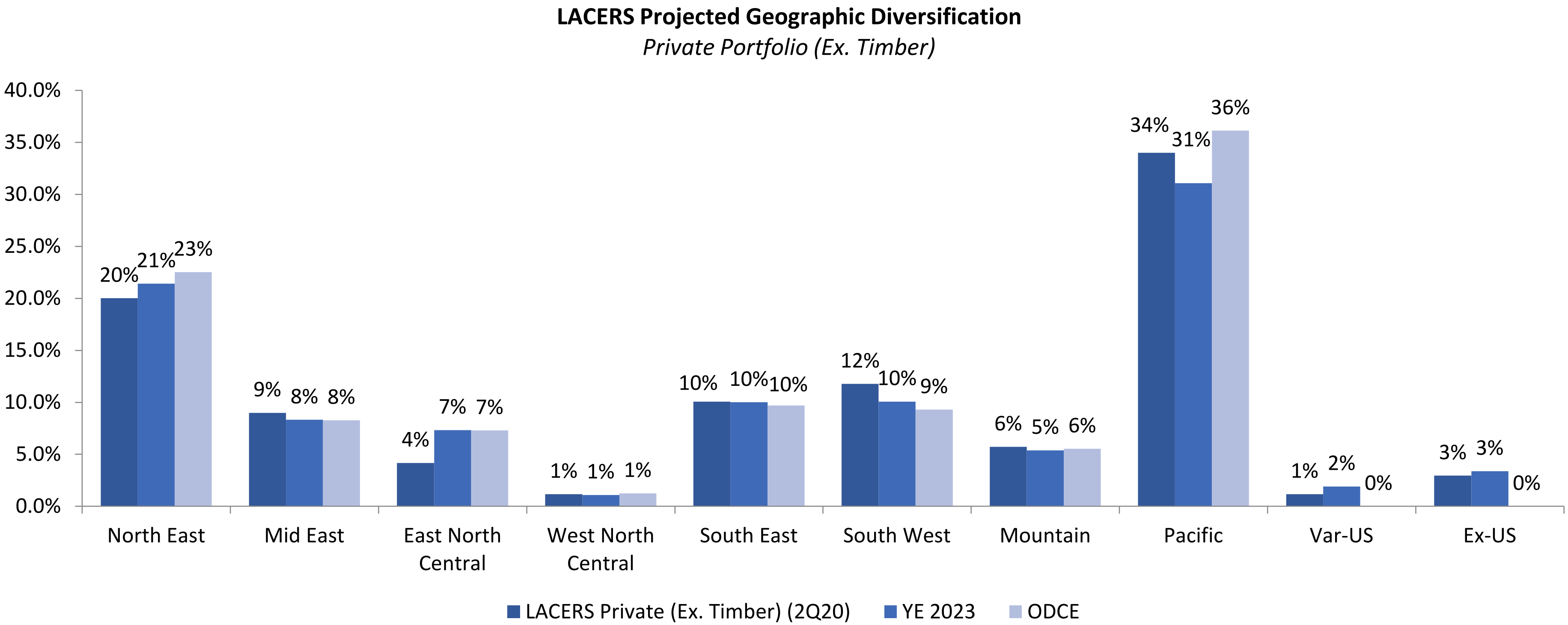
Real Estate Portfolio Diversification



- The diversification of the Private Portfolio is measured against the diversification of the NFI-ODCE ± 10.0% with up to 20.0% of the Portfolio allowed in “Other”. Currently, the “Other” category includes investments in alternative property types including Self Storage, Student Housing, Senior Housing, For Sale Residential, and Land.
- Among the “Other” property types, LACERS’ portfolio has the greatest exposure to Medical Office (2.67%), Self-Storage (1.74%), Senior Housing (1.41%), Land (0.70%), Student Housing (0.36%), and Healthcare (0.33%).

TOWNSEND® GROUP
an Aon company

Real Estate Portfolio Diversification



- The diversification goal of the Private Portfolio is to be well diversified across the US. The only constraint is a 30.0% maximum allocation to Ex-US investments. NFI-ODCE diversification is provided as a benchmark.
- The Portfolio currently has an aggregate exposure to the Los Angeles metropolitan area of 7.6% as of 1Q20, with a 4.1% exposure to Los Angeles City. The NFI-ODCE's exposure to the Los Angeles metropolitan area is 9.6%**.
- The 2.9% Ex-US exposure is composed primarily of two large regional exposures: Asia (2.5%), Europe (0.4%).

**Collected by Townsend bi-annually, as of 1Q20. Based on % NAV.

Exhibit A: Performance Flash Report

TOWNSEND GROUP an Aon company

Portfolio Composition ($)								
Total Plan Assets	Allocation		Market Value		Unfunded Commitments		Remaining Allocation	
17,688,591,960	1,238,201,437	7.0%	749,601,747	4.2%	156,887,023	0.9%	333,211,230	1.9%

ance Summary	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)	
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
LACERS	-2.9	-3.1	0.7	-0.4	5.9	4.6	7.2	5.8
NFI-ODCE + 80 basis points	-1.4	-1.6	3.0	2.1	6.5	5.5	8.1	7.1

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Core Portfolio	**1989**	**413,867,553**	**484,675,554**	**0**	**181,923,847**	**578,122,494**	**77.1**	**63.8**
Non-Core Portfolio	**1990**	**773,977,156**	**670,732,980**	**156,887,023**	**609,327,106**	**152,440,831**	**20.3**	**34.1**
Value Added Portfolio	1990	298,969,813	178,486,562	119,136,872	162,085,473	80,315,745	10.7	22.0
Opportunistic Portfolio	1996	475,007,343	492,246,414	37,750,151	447,241,633	72,125,084	9.6	12.1
Timber Portfolio	**1999**	**20,000,000**	**18,601,851**	**0**	**4,342,968**	**19,038,422**	**2.5**	**2.1**
Total Current Portfolio								
LACERS	**1989**	**1,207,844,709**	**1,174,010,385**	**156,887,023**	**795,593,921**	**749,601,747**	**100.0**	**100.0**

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Core								
Berkshire Multifamily Income Realty Fund	2015	20,000,000	20,000,000	0	7,359,365	19,808,430	2.6	2.2
CIM Commercial Trust Corporation (“CMCT”)	2014	40,000,000	46,417,723	0	55,823,168	-3,993	0.0	0.0
CIM VI (Urban REIT), LLC	2012	25,000,000	25,000,000	0	5,859,445	30,578,267	4.1	3.4
INVESCO Core Real Estate	2004	63,867,553	124,315,123	0	65,613,121	183,625,278	24.5	20.3
Jamestown Premier Property Fund	2015	50,000,000	51,155,037	0	25,685,521	37,259,470	5.0	4.1
JP Morgan Strategic Property Fund	2005	30,000,000	30,421,882	0	2,858,499	70,553,292	9.4	7.8
Kayne Anderson Core Real Estate Fund	2019	35,000,000	35,000,000	0	968,437	34,515,199	4.6	3.8
Lion Industrial Trust - 2007	2016	50,000,000	52,365,789	0	8,385,460	78,701,400	10.5	8.7
Prime Property Fund	2015	50,000,000	50,000,000	0	9,370,830	56,018,316	7.5	6.2
Principal U.S. Property Account	2015	50,000,000	50,000,000	0	0	67,066,834	8.9	7.4
Core	**1989**	**413,867,553**	**484,675,554**	**0**	**181,923,846**	**578,122,493**	**77.1**	**63.8**
Timber								
Hancock Timberland XI	2012	20,000,000	18,601,851	0	4,342,968	19,038,422	2.5	2.1
Timber	**1999**	**20,000,000**	**18,601,851**	**0**	**4,342,968**	**19,038,422**	**2.5**	**2.1**
Value Added								
Almanac Realty Securities VI	2012	25,000,000	15,475,571	0	17,062,272	3,167,231	0.4	0.3
Asana Partners Fund I	2017	20,000,000	16,864,629	3,452,220	681,663	21,291,527	2.8	2.7
Asana Partners Fund II	2019	35,000,000	5,818,750	29,181,250	0	4,095,499	0.5	3.7
DRA Growth and Income Fund VII	2011	25,000,000	26,640,000	0	53,966,666	4,137,475	0.6	0.5
DRA Growth and Income Fund VIII	2014	25,000,000	29,576,071	518,519	21,911,212	13,636,301	1.8	1.6
Gerrity Retail Fund 2	2015	20,000,000	17,163,681	2,914,173	4,074,618	15,602,438	2.1	2.0
Heitman Asia-Pacific Property Investors	2018	25,000,000	14,045,345	11,316,382	617,258	12,062,313	1.6	2.6
LBA Logistics Value Fund VII	2020	35,000,000	4,981,025	30,018,975	0	4,797,321	0.6	3.8
Mesa West Real Estate Income Fund III	2013	25,000,000	18,939,181	5,000,000	23,199,128	1,208,100	0.2	0.7
NREP Nordic Strategies Fund IV	2019	35,437,928	847,901	35,487,531	0	112,561	0.0	3.9
Standard Life Investments European Real Estate Club II	2015	28,531,885	28,134,410	1,247,822	40,572,657	204,981	0.0	0.2
Value Added	**1990**	**298,969,813**	**178,486,564**	**119,136,872**	**162,085,474**	**80,315,747**	**10.7**	**22.0**
Total Current Portfolio								
LACERS	**1989**	**1,207,844,709**	**1,174,010,385**	**156,887,023**	**795,593,920**	**749,601,746**	**100.0**	**100.0**

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Opportunistic								
Apollo CPI Europe I	2006	25,533,001	22,385,238	1,670,748	11,493,929	473,986	0.1	0.2
Bristol Value II, L.P.	2012	20,000,000	23,139,229	2,352,510	11,341,783	17,707,854	2.4	2.2
Broadview Real Estate Partners Fund, L.P.	2019	20,000,000	1,432,246	18,567,754	0	1,028,751	0.1	2.2
Bryanston Retail Opportunity Fund	2005	10,000,000	4,271,584	5,885,919	10,704,893	5,260,155	0.7	1.2
California Smart Growth Fund IV	2006	30,000,000	31,522,663	33,153	34,900,841	2,230,399	0.3	0.2
Canyon Johnson Urban Fund II	2005	10,000,000	8,988,718	1,011,296	3,974,652	33,230	0.0	0.1
CIM Real Estate Fund III	2007	15,000,000	16,674,075	0	20,818,964	6,586,728	0.9	0.7
CityView LA Urban Fund I	2007	25,000,000	61,482,527	0	73,811,664	0	0.0	0.0
Colony Investors VIII	2007	30,000,000	28,963,224	1,023,167	12,378,404	477,914	0.1	0.2
DRA Growth and Income Fund VI	2007	25,000,000	16,788,945	0	27,602,518	631,647	0.1	0.1
Integrated Capital Hospitality Fund	2009	10,000,000	6,006,797	0	2,728,129	244,060	0.0	0.0
LaSalle Asia Fund II	2005	25,000,000	24,016,560	0	25,989,261	0	0.0	0.0
Latin America Investors III	2008	20,000,000	20,686,689	0	3,886,924	-2,606,248	-0.3	-0.3
Lone Star Fund VII	2011	15,000,000	14,075,468	924,533	24,557,560	104,380	0.0	0.1
Lone Star Real Estate Fund II	2011	15,000,000	13,291,475	1,708,525	20,173,309	401,502	0.1	0.2
RECP Fund IV, L.P.	2008	40,000,000	51,496,646	1,265,045	34,430,309	22,385,188	3.0	2.6
Southern California Smart Growth Fund	2004	10,000,000	18,836,734	68,213	18,787,802	39,121	0.0	0.0
Stockbridge Real Estate Fund II	2006	30,000,000	30,000,000	0	11,177,560	2,582,166	0.3	0.3
Torchlight Debt Opportunity Fund IV	2013	24,474,342	24,483,106	0	30,834,057	4,191,720	0.6	0.5
Tuckerman Group Residential Income & Value Added Fund	2004	25,000,000	26,542,525	0	25,874,723	433,718	0.1	0.0
Walton Street Real Estate Fund V	2006	25,000,000	25,000,001	0	16,410,846	2,051,957	0.3	0.2
Walton Street Real Estate Fund VI	2009	25,000,000	22,161,966	3,239,288	25,363,504	7,866,856	1.0	1.2
Opportunistic	**1996**	**475,007,343**	**492,246,416**	**37,750,151**	**447,241,632**	**72,125,084**	**9.6**	**12.1**
Private Real Estate Portfolio Only (ex. Timber)	**1989**	**1,187,844,709**	**1,155,408,534**	**156,887,023**	**791,250,952**	**730,563,324**	**97.5**	**97.9**
Non-Core Portfolio	**1990**	**773,977,156**	**670,732,980**	**156,887,023**	**609,327,106**	**152,440,831**	**20.3**	**34.1**
Total Current Portfolio								
LACERS	**1989**	**1,207,844,709**	**1,174,010,385**	**156,887,023**	**795,593,920**	**749,601,746**	**100.0**	**100.0**

Returns (%)	Market Value ($)	Quarter				1 Year				3 Year			
		INC[2]	APP[2]	TGRS[2]	TNET[2]	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Core													
Berkshire Multifamily Income Realty Fund	19,808,430	1.0	-2.8	-1.8	-1.9	4.2	-2.5	1.6	0.9	4.2	0.1	4.3	3.6
CIM Commercial Trust Corporation ("CMCT")[1]	-3,993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CIM VI (Urban REIT), LLC	30,578,267	0.8	-5.8	-4.9	-5.3	3.1	-3.4	-0.4	-1.7	3.4	0.8	4.2	2.8
INVESCO Core Real Estate	183,625,278	0.8	-5.2	-4.4	-4.5	3.6	-2.2	1.3	1.0	3.7	1.8	5.5	5.1
Jamestown Premier Property Fund	37,259,470	0.6	-4.6	-4.0	-4.0	2.0	-5.6	-3.7	-4.2	3.1	3.5	6.7	4.9
JP Morgan Strategic Property Fund	70,553,292	0.9	-2.9	-2.0	-2.3	3.9	-1.6	2.3	1.3	3.9	1.2	5.1	4.1
Kayne Anderson Core Real Estate Fund	34,515,199	1.0	-2.2	-1.2	-1.3	4.8	-0.6	4.1	3.6				
Lion Industrial Trust - 2007	78,701,400	1.1	0.9	2.0	1.7	4.7	8.2	13.2	11.2	5.0	10.6	16.0	13.6
Prime Property Fund	56,018,316	0.8	-2.5	-1.7	-1.9	3.6	-0.9	2.7	1.7	3.8	2.9	6.8	5.7
Principal U.S. Property Account	67,066,834	0.9	-2.2	-1.2	-1.5	4.1	-1.3	2.8	1.8	4.4	2.1	6.6	5.6
Core	**578,122,493**	**0.9**	**-3.3**	**-2.4**	**-2.6**	**3.7**	**-0.8**	**2.9**	**2.1**	**3.9**	**3.0**	**7.0**	**5.9**
Timber													
Hancock Timberland XI	19,038,422	-0.3	0.0	-0.3	-0.5	0.2	4.6	4.8	3.9	0.4	3.2	3.6	2.7
Timber	**19,038,422**	**-0.3**	**0.0**	**-0.3**	**-0.5**	**0.2**	**4.6**	**4.8**	**3.9**	**0.4**	**3.2**	**3.6**	**2.7**
Value Added													
Almanac Realty Securities VI	3,167,231	2.9	-2.0	0.9	0.6	11.1	-35.6	-27.7	-28.4	9.2	-19.3	-11.5	-12.2
Asana Partners Fund I	21,291,527	0.6	0.3	0.9	1.7	2.3	-3.2	-1.0	-0.2	1.4	17.0	18.7	13.5
Asana Partners Fund II	4,095,499	-0.7	-4.1	-4.8	-8.8								
DRA Growth and Income Fund VII	4,137,475	4.2	-10.8	-6.6	-6.3	9.4	17.0	27.9	21.3	8.7	25.8	36.3	29.0
DRA Growth and Income Fund VIII	13,636,301	2.5	-25.8	-23.3	-22.5	8.8	-24.2	-16.9	-17.5	10.1	-7.7	1.9	0.2
Gerrity Retail Fund 2	15,602,438	1.2	-13.7	-12.5	-12.8	5.9	-13.3	-8.0	-9.2	6.7	-2.7	3.9	2.3
Heitman Asia-Pacific Property Investors	12,062,313	0.4	13.8	14.1	13.9	6.1	-9.1	-3.7	-4.5				
LBA Logistics Value Fund VII	4,797,321	1.9	0.6	2.5									
Mesa West Real Estate Income Fund III	1,208,100	-0.2	-2.1	-2.3	-1.8	1.1	-4.7	-3.7	-2.9	9.5	-2.2	7.1	5.8
NREP Nordic Strategies Fund IV	112,561	N/A	N/A	N/A	N/A								
Standard Life Investments European Real Estate Club II[4]	204,981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	**80,315,747**	**1.7**	**-7.4**	**-5.8**	**-6.1**	**5.5**	**-7.2**	**-2.0**	**-5.2**	**6.5**	**2.6**	**9.2**	**6.0**
Total Portfolio													
LACERS	**749,601,746**	**0.8**	**-3.7**	**-2.9**	**-3.1**	**3.3**	**-2.6**	**0.7**	**-0.4**	**3.8**	**2.0**	**5.9**	**4.6**
Indices													
NFI-ODCE (Core)		0.9	-2.5	-1.6	-1.8	4.1	-1.8	2.2	1.3	4.2	1.4	5.7	4.7
NFI-ODCE + 80 bps (Total Portfolio)				-1.4	-1.6			3.0	2.1			6.5	5.5
NFI-ODCE + 200 bps (Non-Core Portfolio)				-1.1	-1.3			4.2	3.3			7.7	6.7
NFI -ODCE + 50 bps (Value Add)				-1.4	-1.6			2.7	1.8			6.2	5.2
NFI -ODCE + 300 bps (Opportunistic)				-0.8	-1.0			5.2	4.3			8.7	7.7
NCREIF Timberland Property Index "NTI"		-0.5	0.4	-0.1		1.5	-1.3	0.2		2.5	-0.2	2.3	

* Net IRR and Equity Multiple may be missing due to hard coded data.

[1] Originally CIM IV. Data shown only reflects performance since the formation of CMCT. Combined, CIM IV/CMCT has achieved a 6.3% net IRR nad 1.3x net equity multiple since inception (1Q06).

[2] INC: Income Return; APP: Appreciation Return; TGRS: Total Gross Return; TNET: Total Net Return. Please refer to Exhibit C for more detailed definitions.

[3] Negative Market Value represents fees owed to the manager. No capital had been called as of quarter-end.

[4] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

Returns (%)	Market Value ($)	5 Year				Inception				TWR Calculation Inception	Net IRR*	Equity Multiple*
		INC	APP	TGRS	TNET	INC	APP	TGRS	TNET			
Core												
Berkshire Multifamily Income Realty Fund	19,808,430					4.2	1.3	5.6	4.9	1Q16	7.5	1.4
CIM Commercial Trust Corporation ("CMCT")[1]	-3,993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1Q14	4.6	1.2
CIM VI (Urban REIT), LLC	30,578,267	3.7	2.0	5.7	4.4	3.6	4.5	8.3	6.9	3Q12	6.2	1.5
INVESCO Core Real Estate	183,625,278	3.8	3.3	7.2	6.8	5.0	2.6	7.8	7.3	4Q04	7.3	2.0
Jamestown Premier Property Fund	37,259,470	3.7	4.3	8.1	6.2	3.7	4.3	8.1	6.2	3Q15	6.7	1.2
JP Morgan Strategic Property Fund	70,553,292	4.2	2.6	6.9	5.8	5.1	2.0	7.2	6.1	4Q05	6.3	2.4
Kayne Anderson Core Real Estate Fund	34,515,199					5.1	1.3	6.5	5.9	1Q19	2.2	1.0
Lion Industrial Trust - 2007	78,701,400					5.2	10.1	15.7	13.3	1Q16	13.4	1.7
Prime Property Fund	56,018,316					4.0	3.8	7.9	6.8	1Q16	6.9	1.3
Principal U.S. Property Account	67,066,834					4.6	3.2	7.9	6.9	4Q15	6.8	1.3
Core	**578,122,493**	**4.1**	**3.9**	**8.0**	**7.1**	**6.3**	**1.6**	**7.9**	**7.0**	**1Q89**	**5.8**	**1.5**
Timber												
Hancock Timberland XI	19,038,422	0.0	4.0	4.1	3.2	-0.3	5.5	5.2	4.3	2Q12	3.9	1.3
Timber	**19,038,422**	**0.0**	**4.0**	**4.1**	**3.2**	**4.5**	**5.5**	**10.3**	**9.0**	**4Q99**	**9.5**	**1.7**
Value Added												
Almanac Realty Securities VI	3,167,231	8.3	-7.6	0.3	-0.5	8.9	-2.7	6.0	4.3	1Q13	9.8	1.3
Asana Partners Fund I	21,291,527					1.6	16.0	17.9	12.5	2Q17	12.0	1.3
Asana Partners Fund II	4,095,499					-11.2	-24.5	-34.0	-46.7	4Q19	-63.5	0.7
DRA Growth and Income Fund VII	4,137,475	9.4	23.3	34.4	27.7	11.2	15.3	27.9	22.4	1Q12	21.1	2.2
DRA Growth and Income Fund VIII	13,636,301	11.3	-3.9	7.2	5.0	11.5	-3.4	7.9	5.6	4Q14	7.0	1.2
Gerrity Retail Fund 2	15,602,438					7.6	0.4	8.1	5.8	4Q15	4.2	1.1
Heitman Asia-Pacific Property Investors	12,062,313					2.0	-7.7	-5.9	-6.7	3Q18	-6.8	0.9
LBA Logistics Value Fund VII	4,797,321									2Q20	-3.4	1.0
Mesa West Real Estate Income Fund III	1,208,100	10.4	-1.5	8.8	7.1	11.0	-0.9	10.0	7.2	4Q13	8.4	1.3
NREP Nordic Strategies Fund IV	112,561					N/A	N/A	N/A	N/A	1Q20	-86.8	0.1
Standard Life Investments European Real Estate Club II[4]	204,981					N/A	N/A	N/A	N/A	1Q16	15.7	1.4
Value Added	**80,315,747**	**7.1**	**4.5**	**11.8**	**8.8**	**7.5**	**2.2**	**9.9**	**7.8**	**4Q90**		
Total Portfolio												
LACERS	**749,601,746**	**4.2**	**2.9**	**7.2**	**5.8**	**6.0**	**1.4**	**7.4**	**5.8**	**1Q89**		
Indices												
NFI-ODCE (Core)		4.3	2.9	7.3	6.3	6.6	0.5	7.2	6.2	1Q89		
NFI-ODCE + 80 bps (Total Portfolio)				8.1	7.1			8.0	7.0	1Q89		
NFI-ODCE + 200 bps (Non-Core Portfolio)				9.3	8.3			9.4	8.4	4Q90		
NFI -ODCE + 50 bps (Value Add)				7.8	6.8			7.9	6.9	4Q90		
NFI -ODCE + 300 bps (Opportunistic)				10.3	9.3			12.1	11.0	4Q96		
NCREIF Timberland Property Index "NTI"		2.6	0.2	2.7		3.3	2.8	6.1		4Q99		

* Net IRR and Equity Multiple may be missing due to hard coded data.

[1] Originally CIM IV. Data shown only reflects performance since the formation of CMCT. Combined, CIM IV/CMCT has achieved a 6.3% net IRR nad 1.3x net equity multiple since inception (1Q06).

[2] INC: Income Return; APP: Appreciation Return; TGRS: Total Gross Return; TNET: Total Net Return. Please refer to Exhibit C for more detailed definitions.

[3] Negative Market Value represents fees owed to the manager. No capital had been called as of quarter-end.

[4] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

Returns (%)	Market Value ($)	Quarter				1 Year				3 Year			
		INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Opportunistic													
Apollo CPI Europe I [1]	473,986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bristol Value II, L.P.	17,707,854	0.7	0.0	0.7	0.4	1.7	8.5	10.3	8.8	1.0	9.5	10.5	8.9
Broadview Real Estate Partners Fund, L.P.	1,028,751	-5.4	18.4	13.0	-5.4								
Bryanston Retail Opportunity Fund	5,260,155	0.0	29.1	29.1	29.0	-0.1	52.9	52.7	52.2	-0.1	13.9	13.8	13.3
California Smart Growth Fund IV	2,230,399	1.7	0.0	1.7	1.7	-0.4	16.0	15.6	15.6	0.3	7.0	7.3	6.8
Canyon Johnson Urban Fund II[1]	33,230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CIM Real Estate Fund III[12]	6,586,728	-1.1	-7.1	-8.1	-8.5	-1.3	-12.9	-14.1	-15.3	1.5	-3.1	-1.4	-2.8
CityView LA Urban Fund I[1]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Colony Investors VIII[12]	477,914	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DRA Growth and Income Fund VI[1]	631,647	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Integrated Capital Hospitality Fund	244,060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LaSalle Asia Fund II [1]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Latin America Investors III[13]	-2,606,248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone Star Fund VII [1]	104,380	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone Star Real Estate Fund II[1]	401,502	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RECP Fund IV, L.P.	22,385,188	0.0	-14.1	-14.1	-14.2	0.8	-23.6	-23.0	-23.2	2.0	-6.0	-4.1	-4.7
Southern California Smart Growth Fund[1]	39,121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stockbridge Real Estate Fund II	2,582,166	-0.1	-3.9	-4.0	-4.1	1.3	-10.1	-8.9	-9.3	1.1	-1.4	-0.3	-0.6
Torchlight Debt Opportunity Fund IV	4,191,720	0.6	-0.4	0.2	0.7	3.5	-17.1	-14.0	-4.9	6.5	-3.5	2.7	4.4
Tuckerman Group Residential Income & Value Added Fund [1]	433,718	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Walton Street Real Estate Fund V	2,051,957	-1.8	-1.0	-2.7	-2.7	-3.3	-18.7	-21.5	-21.5	-0.3	-13.1	-13.4	-13.7
Walton Street Real Estate Fund VI	7,866,856	-1.6	2.3	0.7	0.4	2.0	-11.4	-9.4	-10.4	3.3	-3.0	0.2	-0.9
Opportunistic	**72,125,084**	**-0.4**	**-4.1**	**-4.5**	**-4.8**	**-0.8**	**-11.5**	**-12.2**	**-12.7**	**1.3**	**-4.3**	**-3.1**	**-4.1**
Private Real Estate Portfolio Only (ex. Timber)	**730,563,324**	**0.8**	**-3.8**	**-3.0**	**-3.2**	**3.4**	**-2.8**	**0.6**	**-0.6**	**3.9**	**2.0**	**5.9**	**4.6**
Non-Core Portfolio	**152,440,831**	**0.8**	**-5.2**	**-4.4**	**-4.6**	**2.8**	**-8.1**	**-5.5**	**-7.0**	**3.9**	**-0.6**	**3.3**	**1.4**
Total Portfolio													
LACERS	**749,601,746**	**0.8**	**-3.7**	**-2.9**	**-3.1**	**3.3**	**-2.6**	**0.7**	**-0.4**	**3.8**	**2.0**	**5.9**	**4.6**
Indices													
NFI-ODCE (Core)		0.9	-2.5	-1.6	-1.8	4.1	-1.8	2.2	1.3	4.2	1.4	5.7	4.7
NFI-ODCE + 80 bps (Total Portfolio)				-1.4	-1.6			3.0	2.1			6.5	5.5
NFI-ODCE + 200 bps (Non-Core Portfolio)				-1.1	-1.3			4.2	3.3			7.7	6.7
NFI -ODCE + 50 bps (Value Add)				-1.4	-1.6			2.7	1.8			6.2	5.2
NFI -ODCE + 300 bps (Opportunistic)				-0.8	-1.0			5.2	4.3			8.7	7.7
NCREIF Timberland Property Index "NTI"		-0.5	0.4	-0.1		1.5	-1.3	0.2		2.5	-0.2	2.3	

* Net IRR and Equity Multiple may be missing due to hard coded data.

[1] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

[2] Broken time-weighted return since inception

Returns (%)	Market Value ($)	5 Year INC	5 Year APP	5 Year TGRS	5 Year TNET	Inception INC	Inception APP	Inception TGRS	Inception TNET	TWR Calculation Inception	Net IRR*	Equity Multiple*
Opportunistic												
Apollo CPI Europe I [1]	473,986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4Q06	-9.3	0.5
Bristol Value II, L.P.	17,707,854	1.9	8.0	9.9	8.2	2.6	10.2	13.0	11.2	1Q13	8.8	1.3
Broadview Real Estate Partners Fund, L.P.	1,028,751					-12.1	1545.5	-177.3	-164.7	4Q19	-67.5	0.7
Bryanston Retail Opportunity Fund	5,260,155	-0.2	28.1	27.9	27.4	6.7	24.0	30.3	27.2	2Q05	79.7	3.7
California Smart Growth Fund IV	2,230,399	2.2	8.1	10.4	10.0	2.1	1.2	3.2	1.3	1Q07	2.6	1.2
Canyon Johnson Urban Fund II[1]	33,230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3Q05	-10.4	0.4
CIM Real Estate Fund III[1,2]	6,586,728	5.0	-4.1	1.8	0.4	-8.4	N/A	N/A	N/A	1Q08	9.1	1.6
CityView LA Urban Fund I[1]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3Q07	11.8	1.2
Colony Investors VIII[1,2]	477,914	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4Q07	-11.7	0.4
DRA Growth and Income Fund VI[1]	631,647	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2Q08	10.7	1.7
Integrated Capital Hospitality Fund	244,060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3Q11	-22.6	0.5
LaSalle Asia Fund II [1]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4Q05	1.8	1.1
Latin America Investors III[1,3]	-2,606,248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1Q09	0.0	0.1
Lone Star Fund VII [1]	104,380	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3Q11	50.2	1.8
Lone Star Real Estate Fund II[1]	401,502	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3Q11	26.4	1.5
RECP Fund IV, L.P.	22,385,188	1.8	-1.2	0.5	-0.6	3.2	-7.6	-4.7	-8.0	4Q08	1.8	1.1
Southern California Smart Growth Fund[1]	39,121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1Q05	0.0	1.0
Stockbridge Real Estate Fund II	2,582,166	0.6	0.5	1.2	0.6	N/A	N/A	N/A	N/A	4Q06	-7.2	0.5
Torchlight Debt Opportunity Fund IV	4,191,720	7.7	-1.5	6.1	6.4	8.4	0.0	8.3	7.7	4Q13	9.8	1.4
Tuckerman Group Residential Income & Value Added Fund [1]	433,718	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4Q04	-0.1	1.0
Walton Street Real Estate Fund V	2,051,957	1.5	-8.5	-7.1	-7.8	1.8	-3.7	-1.9	-3.5	4Q06	-3.3	0.7
Walton Street Real Estate Fund VI	7,866,856	3.0	-1.9	1.0	-0.1	-8.0	11.4	1.3	-3.0	3Q09	8.1	1.5
Opportunistic	**72,125,084**	**2.3**	**-2.3**	**0.0**	**-1.3**	**4.0**	**2.1**	**6.1**	**2.7**	**4Q96**	**1.7**	**1.1**
Private Real Estate Portfolio Only (ex. Timber)	**730,563,324**	**4.3**	**2.9**	**7.3**	**5.9**	**6.0**	**1.3**	**7.4**	**5.7**	**1Q89**		
Non-Core Portfolio	**152,440,831**	**4.5**	**1.0**	**5.6**	**3.6**	**6.3**	**2.2**	**8.6**	**6.1**	**4Q90**		
Total Portfolio												
LACERS	**749,601,746**	**4.2**	**2.9**	**7.2**	**5.8**	**6.0**	**1.4**	**7.4**	**5.8**	**1Q89**		
Indices												
NFI-ODCE (Core)		4.3	2.9	7.3	6.3	6.6	0.5	7.2	6.2	1Q89		
NFI-ODCE + 80 bps (Total Portfolio)				8.1	7.1			8.0	7.0	1Q89		
NFI-ODCE + 200 bps (Non-Core Portfolio)				9.3	8.3			9.4	8.4	4Q90		
NFI -ODCE + 50 bps (Value Add)				7.8	6.8			7.9	6.9	4Q90		
NFI -ODCE + 300 bps (Opportunistic)				10.3	9.3			12.1	11.0	4Q96		
NCREIF Timberland Property Index “NTI”		2.6	0.2	2.7		3.3	2.8	6.1		4Q99		

* Net IRR and Equity Multiple may be missing due to hard coded data.

[1] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

[2] Broken time-weighted return since inception

Returns (%)	Market Value ($)	2020		2019		2018		2017		2016		2015	
		TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
Core													
Berkshire Multifamily Income Realty Fund	19,808,430	-1.5	-1.8	5.0	4.2	6.2	5.6	5.4	4.7	10.4	9.5		
CIM Commercial Trust Corporation ("CMCT")	-3,993	N/A	N/A	-32.3	-32.3	-0.6	-0.6	2.8	2.8	3.3	3.3	5.0	5.0
CIM VI (Urban REIT), LLC	30,578,267	-4.9	-5.5	5.3	3.9	10.4	8.9	5.2	3.7	2.6	2.4	13.4	11.0
INVESCO Core Real Estate	183,625,278	-2.9	-3.0	6.6	6.2	9.4	9.0	8.4	8.0	9.2	8.9	14.7	14.3
Jamestown Premier Property Fund	37,259,470	-4.6	-4.7	3.0	2.4	9.7	7.7	18.0	14.2	6.7	5.4	8.5	7.0
JP Morgan Strategic Property Fund	70,553,292	-0.5	-1.0	4.4	3.4	8.0	7.0	7.2	6.2	8.4	7.3	15.2	14.1
Kayne Anderson Core Real Estate Fund	34,515,199	0.3	0.0	9.6	9.0								
Lion Industrial Trust - 2007	78,701,400	5.8	5.0	16.5	13.9	18.7	15.9	14.4	12.3	14.9	12.8		
Prime Property Fund	56,018,316	-0.8	-1.3	7.4	6.2	9.1	8.0	9.9	8.8	10.4	9.2		
Principal U.S. Property Account	67,066,834	-0.6	-1.1	7.0	6.0	9.1	8.1	9.1	8.1	10.1	9.0	3.0	2.8
Core	**578,122,493**	**-1.0**	**-1.4**	**7.2**	**6.3**	**9.8**	**8.7**	**9.2**	**8.1**	**8.7**	**7.9**	**13.4**	**12.7**
Timber													
Hancock Timberland XI	19,038,422	0.1	-0.4	4.9	3.9	3.9	2.9	2.1	1.2	3.5	2.6	5.4	4.6
Timber	**19,038,422**	**0.1**	**-0.4**	**3.9**	**2.9**	**2.1**	**1.2**	**3.5**	**2.6**	**5.4**	**4.5**	**8.1**	**4.5**
Value Added													
Almanac Realty Securities VI	3,167,231	-28.3	-28.7	-2.5	-3.2	2.0	1.3	0.4	-0.3	15.2	14.3	23.5	21.2
Asana Partners Fund I	21,291,527	-11.2	-8.1	28.7	21.3	26.4	18.7	18.1	10.8				
Asana Partners Fund II	4,095,499	-40.6	-47.5	11.1	1.5								
DRA Growth and Income Fund VII	4,137,475	-6.0	-6.3	56.3	45.0	44.7	37.0	34.1	28.6	35.2	28.8	22.9	16.2
DRA Growth and Income Fund VIII	13,636,301	-21.8	-21.4	11.0	8.6	14.1	11.3	14.2	11.7	14.7	11.8	16.0	12.9
Gerrity Retail Fund 2	15,602,438	-11.1	-11.7	6.7	5.3	12.4	10.6	9.8	7.6	21.4	17.7	1.7	0.6
Heitman Asia-Pacific Property Investors	12,062,313	-10.8	-11.2	4.1	3.3	-4.7	-5.2						
LBA Logistics Value Fund VII	4,797,321												
Mesa West Real Estate Income Fund III	1,208,100	-4.6	-3.7	4.2	3.5	15.8	12.8	12.6	10.1	11.2	8.8	13.0	10.2
NREP Nordic Strategies Fund IV	112,561	33.7	-83.2										
Standard Life Investments European Real Estate Club II	204,981	3.9	1.7	54.8	41.9	-2.0	-2.7	33.8	32.6	8.1	7.1		
Value Added	**80,315,747**	**-12.3**	**-12.9**	**18.9**	**14.1**	**14.1**	**11.0**	**18.6**	**15.9**	**14.6**	**12.1**	**14.5**	**11.7**
Total Portfolio													
LACERS	**749,601,746**	**-3.5**	**-3.9**	**7.6**	**6.2**	**8.4**	**7.0**	**10.0**	**8.6**	**8.1**	**6.8**	**11.2**	**9.5**
Indices													
NFI-ODCE (Core)		-0.6	-1.0	5.3	4.4	8.3	7.4	7.6	6.7	8.8	7.8	15.0	14.0
NFI-ODCE + 80 bps (Total Portfolio)		0.2	-0.2	6.1	5.2	9.1	8.2	8.4	7.5	9.6	8.6	15.8	14.8
NFI-ODCE + 200 bps (Non-Core Portfolio)		2.2	1.8	8.1	7.2	11.1	10.2	10.4	9.5	11.6	10.6	17.8	16.8
NFI-ODCE + 50 bps (Value Add)		-0.1	-0.5	5.8	4.9	8.8	7.9	8.1	7.2	9.3	8.3	15.5	14.5
NFI-ODCE + 300 bps (Opportunistic)		2.4	2.0	8.3	7.4	11.3	10.4	10.6	9.7	11.8	10.8	18.0	17.0
NCREIF Timberland Index (Timber)		0.2		3.4		3.6		2.7		5.0		10.5	

[1] Negative Market Value represents fees owed to the manager. No capital had been called as of quarter-end.

[2] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

Returns (%)	Market Value ($)	2014		2013		2012		2011		2010		2009		2008	
		TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
Core															
Berkshire Multifamily Income Realty Fund	19,808,430														
CIM Commercial Trust Corporation (“CMCT”)	-3,993	9.7	9.7												
CIM VI (Urban REIT), LLC	30,578,267	15.0	13.5	6.8	5.4	13.8	13.1								
INVESCO Core Real Estate	183,625,278	12.4	11.9	14.3	13.8	8.7	8.2	16.9	16.4	16.7	16.1	-32.2	-32.6	-4.6	-5.0
Jamestown Premier Property Fund	37,259,470														
JP Morgan Strategic Property Fund	70,553,292	11.1	10.1	15.9	14.8	12.1	11.0	15.9	14.8	14.1	13.0	-26.5	-27.4	-8.1	-9.0
Kayne Anderson Core Real Estate Fund	34,515,199														
Lion Industrial Trust - 2007	78,701,400														
Prime Property Fund	56,018,316														
Principal U.S. Property Account	67,066,834														
Core	**578,122,493**	**11.8**	**11.3**	**13.3**	**12.5**	**9.6**	**8.9**	**15.6**	**14.8**	**16.1**	**15.2**	**-26.4**	**-27.1**	**-4.9**	**-5.6**
Timber															
Hancock Timberland XI	19,038,422	5.2	4.6	9.9	8.9	8.1	7.6								
Timber	**19,038,422**	**20.9**	**17.8**	**9.9**	**8.9**	**3.9**	**4.2**	**2.9**	**2.7**	**-7.4**	**-5.5**	**7.6**	**6.5**	**22.1**	**17.3**
Value Added															
Almanac Realty Securities VI	3,167,231	15.2	12.8	31.6	26.1										
Asana Partners Fund I	21,291,527														
Asana Partners Fund II	4,095,499														
DRA Growth and Income Fund VII	4,137,475	20.3	17.7	18.7	15.5	17.6	14.3								
DRA Growth and Income Fund VIII	13,636,301	2.7	2.1												
Gerrity Retail Fund 2	15,602,438														
Heitman Asia-Pacific Property Investors	12,062,313														
LBA Logistics Value Fund VII	4,797,321														
Mesa West Real Estate Income Fund III	1,208,100	13.3	8.7	3.2	-0.6										
NREP Nordic Strategies Fund IV	112,561														
Standard Life Investments European Real Estate Club II	204,981														
Value Added	**80,315,747**	**12.6**	**10.9**	**9.5**	**7.9**	**17.1**	**15.6**	**18.3**	**16.2**	**4.1**	**1.8**	**-38.5**	**-39.4**	**-20.7**	**-20.0**
Total Portfolio															
LACERS	**749,601,746**	**13.7**	**11.8**	**13.5**	**11.4**	**12.8**	**11.0**	**12.6**	**10.8**	**13.0**	**10.3**	**-34.4**	**-35.9**	**-22.5**	**-23.6**
Indices															
NFI-ODCE (Core)		12.5	11.5	13.9	12.9	10.9	9.8	16.0	15.0	16.4	15.3	-29.8	-30.4	-10.0	-10.7
NFI-ODCE + 80 bps (Total Portfolio)		13.3	12.3	14.7	13.7	11.7	10.6	16.8	15.8	17.2	16.1	-29.0	-29.6	-9.2	-9.9
NFI-ODCE + 200 bps (Non-Core Portfolio)		15.3	14.3	16.7	15.7	13.7	12.6	18.8	17.8	19.2	18.1	-27.0	-27.6	-7.2	-7.9
NFI-ODCE + 50 bps (Value Add)		13.0	12.0	14.4	13.4	11.4	10.3	16.5	15.5	16.9	15.8	-29.3	-29.9	-9.5	-10.2
NFI-ODCE + 300 bps (Opportunistic)		15.5	14.5	16.9	15.9	13.9	12.8	19.0	18.0	19.4	18.3	-26.8	-27.4	-7.0	-7.7
NCREIF Timberland Index (Timber)		9.7		7.8		1.6		-0.1		-4.7		9.5		18.4	

[1] Negative Market Value represents fees owed to the manager. No capital had been called as of quarter-end.
[2] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

TOWNSEND GROUP
an Aon company

Returns (%)	Market Value ($)	2020		2019		2018		2017		2016		2015	
		TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
Opportunistic													
Apollo CPI Europe I [1]	473,986	-0.5	-0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bristol Value II, L.P.	17,707,854	1.3	0.6	8.5	6.9	6.7	5.1	17.1	15.3	11.0	9.1	8.2	6.1
Broadview Real Estate Partners Fund, L.P.	1,028,751	32.2	10.7	N/A	N/A								
Bryanston Retail Opportunity Fund	5,260,155	29.1	28.9	18.3	17.9	23.5	22.9	-22.1	-22.4	-2.5	-2.8	144.0	142.1
California Smart Growth Fund IV	2,230,399	-0.4	-0.4	28.3	28.3	-6.1	-6.1	14.3	12.8	5.9	5.4	20.3	19.2
Canyon Johnson Urban Fund II [1]	33,230	-0.2	-0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CIM Real Estate Fund III	6,586,728	-13.1	-13.8	0.3	-1.1	5.9	4.5	8.0	6.4	5.4	4.0	8.3	7.1
CityView LA Urban Fund I [1]	0	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Colony Investors VIII [1]	477,914	-12.4	-12.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DRA Growth and Income Fund VI	631,647	-30.6	-25.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Integrated Capital Hospitality Fund	244,060	-19.2	-23.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LaSalle Asia Fund II [1]	0	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Latin America Investors III [2]	-2,606,248	65.1	71.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone Star Fund VII [1]	104,380	8.6	5.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone Star Real Estate Fund II [1]	401,502	-21.4	-12.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RECP Fund IV, L.P.	22,385,188	-23.8	-23.9	2.3	2.1	2.1	1.6	14.6	12.4	6.9	5.3	8.3	6.2
Southern California Smart Growth Fund [1]	39,121	-2.2	-2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stockbridge Real Estate Fund II	2,582,166	-4.9	-5.1	-4.6	-5.0	0.6	0.2	21.2	20.6	-4.7	-5.5	3.9	2.6
Torchlight Debt Opportunity Fund IV	4,191,720	-10.2	-4.0	-2.2	1.5	14.8	10.7	15.2	11.3	11.8	9.8	12.0	9.8
Tuckerman Group Residential Income & Value Added Fund [1]	433,718	-3.6	-3.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Walton Street Real Estate Fund V	2,051,957	-7.8	-7.8	-17.9	-18.1	-16.6	-17.1	4.5	3.5	2.1	0.7	11.9	10.4
Walton Street Real Estate Fund VI	7,866,856	-10.0	-10.5	2.0	1.0	4.2	3.1	9.2	7.9	-5.4	-6.6	13.5	12.2
Opportunistic	**72,125,084**	**-11.4**	**-11.5**	**0.1**	**-0.8**	**-1.1**	**-2.5**	**7.5**	**5.8**	**2.8**	**1.3**	**7.2**	**5.3**
Private Real Estate Portfolio Only (ex. Timber)	**730,563,324**	**-3.6**	**-3.9**	**7.7**	**6.3**	**8.6**	**7.1**	**10.2**	**8.8**	**8.2**	**6.9**	**11.3**	**9.6**
Non-Core Portfolio	**152,440,831**	**-10.0**	**-10.3**	**8.9**	**6.6**	**5.8**	**3.7**	**12.1**	**10.0**	**7.5**	**5.6**	**9.8**	**7.6**
Total Portfolio													
LACERS	**749,601,746**	**-3.5**	**-3.9**	**7.6**	**6.2**	**8.4**	**7.0**	**10.0**	**8.6**	**8.1**	**6.8**	**11.2**	**9.5**
Indices													
NFI-ODCE (Core)		-0.6	-1.0	5.3	4.4	8.3	7.4	7.6	6.7	8.8	7.8	15.0	14.0
NFI-ODCE + 80 bps (Total Portfolio)		0.2	-0.2	6.1	5.2	9.1	8.2	8.4	7.5	9.6	8.6	15.8	14.8
NFI-ODCE + 200 bps (Non-Core Portfolio)		2.2	1.8	8.1	7.2	11.1	10.2	10.4	9.5	11.6	10.6	17.8	16.8
NFI-ODCE + 50 bps (Value Add)		-0.1	-0.5	5.8	4.9	8.8	7.9	8.1	7.2	9.3	8.3	15.5	14.5
NFI-ODCE + 300 bps (Opportunistic)		2.4	2.0	8.3	7.4	11.3	10.4	10.6	9.7	11.8	10.8	18.0	17.0
NCREIF Timberland Index (Timber)		0.2		3.4		3.6		2.7		5.0		10.5	

[1] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

[2] Negative Market Value represents fees owed to the manager. No capital had been called as of quarter-end.

TOWNSEND GROUP
an Aon company

Returns (%)	Market Value ($)	2014		2013		2012		2011		2010		2009		2008	
		TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
Opportunistic															
Apollo CPI Europe I [1]	473,986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bristol Value II, L.P.	17,707,854	12.4	10.6	35.0	33.0										
Broadview Real Estate Partners Fund, L.P.	1,028,751														
Bryanston Retail Opportunity Fund	5,260,155	7.3	5.8	50.5	47.5	40.1	37.2	-4.3	-7.2	20.9	18.3	12.8	10.2	73.9	69.4
California Smart Growth Fund IV	2,230,399	17.9	16.2	13.1	11.6	19.9	18.3	26.7	24.6	20.1	17.0	-34.6	-38.0	-46.3	-48.6
Canyon Johnson Urban Fund II [1]	33,230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CIM Real Estate Fund III	6,586,728	11.0	9.8	11.1	9.9	20.8	19.4	21.8	19.8	15.3	-13.8	-53.5	-83.5	-117.3	-113.8
CityView LA Urban Fund I [1]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Colony Investors VIII [1]	477,914	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DRA Growth and Income Fund VI	631,647	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Integrated Capital Hospitality Fund	244,060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LaSalle Asia Fund II [1]	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Latin America Investors III [2]	-2,606,248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone Star Fund VII [1]	104,380	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone Star Real Estate Fund II [1]	401,502	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RECP Fund IV, L.P.	22,385,188	6.4	4.6	8.5	6.7	23.4	21.1	2.4	-1.4	12.5	4.3	-45.6	-54.8	-40.0	-40.0
Southern California Smart Growth Fund [1]	39,121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stockbridge Real Estate Fund II	2,582,166	24.4	22.8	46.5	43.7	3.2	0.7	7.2	4.2	21.8	16.8	-86.3	-86.8	-83.4	-84.0
Torchlight Debt Opportunity Fund IV	4,191,720	13.9	10.4	3.6	3.0										
Tuckerman Group Residential Income & Value Added Fund [1]	433,718	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Walton Street Real Estate Fund V	2,051,957	13.2	11.7	12.9	11.2	9.5	7.8	10.1	8.0	48.0	44.0	-27.8	-31.1	-47.7	-48.7
Walton Street Real Estate Fund VI	7,866,856	14.8	13.4	16.0	14.3	12.1	10.4	14.3	12.3	173.3	162.1	-78.1	-84.0		
Opportunistic	**72,125,084**	**15.7**	**12.9**	**15.3**	**12.2**	**12.5**	**10.1**	**8.8**	**6.5**	**17.1**	**12.6**	**-39.0**	**-41.6**	**-36.6**	**-39.2**
Private Real Estate Portfolio Only (ex. Timber)	**730,563,324**	**13.8**	**12.0**	**13.4**	**11.3**	**12.8**	**11.1**	**12.8**	**10.9**	**13.3**	**10.5**	**-35.1**	**-36.7**	**-23.1**	**-24.3**
Non-Core Portfolio	**152,440,831**	**14.7**	**12.2**	**13.6**	**10.9**	**14.0**	**11.9**	**11.9**	**9.6**	**12.2**	**8.5**	**-38.8**	**-40.7**	**-30.0**	**-31.3**
Total Portfolio															
LACERS	**749,601,746**	**13.7**	**11.8**	**13.5**	**11.4**	**12.8**	**11.0**	**12.6**	**10.8**	**13.0**	**10.3**	**-34.4**	**-35.9**	**-22.5**	**-23.6**
Indices															
NFI-ODCE (Core)		12.5	11.5	13.9	12.9	10.9	9.8	16.0	15.0	16.4	15.3	-29.8	-30.4	-10.0	-10.7
NFI-ODCE + 80 bps (Total Portfolio)		13.3	12.3	14.7	13.7	11.7	10.6	16.8	15.8	17.2	16.1	-29.0	-29.6	-9.2	-9.9
NFI-ODCE + 200 bps (Non-Core Portfolio)		15.3	14.3	16.7	15.7	13.7	12.6	18.8	17.8	19.2	18.1	-27.0	-27.6	-7.2	-7.9
NFI-ODCE + 50 bps (Value Add)		13.0	12.0	14.4	13.4	11.4	10.3	16.5	15.5	16.9	15.8	-29.3	-29.9	-9.5	-10.2
NFI-ODCE + 300 bps (Opportunistic)		15.5	14.5	16.9	15.9	13.9	12.8	19.0	18.0	19.4	18.3	-26.8	-27.4	-7.0	-7.7
NCREIF Timberland Index (Timber)		9.7		7.8		1.6		-0.1		-4.7		9.5		18.4	

[1] Liquidating investment. Time-weighted returns are excluded as they are no longer meaningful.

[2] Negative Market Value represents fees owed to the manager. No capital had been called as of quarter-end.

Quarterly Cash Flow Activity ($)	Beginning Market Value	Contributions	Distributions	Withdrawals	Gross Income	Manager Fees	Appreciation	Ending Market Value	LTV (%)
Core									
Berkshire Multifamily Income Realty Fund	20,322,871	0	120,660	0	200,111	32,241	-561,651	19,808,430	40.6
CIM Commercial Trust Corporation ("CMCT")	3,879	0	0	0	-7,872	0	0	-3,993	10.7
CIM VI (Urban REIT), LLC	32,284,431	0	0	0	259,367	108,440	-1,857,091	30,578,267	2.7
INVESCO Core Real Estate	192,211,266	1,689,162	1,512,398	0	1,538,859	149,568	-10,152,042	183,625,278	25.9
Jamestown Premier Property Fund	38,829,928	58,245	91,897	0	242,531	-9,437	-1,788,775	37,259,470	44.0
JP Morgan Strategic Property Fund	72,184,852	0	0	0	627,211	176,153	-2,082,618	70,553,292	24.9
Kayne Anderson Core Real Estate Fund	21,000,824	14,306,354	339,179	0	352,038	42,809	-762,029	34,515,199	38.8
Lion Industrial Trust - 2007	77,922,708	-3,751	549,283	0	864,517	230,833	698,043	78,701,400	30.8
Prime Property Fund	57,656,077	0	568,301	0	439,445	64,101	-1,444,803	56,018,316	17.2
Principal U.S. Property Account	68,068,903	0	0	0	633,491	160,196	-1,475,363	67,066,834	20.2
Core	**580,485,739**	**16,050,010**	**3,181,718**	**0**	**5,149,698**	**954,904**	**-19,426,329**	**578,122,493**	**27.3**
Timber									
Hancock Timberland XI	19,132,523	0	0	0	-51,186	42,915	0	19,038,422	0.0
Timber	**19,132,523**	**0**	**0**	**0**	**-51,186**	**42,915**	**0**	**19,038,422**	**0.0**
Value Added									
Almanac Realty Securities VI	3,149,223	0	0	0	91,695	9,259	-64,428	3,167,231	47.8
Asana Partners Fund I	20,365,086	572,000	0	0	113,317	-171,220	69,904	21,291,527	43.7
Asana Partners Fund II	1,492,130	2,843,750	0	0	-19,907	109,375	-111,100	4,095,499	15.3
DRA Growth and Income Fund VII	4,636,265	0	25,273	187,500	187,803	-12,121	-485,941	4,137,475	70.0
DRA Growth and Income Fund VIII	17,604,113	0	0	0	445,728	-133,537	-4,547,077	13,636,301	70.0
Gerrity Retail Fund 2	17,634,110	242,282	0	0	212,120	56,538	-2,429,536	15,602,438	59.5
Heitman Asia-Pacific Property Investors	10,062,537	673,764	99,031	0	38,370	26,078	1,412,751	12,062,313	55.0
LBA Logistics Value Fund VII	5,468,938	-710,032	0	0	96,952	88,927	30,390	4,797,321	59.6
Mesa West Real Estate Income Fund III	1,230,577	0	0	0	-2,513	-5,619	-25,583	1,208,100	0.0
NREP Nordic Strategies Fund IV	216,603	0	0	0	218,224	289,030	-33,236	112,561	42.0
Standard Life Investments European Real Estate Club II	8,967,862	0	8,684,550	0	18,852	4,026	-93,157	204,981	0.0
Value Added	**90,827,444**	**3,621,764**	**8,808,854**	**187,500**	**1,400,641**	**260,736**	**-6,277,013**	**80,315,747**	**55.8**
Total Portfolio									
LACERS	**767,197,116**	**20,484,566**	**12,456,059**	**1,523,645**	**6,219,210**	**1,449,262**	**-28,870,179**	**749,601,746**	**33.5**

Quarterly Cash Flow Activity ($)	Beginning Market Value	Contributions	Distributions	Withdrawals	Gross Income	Manager Fees	Appreciation	Ending Market Value	LTV (%)
Opportunistic									
Apollo CPI Europe I	467,759	0	0	0	-2,259	0	8,486	473,986	0.0
Bristol Value II, L.P.	17,762,126	0	126,984	0	132,475	59,763	0	17,707,854	37.8
Broadview Real Estate Partners Fund, L.P.	237,925	812,792	0	0	-22,134	75,000	75,168	1,028,751	0.0
Bryanston Retail Opportunity Fund	5,009,088	0	0	1,135,113	-1,171	3,746	1,391,097	5,260,155	49.8
California Smart Growth Fund IV	2,391,174	0	0	201,032	40,257	0	0	2,230,399	0.0
Canyon Johnson Urban Fund II	33,280	0	0	0	-50	0	0	33,230	0.0
CIM Real Estate Fund III	7,200,077	0	0	0	-76,097	27,596	-509,656	6,586,728	35.0
CityView LA Urban Fund I	0	0	0	0	0	0	0	0	0.0
Colony Investors VIII	529,255	0	0	0	47	0	-51,388	477,914	0.0
DRA Growth and Income Fund VI	967,099	0	85,000	0	13,976	-53,669	-318,097	631,647	77.0
Integrated Capital Hospitality Fund	409,698	0	0	0	-158,335	7,303	0	244,060	47.8
LaSalle Asia Fund II	236,444	0	236,444	0	0	0	0	0	0.0
Latin America Investors III	-2,379,314	0	0	0	-63,272	44,531	-119,131	-2,606,248	23.7
Lone Star Fund VII	104,576	0	0	0	-397	-201	0	104,380	0.0
Lone Star Real Estate Fund II	411,487	0	17,059	0	5,626	-4,681	-3,234	401,502	49.1
RECP Fund IV, L.P.	26,086,216	0	0	0	4,567	24,290	-3,681,305	22,385,188	50.0
Southern California Smart Growth Fund	39,671	0	0	0	-550	0	0	39,121	0.0
Stockbridge Real Estate Fund II	2,692,669	0	0	0	-2,851	3,181	-104,471	2,582,166	14.7
Torchlight Debt Opportunity Fund IV	4,163,299	0	0	0	23,149	-19,924	-14,652	4,191,720	13.8
Tuckerman Group Residential Income & Value Added Fund	443,936	0	0	0	-9,252	966	0	433,718	0.0
Walton Street Real Estate Fund V	2,109,929	0	0	0	-37,484	0	-20,488	2,051,957	60.5
Walton Street Real Estate Fund VI	7,835,016	0	0	0	-126,188	22,806	180,834	7,866,856	58.5
Opportunistic	**76,751,410**	**812,792**	**465,487**	**1,336,145**	**-279,943**	**190,707**	**-3,166,837**	**72,125,084**	**45.1**
Private Real Estate Portfolio Only (ex. Timber)	**748,064,593**	**20,484,566**	**12,456,059**	**1,523,645**	**6,270,396**	**1,406,347**	**-28,870,179**	**730,563,324**	**34.1**
Non-Core Portfolio	**167,578,854**	**4,434,556**	**9,274,341**	**1,523,645**	**1,120,698**	**451,443**	**-9,443,850**	**152,440,831**	**51.3**
Total Portfolio									
LACERS	**767,197,116**	**20,484,566**	**12,456,059**	**1,523,645**	**6,219,210**	**1,449,262**	**-28,870,179**	**749,601,746**	**33.5**

Property Type Diversification (%)	Apartment	Office	Industrial	Retail	Hotel	Other
Core						
Berkshire Multifamily Income Realty Fund	100.0	-	-	-	-	-
CIM Commercial Trust Corporation (“CMCT”)	-	81.7	-	-	14.5	3.8
CIM VI (Urban REIT), LLC	59.9	28.4	-	11.6	-	-
INVESCO Core Real Estate	26.9	35.5	20.0	14.1	-	3.5
Jamestown Premier Property Fund	-	69.2	-	23.8	-	7.1
JP Morgan Strategic Property Fund	21.9	36.9	17.8	21.5	-	1.9
Kayne Anderson Core Real Estate Fund	-	-	-	-	-	100.0
Lion Industrial Trust - 2007	-	-	100.0	-	-	-
Prime Property Fund	25.7	30.7	23.5	10.3	-	9.7
Principal U.S. Property Account	19.3	38.4	23.6	14.3	-	4.5
Core	**22.5**	**29.2**	**27.1**	**11.9**	**0.0**	**9.2**
Timber						
Hancock Timberland XI	-	-	-	-	-	100.0
Timber	**-**	**-**	**-**	**-**	**-**	**100.0**
Value Added						
Almanac Realty Securities VI	26.1	-	-	-	71.2	2.7
Asana Partners Fund I	-	-	-	100.0	-	-
Asana Partners Fund II	-	-	-	100.0	-	-
DRA Growth and Income Fund VII	66.3	23.2	-	10.5	-	-
DRA Growth and Income Fund VIII	10.1	32.8	20.8	36.3	-	-
Gerrity Retail Fund 2	-	-	-	100.0	-	-
Heitman Asia-Pacific Property Investors	-	50.1	20.0	14.0	-	15.9
LBA Logistics Value Fund VII	-	-	96.2	-	-	3.8
NREP Nordic Strategies Fund IV	42.1	-	14.6	25.3	-	18.0
Mesa West Real Estate Income Fund III	100.0	-	-	-	-	-
Standard Life Investments European Real Estate Club II	-	-	-	-	-	-
Value Added	**8.0**	**13.5**	**11.0**	**61.9**	**2.3**	**3.4**
Total Portfolio						
Los Angeles City Employees' Retirement System	**19.6**	**25.9**	**22.3**	**16.6**	**1.3**	**14.3**
Indices						
NFI-ODCE	**25.6**	**33.2**	**21.9**	**14.6**	**0.2**	**4.4**

Property Type Diversification (%)	Apartment	Office	Industrial	Retail	Hotel	Other
Opportunistic						
Apollo CPI Europe I	-	-	-	-	-	-
Bristol Value II, L.P.	14.2	55.3	-	-	-	30.4
Broadview Real Estate Partners Fund, L.P.	-	-	78.0	-	-	22.0
Bryanston Retail Opportunity Fund	-	-	-	100.0	-	-
California Smart Growth Fund IV	-	1.3	57.9	-	-	40.9
Canyon Johnson Urban Fund II	-	-	-	100.0	-	-
CIM Real Estate Fund III	20.6	19.1	-	9.9	23.6	26.8
CityView LA Urban Fund I	-	-	-	-	-	-
Colony Investors VIII	-	-	-	-	-	100.0
DRA Growth and Income Fund VI	-	65.2	-	34.8	-	-
Integrated Capital Hospitality Fund	-	-	-	-	100.0	-
LaSalle Asia Fund II	-	-	-	-	-	-
Latin America Investors III	-	19.6	-	-	-	80.4
Lone Star Fund VII	-	-	-	-	-	100.0
Lone Star Real Estate Fund II	-	24.5	-	-	-	75.5
RECP Fund IV, L.P.	20.4	4.3	7.8	-	17.4	50.1
Southern California Smart Growth Fund	-	-	-	-	-	-
Stockbridge Real Estate Fund II	-	-	-	-	-	100.0
Torchlight Debt Opportunity Fund IV	13.8	3.5	0.0	33.9	30.1	18.7
Tuckerman Group Residential Income & Value Added Fund	-	-	-	-	-	100.0
Walton Street Real Estate Fund V	-	-	-	1.4	17.8	80.8
Walton Street Real Estate Fund VI	3.1	4.5	-	-15.0	2.6	104.8
Opportunistic	**12.8**	**18.6**	**5.5**	**9.4**	**14.0**	**39.7**
Private Real Estate Portfolio Only (ex. Timber)	**19.2**	**25.5**	**25.6**	**17.5**	**1.5**	**10.6**
Non-Core Portfolio	**9.0**	**14.0**	**7.8**	**28.8**	**6.5**	**33.9**
Total Portfolio						
Los Angeles City Employees' Retirement System	**19.6**	**25.9**	**22.3**	**16.6**	**1.3**	**14.3**
Indices						
NFI-ODCE	**25.6**	**33.2**	**21.9**	**14.6**	**0.2**	**4.4**

Geographic Diversification (%)	North East	Mid East	East North Central	West North Central	South East	South West	Mountain	Pacific	Var-US	Ex-US
Core										
Berkshire Multifamily Income Realty Fund	6.2	4.7	10.6	3.8	26.1	11.9	7.8	28.9	-	-
CIM Commercial Trust Corporation ("CMCT")	-	-	-	-	-	-	-	-	100.0	-
CIM VI (Urban REIT), LLC	52.2	14.5	-	-	-	19.5	-	13.8	-	-
INVESCO Core Real Estate	18.9	7.5	2.0	0.7	1.7	14.0	10.1	45.1	-	-
Jamestown Premier Property Fund	29.5	30.4	-	-	4.2	-	-	35.8	-	-
JP Morgan Strategic Property Fund	19.3	6.6	4.7	0.1	4.6	15.8	2.8	46.1	-	-
Kayne Anderson Core Real Estate Fund	2.5	8.4	7.7	7.7	41.6	19.4	7.4	5.3	-	-
Lion Industrial Trust - 2007	20.2	1.9	6.9	1.3	15.2	14.6	5.8	34.0	-	-
Prime Property Fund	24.1	6.3	9.1	1.1	13.3	8.2	5.0	33.0	-	-
Principal U.S. Property Account	16.4	9.0	2.8	1.1	8.9	14.6	10.8	36.4	-	-
Core	**20.4**	**8.5**	**4.2**	**1.2**	**9.2**	**13.4**	**6.8**	**36.4**	**-**	**-**
Timber										
Hancock Timberland XI	-	-	-	-	-	-	-	22.8	62.3	15.0
Timber	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**22.8**	**62.3**	**15.0**
Value Added										
Almanac Realty Securities VI	-	-	-	-	-	-	-	-	100.0	-
Asana Partners Fund I	10.2	40.3	-	-	21.9	21.5	-	6.1	-	-
Asana Partners Fund II	16.9	29.2	-	-	26.0	-	2.2	25.7	-	-
DRA Growth and Income Fund VII	-	11.7	11.1	6.3	47.7	4.0	4.7	14.4	-	-
DRA Growth and Income Fund VIII	7.5	6.3	25.3	8.7	13.1	12.9	1.5	24.6	-	-
Gerrity Retail Fund 2	-	-	-	-	-	-	-	100.0	-	-
Heitman Asia-Pacific Property Investors	-	-	-	-	-	-	-	-	-	100.0
LBA Logistics Value Fund VII	15.7	14.1	22.0	-	18.9	4.0	1.7	23.5	-	-
Mesa West Real Estate Income Fund III	100.0	-	-	-	-	-	-	-	-	-
NREP Nordic Strategies Fund IV	-	-	-	-	-	-	-	-	-	100.0
Standard Life Investments European Real Estate Club II	-	-	-	-	-	-	-	-	100.0	-
Value Added	**6.7**	**14.7**	**5.2**	**1.9**	**12.5**	**8.6**	**0.7**	**29.0**	**4.5**	**16.1**
Total Portfolio										
LACERS	**19.5**	**8.8**	**4.1**	**1.1**	**9.8**	**11.5**	**5.6**	**33.7**	**2.7**	**3.3**
Indices										
NFI-ODCE	**22.0**	**8.2**	**7.0**	**1.3**	**9.7**	**9.3**	**5.6**	**36.9**	**-**	**-**

Geographic Diversification (%)	North East	Mid East	East North Central	West North Central	South East	South West	Mountain	Pacific	Var-US	Ex-US
Opportunistic										
Apollo CPI Europe I	-	-	-	-	-	-	-	-	100.0	-
Bristol Value II, L.P.	49.1	-	-	-	42.4	-	8.5	-	-	-
Broadview Real Estate Partners Fund, L.P.	-	-	88.0	-	12.0	-	-	-	-	-
Bryanston Retail Opportunity Fund	16.5	0.0	9.8	0.2	1.5	11.8	13.6	46.6	-	-
California Smart Growth Fund IV	-	-	-	-	-	-	-	100.0	-	-
Canyon Johnson Urban Fund II	100.0	-	-	-	-	-	-	-	-	-
CIM Real Estate Fund III	16.7	-	7.3	-	33.0	-	12.2	30.9	-	-
CityView LA Urban Fund I	-	-	-	-	-	-	-	-	100.0	-
Colony Investors VIII	-	-	-	-	-	-	-	92.0	-	8.0
DRA Growth and Income Fund VI	9.8	-	-	-	55.4	-	34.8	-	-	-
Integrated Capital Hospitality Fund	-	101.8	-	-	-	-1.8	-	-	-	-
LaSalle Asia Fund II	-	-	-	-	-	-	-	-	100.0	-
Latin America Investors III	-	-	-	-	-	-	-	-	-	100.0
Lone Star Fund VII	-	-	100.0	-	-	-	-	-	-	-
Lone Star Real Estate Fund II	-	-	-	-	-	-	-	-	100.0	-
RECP Fund IV, L.P.	14.8	21.3	-	-	-	1.4	0.0	19.5	-	43.0
Southern California Smart Growth Fund	-	-	-	-	-	-	-	-	100.0	-
Stockbridge Real Estate Fund II	-	-	-	-	-	-	-	100.0	-	-
Torchlight Debt Opportunity Fund IV	-	-	-	-	-	-	-	-	100.0	-
Tuckerman Group Residential Income & Value Added Fund	100.0	-	-	-	-	-	-	-	-	-
Walton Street Real Estate Fund V	-	-	-	-	9.3	-	-0.3	6.6	-	84.4
Walton Street Real Estate Fund VI	99.5	2.1	1.4	-0.9	2.3	3.3	-18.4	5.2	-	5.4
Opportunistic	**31.0**	**7.2**	**2.9**	**-0.1**	**14.7**	**1.7**	**2.5**	**20.3**	**7.1**	**12.8**
Private Real Estate Portfolio Only (ex. Timber)	**20.0**	**9.0**	**4.2**	**1.2**	**10.1**	**11.8**	**5.7**	**34.0**	**1.2**	**2.9**
Non-Core Portfolio	**18.6**	**11.0**	**4.1**	**0.9**	**13.6**	**5.2**	**1.6**	**24.8**	**5.7**	**14.5**
Total Portfolio										
LACERS	**19.5**	**8.8**	**4.1**	**1.1**	**9.8**	**11.5**	**5.6**	**33.7**	**2.7**	**3.3**
Indices										
NFI-ODCE	**22.0**	**8.2**	**7.0**	**1.3**	**9.7**	**9.3**	**5.6**	**36.9**	**-**	**-**

Advisory Disclosures and Definitions

Disclosure
Trade Secret and Confidential.

Past performance is not indicative of future results.

Investing involves risk, including the possible loss of principal.

Returns are presented on a time weighted basis and shown both gross and net of underlying third party fees and expenses and may include income, appreciation and/or other earnings. In addition, investment level Net IRR's and equity multiples are reported.

The Townsend Group, on behalf of its client base, collects quarterly limited partner/client level performance data based upon inputs from the underlying investment managers. Data collection is for purposes of calculating investment level performance as well as aggregating and reporting client level total portfolio performance. Quarterly limited partner/client level performance data is collected directly[1] from the investment managers via a secure data collection site.

[1]In select instances where underlying investment managers have ceased reporting limited partner/client level performance data directly to The Townsend Group via a secure data collection site, The Townsend Group may choose to input performance data on behalf of its client based upon the investment managers quarterly capital account statements which are supplied to The Townsend Group and the client alike.

Benchmarks
The potential universe of available real asset benchmarks are infinite. Any one benchmark, or combination thereof, may be utilized on a gross or net of fees basis with or without basis point premiums attached. These benchmarks may also utilize a blended composition with varying weighting methodologies, including market weighted and static weighted approaches.

Exhibit B: Portfolio Progress & Real Estate Market Update

LACERS 2020-2021 Investment Plan - Update

TOWNSEND® GROUP
an Aon company

Goal	Detail	Progress To Date
Evalute Core Portfolio	Evaluate existing Open-End Core fund portfolio and consider rebalancing the portfolio to improve diversification and returns, as necessary, while ensuring that LACERS does not redeem at temporarily depressed valuations due to current market stress.	Townsend is proposing a full redemption from Jamestown Premier Property Fund, and will be recommending a core-rebalancing plan in 2021.
Deploy Non-Core Capital	Focus on up to three incremental commitments in Non-Core (ranging from \$35 to \$50 million per investment), emphasizing blind-pool funds, as well as thematic investments arising from the current economic and health crisis's impact on the real estate sector.	Three high-conviction opportunities were approved by LACERS' Board, Cerberus Institutional Partners V (\$40 M), Waterton Residential Property Venture XIV (\$50 M) and Oaktree Real Estate Opportunity Fund VIII (\$50 M). Townsend is evaluating further high-conviction opportunities.
Target Blind Pool Opportunistic Managers	Pursue blind-pool opportunistic funds with managers capable of taking advantage of market distress.	Commitments to Cerberus and Oaktree are blind-pool opportunistic funds that are well positioned to take advantage of market distress and volatility.
Increase Industrial Exposure	Industrial: Consider increasing exposure to strategies that are complementary to those of LACERS' Core Industrial holdings, which currently represent the majority of LACERS' exposure to the property type.	Townsend is evaluating both core and non-core Industrial strategies for inclusion in LACERS' portfolio.
Increase Non-Core Apartment Exposure	Increase Non-Core Apartment exposure with a best-in-class manager.	LACERS' Board approved a \$50 million commitment to Waterton Residential Property Venture XIV.
Evaluate Increasing Ex-U.S. Exposure	Evaluate Non-Core diversification and consider an ex-U.S. strategy if a compelling thematic opportunity is available.	Commitments to Cerberus and Oaktree contain meaningful ex-U.S. target exposures.

Market Update: Real Estate Four Quadrants Summary

September 14 – October 9

TOWNSEND® GROUP
an Aon company

Real Estate Private Equity

- Most open-end fund managers continue to limit redemptions to preserve cash and protect assets. Redemption queues remain elevated, continuing to stand at roughly $16.5 billion for NFI-ODCE Funds (7% of the total index value).
- Open-end funds reported rent collections increased from approximately 80% in April to approximately 90% in September, with retail rent collection significantly increasing by more than 30% in that same time period.
- Though very early, indications are pointing to a slightly positive third quarter total gross return for NFI-ODCE, with a preliminary gross return of 0.40%.
- With nearly all of the closed-end funds having reported results for 2Q20, indications point to an average decrease in value of 2.8%. There is a wide disparity in reported results, with just over half adjusting values negatively (approximately one in ten with double digit write-downs).
- Global investment volume fell in 2Q20 to its lowest quarterly total since 2010. This reflects the impact of lockdowns and various controls put in place to combat the pandemic. Investment volume is expected to remain lower through the second half of 2020 but to recover significantly in 2021.

Real Estate Public Equity

- Although REITs were shielded from the stock market turmoil during the first three weeks of September, the FTSE NAREIT All Equity total return index dropped by 2.3% during the last week of September.
- Negative returns were triggered by general worry about economic expansion during the COVID-19 pandemic.
- Despite the challenging conditions for REIT stocks during the end of September, September as a whole saw REITs outperform both the S&P 500 and Russell 1000 indexes with month-to-date returns of -4.3% for the FTSE NAREIT All Equity total return index compared with -5.7% and -5.5% for the S&P 500 and Russell 1000, respectively.
- Similar to the previous months, the REIT sectors most affected negatively by the social distancing rules and lockdowns during the pandemic are retail, lodging and diversified which are down by 40.5%, 50.4% and 34.8% YTD, respectively.
- On the other hand, the sectors most sheltered from effects of the COVID-19 pandemic continue to be infrastructure and data centers generating 12.5% and 23.8% in total returns YTD, respectively.

Real Estate Private Debt

- Uncertainty remains for a number of private real estate lenders. Spreads have retrenched from their pandemic highs; however, distressed selling has yet to overwhelm the market. A prolonged pandemic coupled with economic shut-downs may lead to distressed selling and widen spreads from their current levels.
- Real estate sectors that have not seen an outsized negative impact from the pandemic are able to achieve a very low cost of debt. This affordable and readily available debt assists values for many sectors, specifically industrial, multifamily, and single family rental.
- Excess spreads on private real estate debt are attractive when compared to corporate bonds, as investment grade bond yields are reaching all-time lows. For example, the excess spreads for 5-year A-rated credit for a real estate loan is approximately 125 bps greater than comparable corporate bonds. Similarly, negative real rates of return make for a compelling argument to invest in real estate debt.

Real Estate Public Debt

- The credit curve continues to flatten in response to stronger economic data.
- Credit spreads in junior tranches remain wide with BBB bonds trading at spreads of 500 to 550 bps, in line with B+ rated corporate bond spreads.
- Excess spreads over comparable corporate bonds remains attractive across the curve. However, spreads are sensitive to upbeat pricing in corporate bonds (policy influenced) that are trading 100 to 150 bps tighter on a historical, cycle-adjusted (early phases of a recovery) basis.
- Anecdotally, volatility is expected to be event driven leading into the remainder of 2020. Uncertainty around the November election may sideline investors who would otherwise be active in the market. Also, an increase in COVID-19 cases could pose a threat to risk-on assets such as BBB conduit CMBS.

*Source: Green Street Advisors, NAREIT, NCREIF, Townsend

Market Update: Property Type Summary
September 14 – October 9

Property Type	Market Sentiment	Commentary
Multifamily	↑	Multifamily has entered a fragmented landscape at a fast pace as of late due to uncertainty around Government's responsiveness to additional stimulus. Going into the pandemic Class C multifamily properties performed well as their tenant base sustained above average rent growth. In today's market, investment managers of Class C multifamily express a growing concern as some tenants have begun to pay their rent with credit cards. Class A and Class B multifamily is supported by stronger fundamentals and a lack of supply, respectively. A growing desire to relocate from urban multifamily has, and should continue to be tailwind for suburban Class A and B multifamily properties.
Office	↔	Historically, the office sector has been the property type with the highest correlation to the economic cycle. As we have seen work from home trends not only increase as a result of stay at home orders, but continue, there is an expectation that office space will de-densify through larger square footage office leases. Internationally, in some East Asian countries, continued work from home trends are unlikely due to small living spaces. Comparably, in the US it is likely that more office tenants will move to suburban markets in order to take advantage of the larger space.
Industrial	↑	E-commerce continues to drive demand for warehouse space, especially in light of the need for an online presence for many retailers due to social distancing. In the longer term, industrial should prosper from the continued and elevated shift in e-commerce shopping habits, but short term demand will likely face some challenges due to the variety of underlying tenants. Large and infill industrial REITs are trading at a premium to private market valuations, showing that the market has high conviction for the e-commerce driven demand.
Retail	↓	While retail has continued to suffer, there has been a bounce back in rent collection. Per NCREIF, rent collection has jumped to 70.5%. This can be attributed, in part, to the expiration of rent deferral agreements. Many tenants had agreements to halt rental payments until stores re-opened. While some tenants are still requesting deferrals and abatements, many retail tenants are now back to paying full rent.
Hotel	↓	The Palmer House Hilton in Chicago is an example of higher risk business plans stressing operations in the current pandemic. Outsized leverage used to refurbish the hotel led to an outsized debt service the previous owners were not able to keep up with. This resulted in a foreclosure of the hotel, a trend that may continue if the pandemic persists well into 2021. Urban hotels with a heavy reliance on travel and conferences continue to suffer compared to their suburban peers, which have benefited by locals looking for a short and safe weekend getaway.
Other	↔	<u>Life Sciences</u>: Rent collections of life science properties remains high as the demand for these properties has been relatively unscathed. Life sciences tenants tend to be fairly "sticky" as their offices require a heightened amount of CapEx when compared to a typical office building. <u>Student Housing</u>: As Colleges and Universities across the nation begin to pivot to a virtual learning model as a result of on campus outbreaks, owners of student housing properties have begun to feel the pressure. Anecdotally, opportunistic investment managers of student housing have started to capitalize on distressed properties with strong fundamentals such as less expensive public schools offering degrees across the bachelors and masters programs with an emphasis on a low exposure of international students.

*Source: Green Street Advisors, NCREIF, Evercore, IREI, CBRE, CNBC, Townsend
Townsend's views are as of this date of this publication and may be changed or modified at any time without further notice

TOWNSEND® GROUP
an Aon company

COVID-19 Is Likely To Create Dislocation/Distress Across Many Sectors

Sectors	Potential dislocation
Hotels	• Occupancy levels remain low as travel is restricted and on the margin some part of demand may be permanently impaired, however, as travel comes back, well-located assets may sustain their income earning potential and hence their value
Student housing	• Student population on campuses has dropped as temporary shift to online learning, aversion to virus exposure, and international travel restriction continues • However, most students still prefer to be on campus and as we emerge on the other side of this pandemic, the demand for well-located good assets is likely to return • Student housing continues to be selectively appealing, with asset quality, proximity to campus, and school quality being the primary differentiating factors
Office	• Work-from-home will likely reduce demand for office space, however, office assets located in desirable growth areas are likely to gain momentum, especially those that conform to new distancing norms • While demand for office space may be moderately impacted due to economic contraction and WFH, distressed investment opportunities (if they arise) may offer attractive entry point
Senior housing	• Given that many senior facilities saw outbreak of Covid-19, the demand for such assets is likely to remain low, however, necessity based demand for highest quality assets may return
Debt	• High yield debt interest rates have gone up due to risk aversion, however, debt for good quality collateral remains readily available and low yielding

Impact Of Pandemic On Real Estate Investment Strategy

TOWNSEND® GROUP
an Aon company

Accelerating pre-COVID-19 trends

- Technology was already reshaping our living, working shopping and socializing habits
- Now, our reliance on technology increased significantly, accelerating many pre-COVID trends

Disruption effects of COVID-19

- The pandemic has led society to rethink living and working arrangements, shaping new preferences that may restructure demand for real estate
- Technology tools (like adequate bandwidth, conferencing software, wide availability of laptops across the workforce) that enable work-from-home may reshape the future work environment and, consequently, living preferences

Dislocation effects of COVID-19

- Global to local shift, globalization came under scrutiny when supply chains faltered during the pandemic and a number of countries/companies are calling for supply chain reshoring
- Travel restrictions and near-term impact of COVID-19 has had a disproportionate effect on select parts of the economy; real estate assets servicing those sectors are operationally challenged which is creating distress
- Since many of these assets fulfill important societal needs, over time many of them are likely to witness value appreciation leading to good tactical investment opportunities

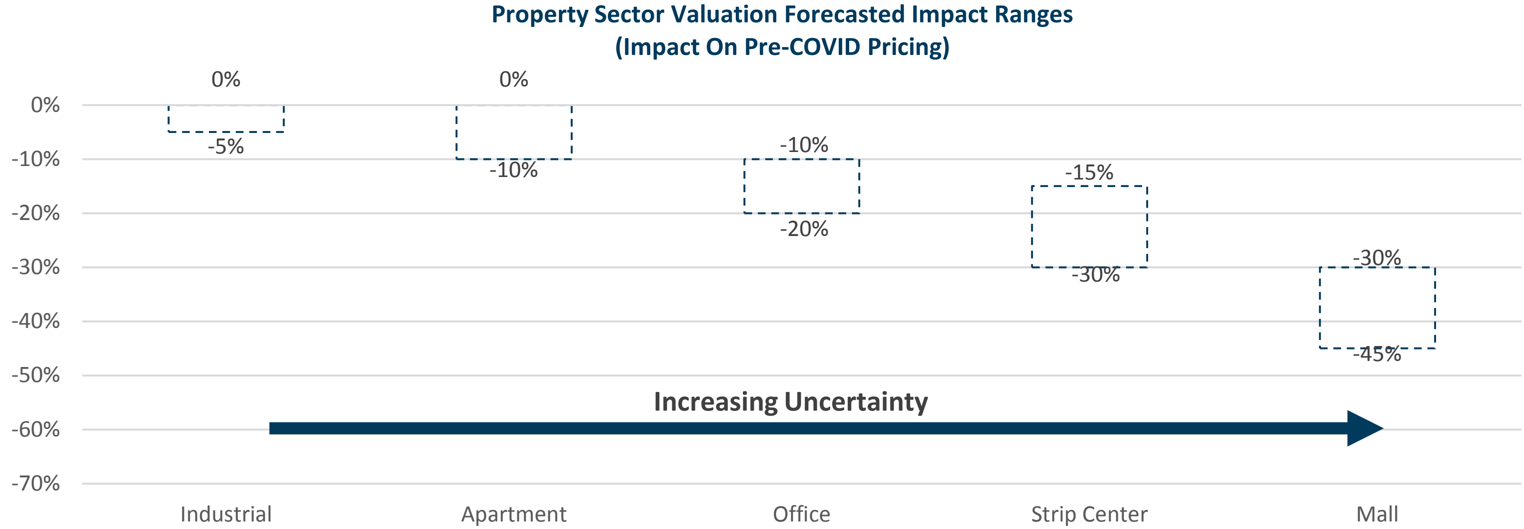
Investment Principles For An Uncertain Environment

TOWNSEND® GROUP
an Aon company

- COVID-19 and the resulting economic uncertainty remains at the top of mind. Navigating a higher risk environment relies on investors staying disciplined and rational in their approach. An uneven recovery path and differentiated impact by property sector has resulted in a unique time within commercial real estate. The following principles provide a guidance in the uncertain environment:
- **Re-evaluate sub-sector and sub-market driven themes**
  - For example, urban living has been challenged by COVID-19 and social unrest, and initial anecdotal evidence indicates a shift away, but it is yet to be seen if this is an immediate reaction to COVID-19 or a long-term trend that will reshape living preferences over the next decade
- **Identify the difference between discounted high quality assets/sectors and value traps**
  - While the recovery path is uncertain, it is our view that the lodging sector may likely recover as COVID-19 fades
  - Retail assets may be permanently resetting to a new lower basis and may need to accommodate a decline in tenants by lowering occupancy costs ratios (and thus rent!); near-term capital outlays may be higher as space is re-leased
- **Declining cost of debt forecasted to support asset valuations, but periods of uncertainty warrant more resilient and conservative capital structures**
  - Property sectors with higher operating leverage and major cash flow disruptions may warrant all equity acquisitions and sufficient capital reserves to endure an extended period of disruption
- **Invest with established sponsors that have demonstrated a breadth of strong capabilities and discipline**
  - A wide range of outcomes and resulting opportunities warrants flexibility
- **Commit capital to vehicles/structures that can react quickly and are well capitalized**
  - Blind pool opportunistic funds with broad mandates appear to be in an ideal environment/vintage year
- **Increase return expectations to compensate for elevated risk**

TOWNSEND® GROUP
an Aon company

Short-term Real Estate Outlook



- Townsend created go forward scenarios for each property sector, taking into account the following:
  - Property sector forecasts derived from GDP forecasts based on historical relationships
  - Quantified increasing or decreasing demand based on property sector specific trends
  - Effects of past downturns on each property sector
- The forecasted outcomes vary widely, and even the most impacted property sectors may likely still present opportunities within niches
- Distress may or may not appear within the magnitude presented above, but the analysis provides a framework to reference during a period of limited price discovery

United States Real Estate Market Update (2Q20)

TOWNSEND® GROUP
an Aon company

General

- On March 13, President Trump declared a national emergency. National, state, and local governments across the world implemented stay-at-home orders, which caused a near complete halt of the world economy. governments have dramatically expanded expenditures in order to protect people and businesses from large-scale disruption. In the 2nd quarter, equity markets bounced back from the March rout, and the S&P 500 produced a gross total return of 20.0%. The MSCI US REIT index rebounded and produced a return of 10.7% but remains down -20.0%.

- The U.S. entered a recession in February; GDP grew at an annualized rate of -32.9% in the 2nd quarter. Initial jobless claims reached 10 million in March alone, while the unemployment rate peaked in April at 14.7% but declined to 11.1% by quarter end. The Federal Reserve has acted aggressively via quantitative easing and rate cuts, thus far financial markets have stabilized. The CARES Act provided $1.5 trillion of stimulus to the economy. The International Monetary Fund has projected that the world economy will shrink by 4.9% in 2020.

Commercial Real Estate

- Shelter in place orders and social distancing have restricted the ability to complete due diligence and acquire assets. Transaction volume has declined by nearly 50% over the last 6 months. Transactions have primarily occurred in the apartment and industrial sectors.

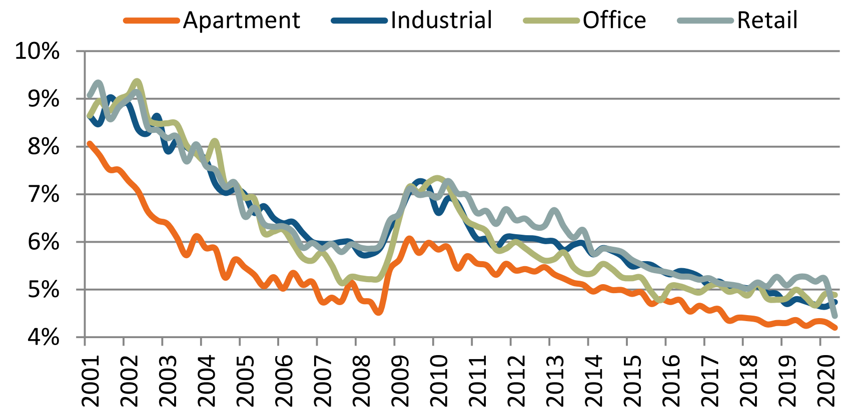
- Private real estate market carrying values contracted marginally over the quarter. Transaction cap rates (5.5%) expanded 12 bps during the quarter. Current valuation cap rates declined due to a reduction in cash flows, apartments (-12 bps), office (-2 bps), and retail (-77 bps). A lack of transactions has limited evidence to revalue real estate.

- NOI growth has substantially diverged between property sector due to the impacts of COVID-19. Retail NOI contracted substantially (-3273 bps) as rent collections declined and retailers were shutdown. The retail sector has seen rent collections of 30-50% vs. more than 85% in the other major sectors. Public market signals have been divergent by property type.

- In the second quarter of 2020, $44 bn of aggregate capital was raised by real estate funds. There continues to be substantial dry powder,~$322 billion, seeking exposure to private real estate.

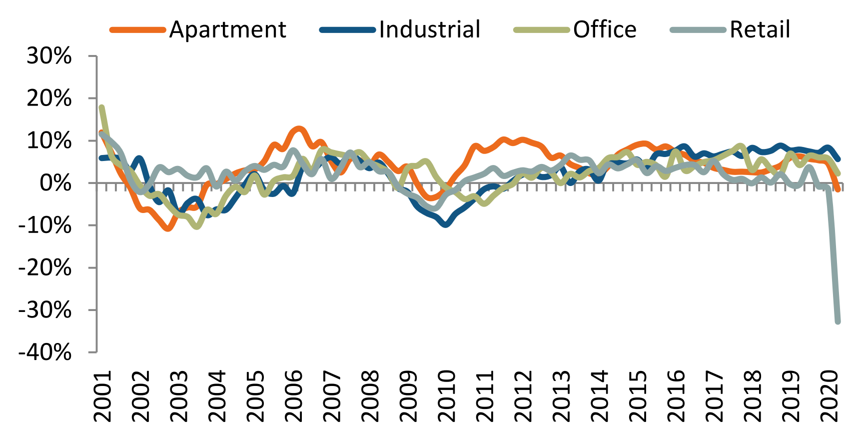
- 10-year treasury bond yields remained approximately flat 0.7% during the quarter.

Current Value Cap Rates by Property Type



Source: NCREIF

4 Qtr Rolling NOI Growth



Source: NCREIF

Sources: Bureau of Economic Analysis, U.S. Census Bureau, St. Louis Fed, NCREIF, Real Capital Analytics, Bloomberg LP., Preqin

United States Property Matrix (2Q20)

TOWNSEND® GROUP
an Aon company

INDUSTRIAL

- In 2Q20, industrial properties were the highest returning sector at 1.0% and outperformed the NPI by 200 bps.
- Transaction volumes fell to $12.3 billion in the second quarter of the year, a 40.0% year-over-year decrease. Individual asset sales were down 41.8% year-over-year, while portfolio purchases turned in a year-over-year volume decrease of 28.0%. The portfolio transaction volume continued to regress to the mean growth rate in 2Q20 following a second half of 2019 that was full of astronomical growth.
- The industrial sector turned in NOI growth of 5.6% over the past year, significantly decreasing from the prior periods TTM growth of 8.3% in 1Q20. Market rent growth is expected to decelerate compared to its recent pace, but still remains very strong.
- Vacancy increased by 26 bps year-over-year to 3.4%, still remaining close to all-time historic lows. E-commerce continues to drive demand.
- Industrial cap rates compressed approximately 6 bps from a year ago, to 4.74%. Industrial fundamentals still top all property sectors.

MULTIFAMILY

- The apartment sector delivered a -0.6% return during the quarter, outperforming the NPI by 35 bps.
- Transaction volume in the second quarter of 2020 fell to $15.0 billion, a decrease of 68.0% year-over-year. This volume continues to make multifamily the most actively traded sector for the twelfth straight quarter.
- Cap rates decreased to 4.20%, compressing 16 bps year-over-year. Multifamily cap rates have falling to their lowest in years.
- The multifamily sector has seen increasing vacancy rates due to the pandemic but has still held steady relatively speaking, vacancy has increased 175 bps from a year ago. The aging millennials have begun shifting their desires to suburban living but continued home price appreciation has deterred the full effect of this migratory trend.

OFFICE

- The office sector returned -0.5% in 2Q20, 50 bps above the NPI return over the period.
- Transaction volumes decreased by 70.0% year-over-year in Q2. Annual sales volumes equaled $11.6 billion for the quarter. Single asset transactions accounted for 87% of volume.
- Occupancy growth within the office sector has slowed, decreasing by 44 bps year-over-year. Office continues to be the highest vacancy property type at close to 10.2%.
- NOI growth of 2.3% in the last year is a negative for the sector as this is a decrease of 350 bps from 1Q20. Due to a number of work from home orders put in place at the end of the first quarter that have remined in place, NOI growth is expected to continue trending downward.
- Office cap rates compressed from a year ago to approximately 4.89% in the second quarter. Office-using job growth was hit significantly hard in the first quarter and continued into the second. Many work from home policies continued through the second quarter. Substantially slowing overall office growth.

RETAIL

- As of 2Q20, the retail sector delivered a quarterly return of -3.9%, performing 285 bps below the NPI.
- Transaction volumes totaled $5.0 billion in the second quarter, falling 71.0% year-over-year. Single asset transactions accounted for just over 91% of all sales volume.
- Cap rates have compressed approximately 80 bps within the sector over the last year, to 4.45%.
- NOI growth significantly decreased, -32.7% over the last year. This is a 31.2% decrease from last quarter. Retail is expected to continue to suffer from the shift towards e-commerce and the recent shelter in place orders.
- Retail vacancy rates increased 114 bps over the past year to 7.9%. Many big box stores have closed as the need for retail space shrinks, translating to a negative outlook for rent growth. Paired with the global economic crisis that has had a significant negative impact on this sector.

Sources: Real Capital Analytics, Green Street, NCREIF

TOWNSEND® GROUP
an Aon company

Global Real Estate Market Update (2Q20)

- Global investment activity during the second quarter of 2020 was significantly down relative to the same period in 2019 and reached the worst quarterly level since 2Q 2009. Although transaction volumes fell during 2Q 2020, the New York, Los Angeles, San Francisco metro markets continued to witness the greatest transaction volume.
- Rising COVID cases across the world caused lockdowns across major economies resulting in a short but deep recession and affecting all sectors of the real estate industry. Uncertainty about the state of the economy threw some doubts on the future needs for certain property types.

Global Total Commercial Real Estate Volume - 2019 - 2020

$ US Billions	Q2 2020	Q2 2019	% Change Q2 20 - Q2 19	H1 2020	H1 2019	% Change H1 20-H1 19
Americas	40	124	-68%	162	224	-28%
EMEA	55	80	-31%	132	146	-10%
Asia Pacific	211	271	-22%	331	460	-28%
Total	306	474	-36%	624	830	-25%

Source: Real Capital Analytics, Inc., Q2' 20

- Investment activity in the Americas witnessed a sharp decline and fell by 68% year-over-year. COVID cases continued to increase in the US, putting plans of fully reopening the economy on hold. In the US, transaction volume decreased by 70% compared to the same quarter last year.
- In the Asia Pacific region, volumes declined but transaction activity was mixed across the region. China witnessed a strong investment quarter recovering from a severe plunge over the previous period. Japan continued to be the regions' largest investment market. Conversely, transactions fell in both Australia and Singapore.
- Although investment activity dropped in the EMEA region, Europe appeared to be more in control of the outbreak. Germany witnessed a 15% growth in the quarter as several apartment megadeals closed. In addition, Denmark saw a substantial increase of 74% in sales compared to the same quarter last year. On the other hand, both France and Netherlands recorded declines in transactions.
- All sectors were impacted by the spread of the pandemic but the hotel and retail sectors were affected the most
- In the office sector, global leasing activity declined by 59% year-over-year and vacancy rates begun to increase in all regions. The declines represent an uncertainty about future office space needs. The US witnessed a 65% decline in leasing activity. Across the main European markets, demand for office space is excepted to fall by 40%. In the APAC region, net absorption is anticipated to decrease by 40% to 50%.
- The retail sector continued to suffer globally as the shutdowns and social distancing measures of the COVID-19 outbreak posed challengers for operators. Vacancy rates increased as rents and NOI continued to compress. Retailers that were able to adapt their strategy to the digital world witnessed a recovery in sales.
- Despite the multifamily market recording a significant decrease in investments globally, the sector remains the most liquid in commercial real estate highlighting its attractiveness. In the U.S., rents fell by approximately 1% and demands fell. However, in Europe effective rent rates were stable. On the other hand, the APAC region recorded a stronger sales performance as cities like Beijing and Shanghai attracted home buyers.
- While the industrial market was affected by short-term headwinds from the recession as global vacancy recorded a slight uptick of 8.2%, the sector remains resilient Despite the slowdown in the construction of industrial properties at the beginning of the year, new development resumed during the second quarter.

Global Outlook - GDP (Real) Growth % pa, 2020-2022

	2020	2021	2022
Global	**-3.9**	**5.1**	**3.5**
Asia Pacific	**-0.7**	**4.8**	**4.6**
Australia	-3.9	3.0	3.2
China	2.0	8.0	5.5
India	-5.5	7.2	
Japan	-5.3	2.5	1.3
North America	**-5.4**	**3.8**	**2.8**
US	-5.0	3.7	2.8
MENA*	**-4.1**	**3.1**	**3.3**
European Union	**-8.0**	**5.6**	**2.6**
France	-10.0	7.0	2.7
Germany	-6.0	5.0	2.4
UK	-9.9	6.4	2.8

*Middle East North Africa
Source: Bloomberg

Sources: Jones Lang LaSalle Research, Real Capital Analytics, Inc., CBRE

Exhibit C: Glossary

TOWNSEND® GROUP
an Aon company

Cash Flow Statement

Beginning Market Value:	**Value of real estate, cash and other holdings from prior period end.**
Contributions:	Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).
Distributions:	Actual cash returned from the investment, representing distributions of income from operations.
Withdrawals:	Cash returned from the investment, representing returns of capital or net sales proceeds.
Ending Market Value:	The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).
Unfunded Commitments:	Capital allocated to managers which remains to be called for investment. Amounts are as reported by managers.
Remaining Allocation	The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

Style Groups

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.	
Core:	Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).
Value-Added:	Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage (typically between 40% and 65%).
Opportunistic:	Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage (typically between 50% and 65% or higher), distressed properties.

Indices

TOWNSEND® GROUP
an Aon company

Stylized Index:	**Weights the various style group participants so as to be comparable to the investor portfolio holdings for each period.**
Open-End Diversified Core Equity Index (“ODCE”):	A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (25 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.
NCREIF Timberland Index (“NTI”):	National Index comprised of a large pool of individual timber properties owned by institutions for investment purposes.
NCREIF Property Index (“NPI”):	National Property Index comprised of core equity real estate assets owned by institutions.

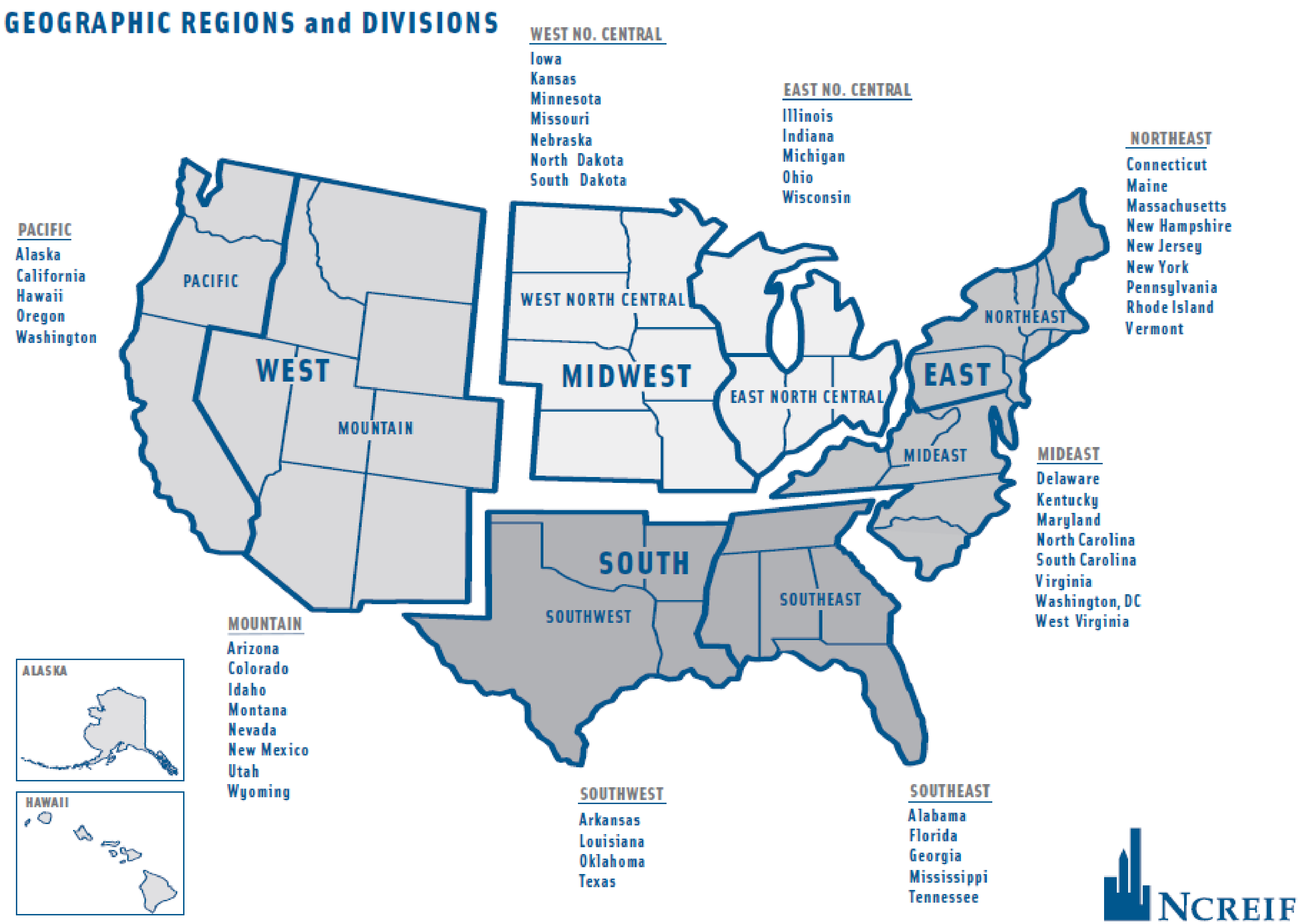
TOWNSEND® GROUP
an Aon company

Performance

Income Return ("INC"):	**Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)**
Appreciation Return ("APP"):	Increase or decrease in investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value or uncollectible accrued income, or realized gain or loss from sales.
Total Gross Return ("TGRS"):	The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.
Total Net Return ("TNET"):	Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.
Inception Returns[1]:	The total net return for an investment or portfolio over the period of time the client has funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.
Net IRR:	IRR after advisory fees, incentive and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.
Equity Multiple:	The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

[1] Portfolio level returns include historical returns of managers no longer with assets under management.
All returns are calculated on a time-weighted basis.

TOWNSEND® GROUP
an Aon company



Aksia LLC

Private Equity Portfolio Performance Report
As of June 30, 2020

Aksia
New York • London • Tokyo

www.aksia.com

Aggregate Portfolio Summary As Of June 30, 2020

- As of June 30, 2020 the aggregate portfolio's fair market value of $2.2 billion represents 12.6% of Total Plan Assets

Aggregate Portfolio Private Equity Exposure Summary	
Total Plan Market Value	$17,688,591,960
Private Equity Exposure Target (%)	14.0%
Private Equity Exposure Target ($)	$2,476,402,874
Private Equity Exposure (%)	12.6%
Fair Market Value ("FMV")	$2,222,304,621

- As of September 30, 2020 Total Plan Assets had increased to ~$19.2 billion – which translates into ~11.6% exposure to private equity (based on private equity Fair Market Value as of 6/30/20)

Aggregate Portfolio Snapshot – Year Over Year

- LACERS has committed $5.4 billion to 290 partnerships since the inception of its private equity program in 1995; 234 of those partnerships remain active as of 6/30/20
- Distributions for the first half of year ($231mm) slightly outpaced contributions for the same time period ($119mm)
- The fair market value of the portfolio increased by $194 million over the last twelve months
- The aggregate portfolio has generated a total value of 1.53x and a Net IRR of 10.9% since inception

Aggregate Portfolio Snapshot ($ millions)			
Portfolio Since Inception	6/30/20	6/30/19	Change (+/-)
Partnerships	290	270	+ 20
Active	234	223	+ 11
Inactive	56	47	+ 9
Sponsors	115	125	+ 9
Investment To Date Contributions	$4,037	$3,630	+ $407
Investment To Date Distributions	$3,884	$3,591	+ $293
Fair Market Value	$2,222	$2,028	+ $194
Fair Market Value + Distributions	$6,106	$5,523	+ $583
TVPI[1]	1.53x	1.56x	- 0.03x
Net IRR	10.9%	11.3%	- 0.4%

1. Total Value to Paid In Capital ("TVPI"): (Cumulative Distributions + Fair Market Value – Cumulative Recallable Capital) / (Cumulative Contributions – Cumulative Recallable Capital)

The Aggregate Portfolio Can Be Grouped Into Vintage Year Buckets

- "Mature" bucket ($183.0 million of fair market value with vintage years ranging from 1995-2009)
  - Minimal change year over year with respect to Net TVPI and Net IRR
  - Will have limited impact going forward given the small value relative to other buckets

- "Maturing" bucket ($1,194.8 million of fair market value with vintage years ranging from 2010-2015)
  - Net TVPI decreased .02x while the Net IRR fell by ~1.9%
  - Potential for growth or decline to occur in these investments
  - Bulk of any near-term distributions are likely to come from the "Maturing" bucket

- "Developing" bucket ($844.5 million of fair market value with vintage years ranging from 2016-2020)
  - Net TVPI increased .04x while the Net IRR fell by ~0.3%
  - Significant potential for growth or decline to occur in these investments
  - Bulk of the near-term contributions are likely to come from the "Developing" bucket

$'s in millions

Vintage Years	LTM[1] Contributions	ITD[1] Contributions	LTM[1] Distributions	ITD[1] Distributions	Fair Market Value	6/30/20 Net TVPI	Year Over Year Change Net TVPI	6/30/20 Net IRR	Year Over Year Change Net IRR
Mature (1995-2009)	$2.71	$1,878.80	$54.82	$2,864.22	$183.01	1.62x	-0.01x	10.4%	-0.1%
Maturing (2010-2015)	$78.79	$1,385.07	$201.60	$950.34	$1,194.83	1.59x	-0.02x	12.8%	-1.9%
Developing (2016-2020)	$325.39	$773.33	$36.61	$69.35	$844.46	1.19x	0.04x	12.4%	-0.3%
Total Portfolio	$406.89	$4,037.19	$293.03	$3,883.91	$2,222.30	1.53x	-0.03x	10.9%	-0.3%

[1] Last 12 Months ("LTM") and Inception to Date ("ITD")

10 Largest Sponsor Relationships (by total exposure)

- The top ten Sponsors by exposure account for 34.0% of aggregate portfolio exposure and 23.0% of aggregate portfolio commitments

Firm	Number of Funds	Commitment	% of Total Comm	Exposure (FMV + Unfunded)	% of Total Exposure	TVPI	Net IRR
Vista Equity Partners	8	$215,000,000	4.0%	$228,234,045	6.1%	2.10x	21.7%
Thoma Bravo	8	$150,000,000	2.8%	$191,398,481	5.1%	1.96x	26.7%
Advent International	5	$145,000,000	2.7%	$134,093,063	3.6%	1.61x	15.7%
ABRY Partners	6	$145,000,000	2.7%	$128,541,592	3.4%	0.99x	-0.5%
Technology Crossover Ventures	5	$104,500,000	1.9%	$105,644,192	2.8%	2.12x	15.8%
Spark Management Partners	7	$93,750,000	1.7%	$105,373,909	2.8%	2.34x	26.9%
New Enterprise Associates	4	$95,000,000	1.8%	$104,230,041	2.8%	1.60x	15.3%
Platinum Equity	4	$112,500,000	2.1%	$100,448,098	2.7%	1.45x	24.8%
Hellman & Friedman	6	$100,463,972	1.9%	$90,864,611	2.4%	2.02x	20.0%
TA Associates	5	$86,000,000	1.6%	$90,249,815	2.4%	2.19x	20.5%

New Investments made in 1H 2020

Commitments – 1/1/20 – 6/30/20						
Closing Date	Sponsor	Partnership	Fund Size[1]	New or Existing	Investment Strategy	Commitment Amount ($million)
1/29/2020	**Vista Equity Partners**	Vista Foundation Fund IV	$3,250	Existing	Medium Buyouts	$30.0
1/31/2020	**MBK Partners**	MBK Partners Fund V	$5,000	New	Large Buyouts	$40.0
3/13/2020	**Hg Capital**	Hg Genesis 9 HgCapital Saturn Fund 2	€3,000 $2,750	New	Medium Buyouts Large Buyouts	€17.5[3] $20.0
3/24/2020	**General Catalyst Group Management**	General Catalyst Group X – Early Venture General Catalyst Group X – Endurance General Catalyst Group X – Growth Venture	$600 $700 $1,000	New	VC-Early Stage VC-Multi-Stage Growth Equity	$10.0 $11.7 $16.7
5/12/2020	**OceanSound[2]**	OceanSound Partners Fund	$550	New	Medium Buyouts	$20.0
5/22/2020	**CVC Capital Partners**	CVC Capital Partners VIII	€17,500	Existing	Large Buyouts	€45.8[4]
5/27/2020	**Thoma Bravo**	Thoma Bravo Fund XIV Thoma Bravo Discover Fund III Thoma Bravo Explore Fund I	$14,000 $3,000 $1,000	Existing	Large Buyouts Medium Buyouts Small Buyouts	$30.0 $20.0 $10.0
6/26/2020	**Vitruvian Partners**	Vitruvian Investment Partnership IV	€3,750	New	Medium Buyouts	€35.2[5]
Total	8	13				~$317.0

[1] Based on target fund size.
[2] Qualifies as an Emerging Manager based on LACERS' definition.
[3] Commitment made in Euros – translates into roughly $20.0 million based on 2/12/20 Fx rate.
[4] Commitment made in Euros – translates into roughly $50.0 million based on 4/15/20 Fx rate.
[5] Commitment made in Euros – translates into roughly $40.0 million based on 6/4/20 Fx rate.

Commitment Statistics

- Commitments were made to 8 different Sponsors totaling ~$317 million in total commitments
  - Five commitments were made to three existing Sponsor relationships (~$140 million)
  - Eight commitments were made to five new Sponsor relationships (~$177 million)
  - The average commitment amount was ~$42 million per Sponsor (excluding Emerging Managers)

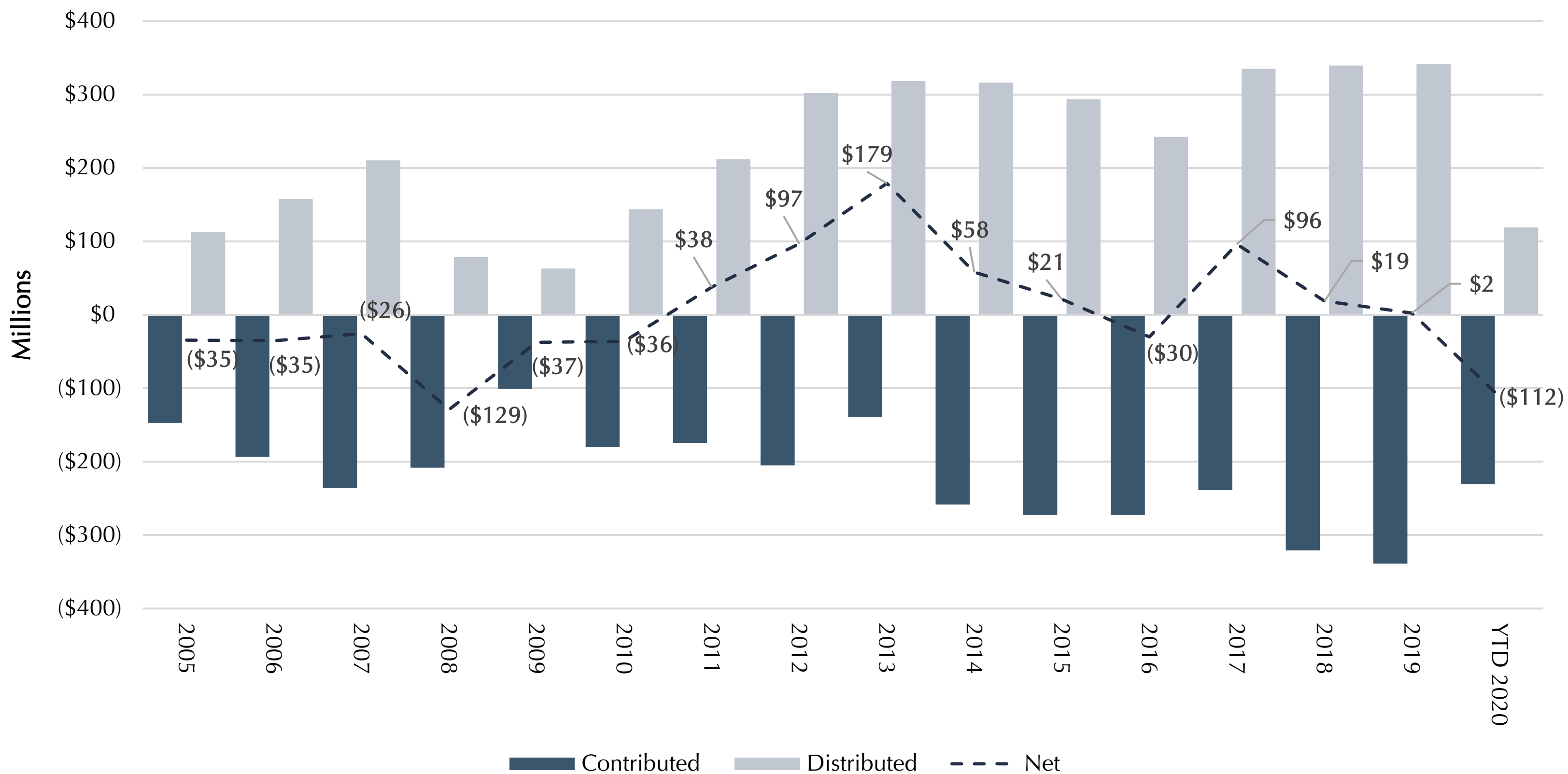
- ~88% of commitments went to Buyout focused firms and ~12% of commitments went to Venture Capital and Growth Equity focused firms
  - 'Large Buyouts' accounted for 44%, 'Medium Buyouts' for 41% and 'Small Buyouts' for 3%
  - 'Growth Equity' accounted for 5% of commitments, 'Multi-Stage VC' for 4%, and 'Early Stage VC' for 3%

- 3 commitments totaling ~$109 million (USD) were made to Sponsors that exclusively target European businesses; another $20 million (USD) was committed to a Sponsor targeting~50% exposure to Europe
  - Commitments will help to achieve improved geographic diversity in accordance with the strategic plan

- 1 of the 8 Sponsor Commitments was made to a Sponsor that qualifies as an Emerging Manager under LACERS' definition

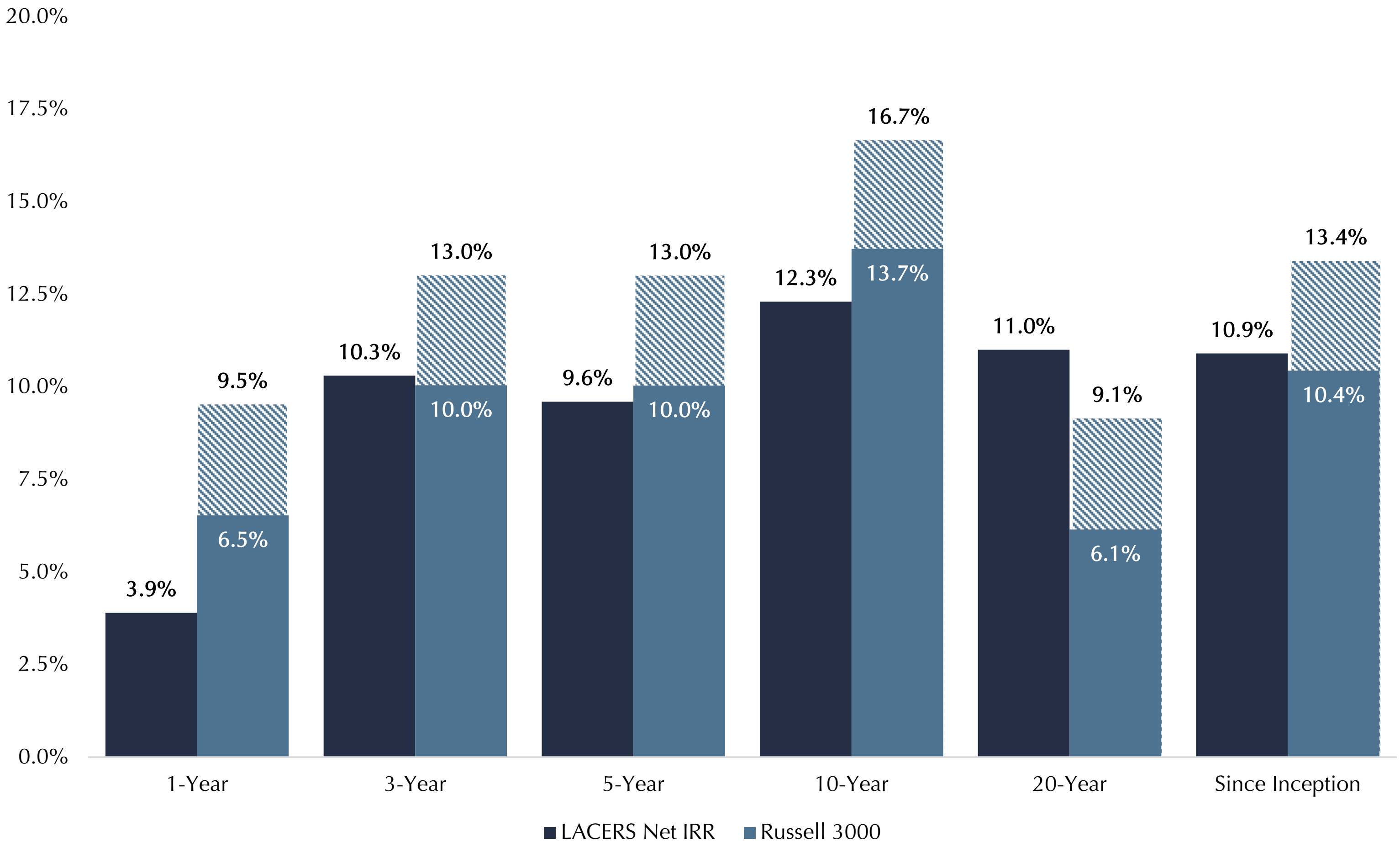
Private Equity Program Cash Flow Profile Over Time

- LACERS' private equity portfolio is relatively mature and has been largely cash flow positive over the last decade



Horizon Returns for LACERS' Private Equity Program vs. The Benchmark

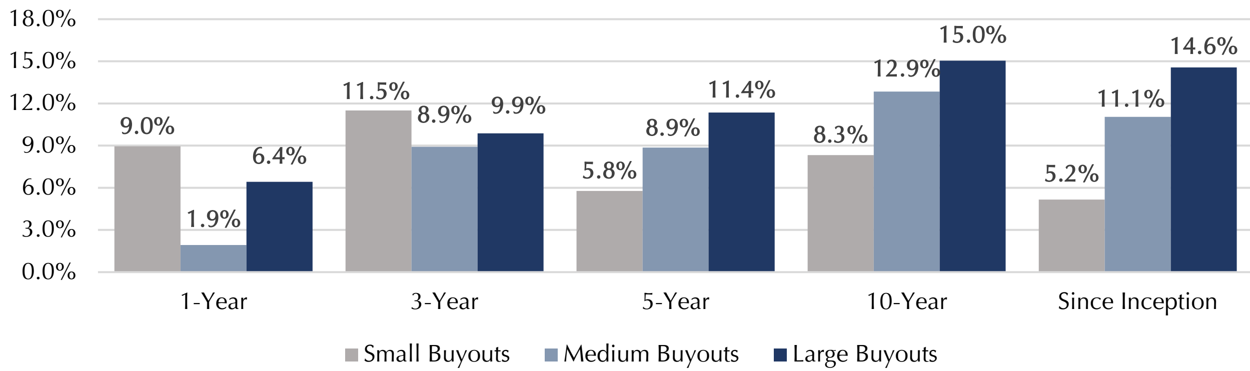
❖ LACERS' Benchmark is the Russell 3000 + 300bps

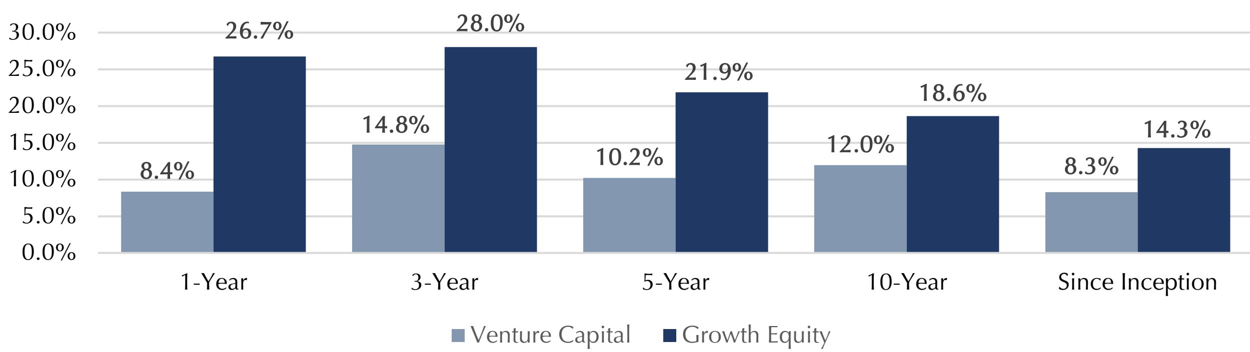


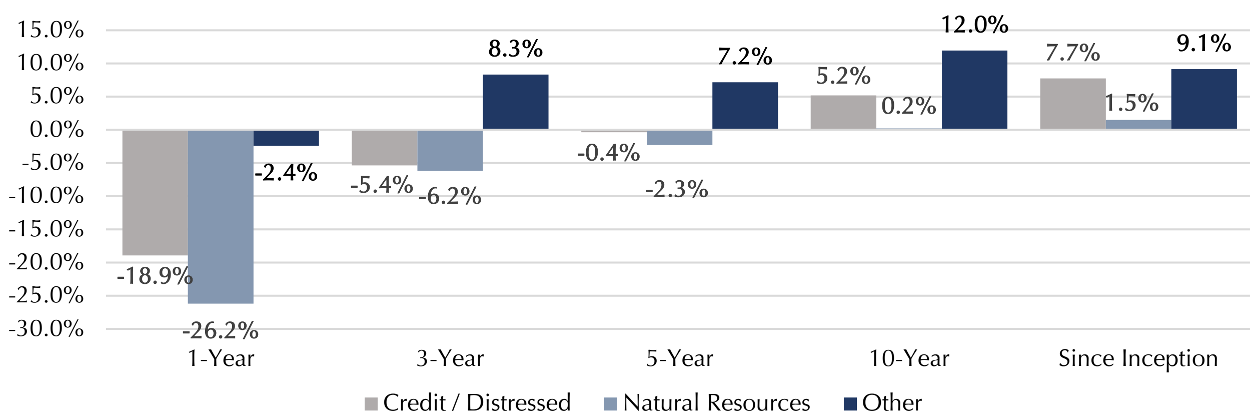
Performance by Strategy And Sub-Strategy

Sub-Strategy	Commitment	Contributions	Percent Called	Distributions	Percent Distributed	Fair Market Value	TVPI	IRR
Large Buyouts	$1,452,419,059	$1,056,961,551	72.77%	$1,214,785,060	83.64%	$543,957,465	1.68x	14.6%
Medium Buyouts	$1,705,693,387	$1,178,166,483	69.07%	$1,277,872,441	74.92%	$568,981,977	1.58x	11.1%
Small Buyouts	$220,600,561	$156,202,066	70.81%	$112,954,010	51.2%	$81,449,739	1.25x	5.2%
Buyouts Total	**$3,378,713,007**	**$2,391,330,101**	**70.78%**	**$2,605,611,511**	**77.12%**	**$1,194,389,181**	**1.60x**	**12.0%**
Growth Equity	$414,957,154	$295,823,165	71.29%	$207,054,081	49.9%	$353,635,172	1.91x	14.3%
Growth Equity Total	**$414,957,154**	**$295,823,165**	**71.29%**	**$207,054,081**	**49.9%**	**$353,635,172**	**1.91x**	**14.3%**
Early Stage Venture	$155,010,000	$104,810,836	67.62%	$126,058,985	81.32%	$105,335,767	2.21x	42.9%
Late Stage Venture	$135,000,000	$121,744,537	90.18%	$66,640,626	49.36%	$91,818,299	1.31x	5.0%
Multi-Stage Venture	$355,217,369	$283,871,379	79.91%	$220,087,125	61.96%	$164,405,501	1.35x	5.4%
Venture Total	**$645,227,369**	**$510,426,752**	**79.11%**	**$412,786,736**	**63.96%**	**$361,559,567**	**1.52x**	**8.3%**
Credit	$80,000,000	$62,374,446	77.97%	$14,058,431	17.57%	$42,922,332	0.90x	-5.8%
Distressed	$474,531,007	$403,602,495	85.05%	$384,035,738	80.93%	$111,562,359	1.27x	8.8%
Mezzanine	$35,000,000	$29,100,110	83.14%	$27,640,439	78.97%	$5,815,310	1.15x	4.0%
Credit / Distressed Total	**$589,531,007**	**$495,077,051**	**83.98%**	**$425,734,609**	**72.22%**	**$160,300,001**	**1.21x**	**7.7%**
Natural Resources	$330,000,000	$283,439,553	85.89%	$172,866,802	52.38%	$123,611,717	1.05x	1.5%
Natural Resources Total	**$330,000,000**	**$283,439,553**	**85.89%**	**$172,866,802**	**52.38%**	**$123,611,717**	**1.05x**	**1.5%**
Other - Fund of Funds	$20,000,000	$19,179,059	95.90%	$31,121,480	155.61%	$176,158	1.63x	7.4%
Other - Secondaries	$50,000,000	$41,917,836	83.84%	$28,733,996	57.47%	$28,632,824	1.43x	12.9%
Other Total	**$70,000,000**	**$61,096,895**	**87.28%**	**$59,855,475**	**85.51%**	**$28,808,982**	**1.50x**	**9.1%**
Total	**$5,428,428,536**	**$4,037,193,517**	**74.37%**	**$3,883,909,214**	**71.55%**	**$2,222,304,621**	**1.53x**	**10.9%**

Horizon Returns by Sub-Strategy



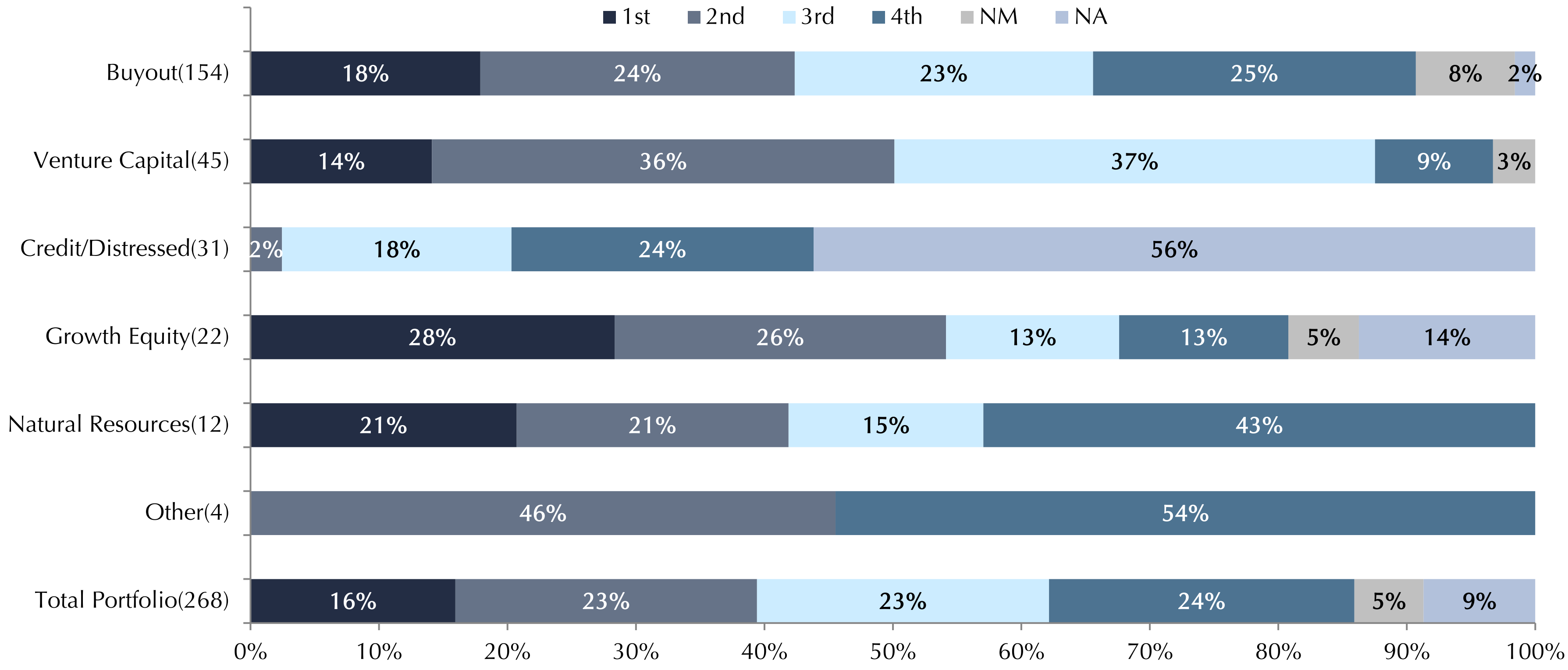




*The ‘Other’ category includes LACERS’ investments in Secondary Funds and Fund of Funds.

Portfolio Strategy vs. Cambridge Associates[1]

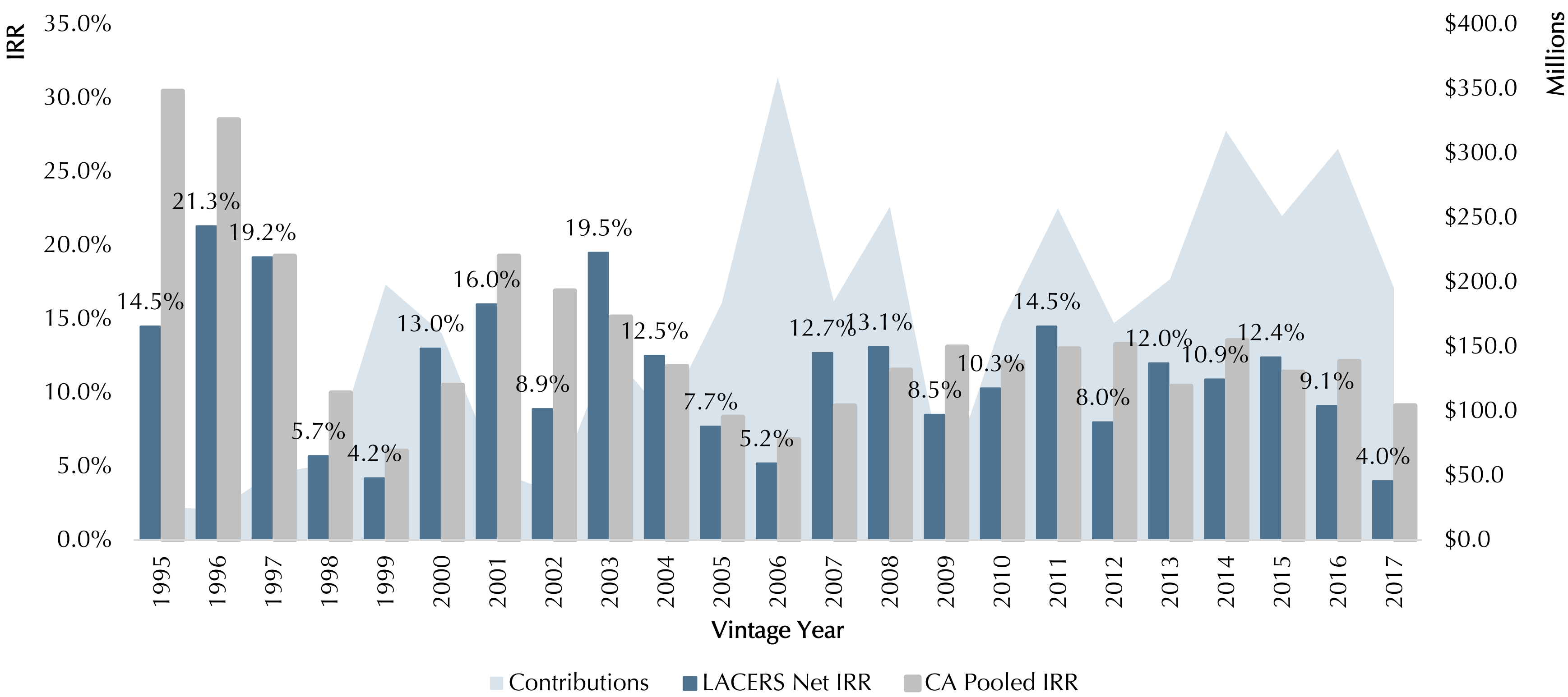
% of Contributed Capital as of March 31, 2020



[1]All quartiles are based on Cambridge Associates data as of March 31, 2020. Funds where corresponding benchmark data is not available from Cambridge Associates are categorized as "NA" and funds where the first capital call date is younger than two years are categorized as "NM". Funds with total commitments equal to zero are excluded from the calculation. Cambridge Associates data is continually updated and subject to change.

Portfolio Vintage Years vs. Cambridge Associates[1]

March 31, 2020



[1]Cambridge Associates pooled IRRs as of March 31, 2020. Pooled IRRs comprised of similar regions and strategies in the LACERS portfolio. IRRs of funds younger than two years are not considered meaningful and have been excluded.

Overall Exposure

- ❖Private Equity exposure was 12.6% as of June 30, 2020
- ❖Private Equity exposure target is currently 14.0%

Performance Since Inception

- ❖The Aggregate Portfolio has generated a Net IRR of 10.9% and a TVPI of 1.53x
- ❖The Core Portfolio has generated a Net IRR of 11.5% and a TVPI of 1.55x
- ❖The Specialized Portfolio has generated a Net IRR of 1.8% and a TVPI of 1.11x

Diversification

- ❖Geographic Diversification: Diversified across geographies with a bias towards North America
- ❖Sector Diversification: Diversified across sectors, with Information Technology representing the largest exposure
- ❖Vintage Year Diversification: Well diversified across vintage years

- Appendix – Fund By Fund Returns
  - Active Core Portfolio
  - Liquidated Core Portfolio
  - Active Specialized Portfolio
  - Liquidated Specialized Portfolio

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
1315 Capital Fund	Venture Capital	Late Stage	2015	10,000,000	8,974,616	2,226,782	9,404,912	10.9%	Portfolio Advisors
1315 Capital Fund II	Venture Capital	Late Stage	2018	10,000,000	3,305,205	0	2,836,830	-17.6%	Portfolio Advisors
ABRY Advanced Securities Fund III	Credit/Distressed	Credit	2014	20,000,000	24,719,438	4,699,964	15,759,101	-10.9%	Portfolio Advisors
ABRY Advanced Securities Fund IV	Credit/Distressed	Credit	2018	40,000,000	19,744,496	2,709,685	14,812,317	-22.4%	Portfolio Advisors
ABRY Heritage Partners	Buyout	Small	2016	10,000,000	5,325,250	2,679,792	3,757,278	11.5%	Portfolio Advisors
ABRY Partners IX	Buyout	Medium	2019	40,000,000	16,214,727	0	13,386,067	-29.3%	TorreyCove
ABRY Partners VIII	Buyout	Medium	2014	25,000,000	27,985,440	18,787,818	16,056,601	7.6%	Portfolio Advisors
ABRY Senior Equity V	Credit/Distressed	Mezzanine	2016	10,000,000	5,773,209	996,903	5,347,042	8.6%	Portfolio Advisors
ACON Equity Partners 3.5	Buyout	Medium	2012	20,000,000	18,034,492	19,105,219	516,352	1.9%	Hamilton Lane
Acon-Bastion Partners II	Buyout	Medium	2006	5,000,000	4,721,150	8,004,396	207,694	12.3%	Hamilton Lane
Advent Global Technology	Buyout	Medium	2019	15,000,000	2,325,000	0	2,009,257	-43.2%	TorreyCove
Advent International GPE IX	Buyout	Large	2019	45,000,000	11,025,000	0	12,832,108	35.6%	TorreyCove
Advent International GPE VI A	Buyout	Medium	2008	20,000,000	20,000,000	39,031,910	2,804,807	16.6%	Hamilton Lane
Advent International GPE VII B	Buyout	Large	2012	30,000,000	28,200,000	29,206,021	21,668,523	14.8%	Hamilton Lane
Advent International GPE VIII B-2	Buyout	Large	2016	35,000,000	32,795,000	0	44,123,368	14.1%	Portfolio Advisors
AION Capital Partners	Credit/Distressed	Credit	2012	20,000,000	17,910,512	6,648,782	12,350,914	2.3%	Hamilton Lane
American Securities Partners VII	Buyout	Medium	2016	25,000,000	21,202,478	2,982,246	16,676,618	-3.3%	Portfolio Advisors
American Securities Partners VIII	Buyout	Large	2019	40,000,000	5,884,512	0	4,545,022	-47.1%	Portfolio Advisors
Angeles Equity Partners I	Credit/Distressed	Distressed	2015	10,000,000	5,062,573	469,777	5,333,140	7.2%	Portfolio Advisors
Apollo Investment Fund IV	Buyout	Large	1998	5,000,000	4,989,241	8,320,973	5,343	8.5%	Pathway
Apollo Investment Fund VI	Buyout	Large	2006	15,000,000	14,372,999	23,957,457	285,261	8.7%	Hamilton Lane
Apollo Investment Fund VII	Buyout	Large	2008	20,000,000	17,560,155	32,067,760	1,868,637	22.2%	Hamilton Lane
Apollo Investment Fund VIII	Buyout	Large	2013	40,000,000	34,696,895	15,910,055	29,513,960	8.4%	Hamilton Lane
Ascribe Opportunities Fund II	Credit/Distressed	Distressed	2010	20,000,000	30,537,420	30,998,727	2,076,996	3.1%	Hamilton Lane
Ascribe Opportunities Fund III	Credit/Distressed	Distressed	2014	30,000,000	47,401,164	36,547,559	7,225,296	-10.2%	Hamilton Lane
Ascribe Opportunities Fund IV	Credit/Distressed	Distressed	2018	25,000,000	0	0	-11,741	0.0%	Portfolio Advisors
Astorg VI	Buyout	Medium	2015	25,625,875	21,228,378	3,100,383	23,837,781	11.1%	Portfolio Advisors
Astorg VII	Buyout	Medium	2019	36,123,864	4,118,933	0	3,335,628	-26.3%	TorreyCove
Astra Partners I	Buyout	Small	2017	10,000,000	4,082,299	-28,358	4,257,210	4.4%	Portfolio Advisors
Austin Ventures VII	Venture Capital	Multi-Stage	1999	17,000,000	17,000,000	13,696,505	27,993	-2.8%	Pathway
Austin Ventures VIII	Venture Capital	Multi-Stage	2001	8,300,000	8,300,000	13,588,900	143,403	6.9%	Pathway

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Bain Capital Asia Fund III	Buyout	Large	2016	15,000,000	14,565,291	4,907,724	12,835,735	16.1%	Portfolio Advisors
Bain Capital Double Impact Fund	Buyout	Small	2016	10,000,000	7,221,326	1,262,838	7,179,901	12.8%	Portfolio Advisors
BC European Capital IX	Buyout	Large	2011	18,146,966	18,984,319	18,323,357	13,666,658	13.0%	Hamilton Lane
BC European Capital X	Buyout	Large	2017	31,651,237	25,635,267	475,305	28,876,762	9.7%	Portfolio Advisors
BDCM Opportunity Fund IV	Credit/Distressed	Distressed	2015	25,000,000	29,213,670	8,720,130	26,223,366	8.1%	Portfolio Advisors
Blackstone Capital Partners V & V-S	Buyout	Large	2005	19,799,726	19,287,044	31,466,415	616,974	7.8%	Hamilton Lane
Blackstone Capital Partners VI	Buyout	Large	2011	20,000,000	19,202,092	18,036,772	12,089,402	10.7%	Hamilton Lane
Blackstone Energy Partners	Natural Resources	Energy	2011	25,000,000	23,608,387	24,247,264	11,322,828	9.6%	Hamilton Lane
Blue Sea Capital Fund I	Buyout	Small	2013	10,000,000	8,311,730	5,218,313	7,601,970	13.0%	Portfolio Advisors
Brentwood Associates Private Equity VI	Buyout	Medium	2017	25,000,000	9,683,240	104,161	11,594,126	25.0%	Portfolio Advisors
Carlyle Partners V	Buyout	Large	2007	30,000,000	26,774,450	47,573,849	3,077,420	13.6%	Hamilton Lane
CenterGate Capital Partners I	Buyout	Small	2015	10,000,000	4,128,108	1,529,345	3,029,280	5.2%	Portfolio Advisors
Charterhouse Capital Partners IX	Buyout	Large	2008	17,893,814	17,432,850	20,030,057	2,262,480	8.8%	Hamilton Lane
Charterhouse Capital Partners VIII	Buyout	Large	2006	19,706,859	19,659,327	18,876,464	6,749	-0.6%	Hamilton Lane
CHP III	Venture Capital	Early Stage	2006	15,000,000	15,000,000	18,371,658	9,905,673	8.4%	Hamilton Lane
CHS Private Equity V	Buyout	Medium	2005	20,000,000	20,145,530	35,206,573	32,291	9.8%	Pathway
Clearlake Capital Partners VI	Credit/Distressed	Distressed	2020	30,000,000	2,926,326	1,059	2,753,048	-43.3%	TorreyCove
Coller International Partners VI	Other	Secondaries	2011	25,000,000	18,392,640	22,264,380	6,892,316	14.1%	Hamilton Lane
CVC Capital Partners VII	Buyout	Large	2017	28,567,140	13,330,323	236,333	14,262,142	9.6%	Portfolio Advisors
CVC Capital Partners VIII	Buyout	Large	2020	50,206,765	0	0	0	0.0%	TorreyCove
CVC European Equity Partners III	Buyout	Large	2001	15,000,000	14,776,341	41,619,578	844,900	41.0%	Pathway
CVC European Equity Partners IV	Buyout	Large	2005	26,008,211	23,210,339	46,514,557	24,170	16.8%	Hamilton Lane
CVC European Equity Partners V	Buyout	Large	2008	18,815,039	18,352,938	36,100,435	2,326,449	16.8%	Hamilton Lane
Defy Partners I	Venture Capital	Early Stage	2017	10,000,000	7,000,000	0	6,137,290	-8.8%	Portfolio Advisors
Defy Partners II	Venture Capital	Early Stage	2019	18,010,000	2,701,500	0	2,342,294	-27.7%	TorreyCove
DFJ Growth 2013	Growth Equity	Growth Equity	2013	25,000,000	25,126,311	11,748,483	39,802,471	16.4%	Portfolio Advisors
DFJ Growth III	Growth Equity	Growth Equity	2017	15,000,000	12,135,000	0	14,389,511	11.1%	Portfolio Advisors
EIG Energy Fund XVI	Natural Resources	Energy	2013	25,000,000	22,884,905	10,265,239	15,437,878	4.0%	Hamilton Lane
Encap Energy Capital Fund IX	Natural Resources	Energy	2012	30,000,000	28,669,442	20,659,287	8,203,269	0.3%	Hamilton Lane
Encap Energy Capital Fund VIII	Natural Resources	Energy	2010	15,000,000	14,397,183	7,642,841	2,341,683	-10.5%	Hamilton Lane
Encap Energy Capital Fund X	Natural Resources	Energy	2015	35,000,000	29,931,454	4,721,924	22,136,430	-4.1%	Portfolio Advisors

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Encap Energy Capital Fund XI	Natural Resources	Energy	2017	40,000,000	12,059,622	0	7,169,510	-34.3%	Portfolio Advisors
Energy Capital Partners II	Natural Resources	Energy	2009	20,000,000	14,934,322	20,349,894	722,349	8.9%	Hamilton Lane
Energy Capital Partners III	Natural Resources	Energy	2014	40,000,000	36,915,016	9,262,075	37,349,000	7.6%	Hamilton Lane
Essex Woodlands Health Ventures Fund IV	Venture Capital	Late Stage	1998	4,000,000	4,000,000	5,184,021	693,988	7.5%	Pathway
Essex Woodlands Health Ventures Fund V	Venture Capital	Late Stage	2000	10,000,000	10,000,000	10,591,086	1,218,770	3.5%	Pathway
Essex Woodlands Health Ventures Fund VI	Venture Capital	Multi-Stage	2004	15,000,000	14,587,500	15,696,666	5,593,018	4.2%	Pathway
FIMI Opportunity V	Buyout	Medium	2012	20,000,000	18,194,334	7,394,782	20,792,000	10.0%	Hamilton Lane
First Reserve Fund XI	Natural Resources	Energy	2006	30,000,000	30,000,000	20,735,497	31,563	-8.6%	Hamilton Lane
First Reserve Fund XII	Natural Resources	Energy	2008	25,000,000	25,990,474	12,209,948	2,281,102	-12.7%	Hamilton Lane
FS Equity Partners VIII	Buyout	Medium	2019	25,000,000	7,252,392	6,503	6,252,955	-23.6%	TorreyCove
General Catalyst Group X - Early Venture	Venture Capital	Early Stage	2020	10,000,000	850,000	0	757,886	-100.0%	TorreyCove
General Catalyst Group X - Endurance	Venture Capital	Multi-Stage	2020	11,666,667	2,508,333	0	2,489,800	-10.1%	TorreyCove
General Catalyst Group X - Growth Venture	Growth Equity	Growth Equity	2020	16,666,666	1,750,000	0	1,598,113	-99.1%	TorreyCove
Genstar Capital Partners IX	Buyout	Medium	2019	25,000,000	6,153,019	490,080	6,282,626	15.7%	TorreyCove
Genstar IX Opportunities Fund I	Buyout	Large	2019	25,000,000	7,515,152	0	8,137,560	11.5%	TorreyCove
Gilde Buy-Out Fund V	Buyout	Medium	2016	27,121,713	23,239,243	7,600,299	17,558,447	4.2%	Portfolio Advisors
Gilde Buy-Out Fund VI	Buyout	Medium	2019	39,684,790	725,934	0	-553,668	-100.0%	TorreyCove
Glendon Opportunities Fund	Credit/Distressed	Distressed	2014	20,000,000	18,990,996	4,501,321	13,922,110	-0.8%	Portfolio Advisors
Glendon Opportunities Fund II	Credit/Distressed	Distressed	2019	40,000,000	19,000,000	0	18,526,760	-7.6%	Portfolio Advisors
Green Equity Investors V	Buyout	Large	2007	20,000,000	18,270,441	38,329,715	7,135,285	19.4%	Hamilton Lane
Green Equity Investors VI	Buyout	Large	2012	20,000,000	18,396,710	12,071,496	20,930,527	13.8%	Hamilton Lane
Green Equity Investors VII	Buyout	Large	2017	25,000,000	21,274,569	223,942	26,087,922	12.7%	Portfolio Advisors
GTCR Fund VIII	Buyout	Medium	2003	20,000,000	18,520,960	32,142,142	250,293	22.3%	Pathway
GTCR Fund XII-AB	Buyout	Medium	2017	40,000,000	18,420,000	781,356	21,166,161	17.0%	Portfolio Advisors
H&F Spock 1	Buyout	Large	2018	0	3,266,786	0	6,746,217	38.6%	Hamilton Lane
Halifax Capital Partners II	Buyout	Small	2005	10,000,000	8,098,600	10,703,687	156,798	7.6%	Hamilton Lane
Harvest Partners VII	Buyout	Medium	2016	20,000,000	19,315,920	379,083	21,963,511	7.7%	Portfolio Advisors
Harvest Partners VIII	Buyout	Medium	2019	50,000,000	19,920,388	1,501	19,622,212	-4.2%	TorreyCove
Hellman & Friedman Capital Partners IX	Buyout	Large	2019	30,000,000	6,668,837	0	6,330,866	-20.2%	Portfolio Advisors
Hellman & Friedman Capital Partners VI	Buyout	Large	2006	20,000,000	19,344,481	35,185,083	905,796	12.9%	Hamilton Lane
Hellman & Friedman Capital Partners VII	Buyout	Large	2011	20,000,000	19,094,563	28,577,755	26,987,829	24.0%	Hamilton Lane

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

Aksia

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Hellman & Friedman Capital Partners VIII	Buyout	Large	2016	20,000,000	19,566,915	1,326,691	24,127,287	13.3%	Portfolio Advisors
Hg Genesis 9	Buyout	Medium	2020	19,295,500	0	0	0	0.0%	TorreyCove
HgCapital Saturn Fund 2	Buyout	Large	2020	20,000,000	0	0	286,417	0.0%	TorreyCove
High Road Capital Partners II	Buyout	Small	2013	25,000,000	19,334,307	10,079,216	19,980,674	13.7%	Hamilton Lane
Hony Capital Fund V	Buyout	Large	2011	25,000,000	25,084,013	477,782	17,910,759	-5.4%	Hamilton Lane
Incline Equity Partners IV	Buyout	Small	2017	10,000,000	6,560,467	34,293	7,753,981	14.2%	Portfolio Advisors
Insight Venture Partners IX	Growth Equity	Growth Equity	2015	25,000,000	25,581,482	6,132,068	53,269,994	26.7%	Portfolio Advisors
Insight Venture Partners VIII	Growth Equity	Growth Equity	2013	20,000,000	19,585,777	27,709,281	24,382,588	20.5%	Hamilton Lane
Institutional Venture Partners XV	Venture Capital	Late Stage	2015	20,000,000	20,000,000	4,133,844	28,346,105	17.4%	Portfolio Advisors
J.H. Whitney VII	Buyout	Medium	2010	25,000,000	24,652,068	18,927,004	25,070,192	12.8%	Hamilton Lane
Kelso Investment Associates VII	Buyout	Medium	2003	18,000,000	17,131,163	29,092,678	28,640	12.5%	Pathway
Kelso Investment Associates VIII	Buyout	Medium	2007	20,000,000	18,941,737	21,995,972	3,164,393	5.9%	Hamilton Lane
Khosla Ventures IV	Venture Capital	Early Stage	2011	20,000,000	19,620,000	30,305,636	28,278,994	21.5%	Hamilton Lane
KKR 2006 Fund	Buyout	Large	2006	30,000,000	30,296,985	46,309,319	8,005,670	9.1%	Hamilton Lane
KKR European Fund II	Buyout	Large	2005	15,000,000	15,497,844	20,962,595	107,912	4.7%	Hamilton Lane
KPS Special Situations Fund IV	Buyout	Medium	2014	25,000,000	21,074,259	4,954,754	20,055,286	12.0%	Hamilton Lane
KPS Special Situations Fund V	Buyout	Medium	2020	40,000,000	0	0	0	0.0%	TorreyCove
KPS Special Situations Mid-Cap Fund	Buyout	Medium	2019	10,000,000	1,773,189	0	1,683,639	-10.6%	TorreyCove
Levine Leichtman Capital Partners III	Buyout	Medium	2003	20,000,000	21,392,254	33,239,814	110,078	10.0%	Hamilton Lane
Levine Leichtman Capital Partners IV	Buyout	Medium	2008	20,000,000	16,448,126	28,965,877	1,908,323	17.9%	Hamilton Lane
Levine Leichtman Capital Partners V	Buyout	Medium	2013	30,000,000	26,489,374	14,529,245	27,201,673	11.6%	Hamilton Lane
Lindsay Goldberg III	Buyout	Large	2008	20,000,000	19,176,896	25,955,797	129,679	8.1%	Hamilton Lane
Longitude Venture Partners III	Venture Capital	Late Stage	2016	10,000,000	7,914,412	436,631	9,709,374	16.7%	Portfolio Advisors
Madison Dearborn Capital Partners IV	Buyout	Medium	2000	25,000,000	25,174,337	47,037,524	579,182	14.1%	Pathway
MBK Partners Fund V	Buyout	Large	2020	40,000,000	0	0	0	0.0%	TorreyCove
Menlo Ventures IX	Venture Capital	Multi-Stage	2001	20,000,000	20,000,000	20,254,444	380,925	0.5%	Pathway
Mill Point Capital Partners	Buyout	Small	2017	10,000,000	6,635,800	21,869	9,294,532	26.2%	Portfolio Advisors
Montagu VI	Buyout	Medium	2019	40,301,363	0	0	-52,955	0.0%	TorreyCove
Nautic Partners V	Buyout	Medium	2000	15,000,000	14,426,866	29,627,940	609,915	17.0%	Pathway
New Enterprise Associates 13	Venture Capital	Multi-Stage	2009	15,000,000	15,000,000	20,616,503	12,945,082	15.5%	Hamilton Lane
New Enterprise Associates 15	Venture Capital	Multi-Stage	2015	20,000,000	18,300,000	4,285,088	26,250,631	16.2%	Portfolio Advisors

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

Aksia

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
New Enterprise Associates 16	Venture Capital	Multi-Stage	2017	25,000,000	18,125,000	447,726	21,310,290	12.5%	Portfolio Advisors
New Enterprise Associates 17	Venture Capital	Multi-Stage	2019	35,000,000	6,650,000	0	6,799,038	3.7%	TorreyCove
New Mountain Partners III	Buyout	Large	2007	20,000,000	18,661,525	26,447,896	15,249,814	13.4%	Hamilton Lane
New Water Capital	Buyout	Small	2015	10,000,000	8,788,031	470,349	8,597,113	1.5%	Portfolio Advisors
NewBridge Asia IV	Buyout	Medium	2005	10,000,000	9,846,880	21,717,152	113,139	16.7%	Hamilton Lane
NGP Natural Resources XI	Natural Resources	Energy	2014	25,000,000	24,048,748	6,220,511	16,616,105	-1.9%	Portfolio Advisors
NMS Fund III	Buyout	Small	2017	10,000,000	3,815,828	624,798	3,295,224	2.5%	Portfolio Advisors
Nordic Capital V	Buyout	Medium	2003	14,043,460	14,308,101	42,446,076	111,356	20.8%	Pathway
Oak HC-FT Partners	Venture Capital	Late Stage	2014	10,000,000	9,314,590	4,549,787	16,555,830	26.8%	Portfolio Advisors
Oak HC-FT Partners II	Venture Capital	Late Stage	2017	10,000,000	7,216,001	0	10,271,505	29.5%	Portfolio Advisors
Oak HC-FT Partners III	Venture Capital	Multi-Stage	2019	25,000,000	5,990,549	0	5,447,096	-24.5%	TorreyCove
Oak Investment Partners XII	Venture Capital	Multi-Stage	2006	15,000,000	14,999,762	11,424,357	3,265,249	-0.3%	Hamilton Lane
Oaktree Opportunities Fund X	Credit/Distressed	Distressed	2015	7,500,000	6,225,000	917,949	6,637,997	7.2%	Portfolio Advisors
Oaktree Opportunities Fund Xb	Credit/Distressed	Distressed	2018	17,500,000	7,000,000	0	6,871,172	-2.3%	Portfolio Advisors
OceanSound Partners Fund	Buyout	Medium	2020	20,000,000	0	0	0	0.0%	TorreyCove
OCM Opportunities Fund V	Credit/Distressed	Distressed	2004	7,100,000	7,100,000	11,699,250	2,835	14.1%	Pathway
OCM Opportunities Fund VII	Credit/Distressed	Distressed	2007	10,000,000	10,000,000	13,717,066	71,467	7.3%	Hamilton Lane
OCM Opportunities Fund VIIb	Credit/Distressed	Distressed	2008	10,000,000	9,000,000	15,565,673	18,018	16.5%	Hamilton Lane
Onex Partners	Buyout	Large	2003	20,000,000	19,048,408	58,437,674	-224,062	38.4%	Pathway
P4G Capital Partners I	Buyout	Small	2018	10,000,000	473,390	13	-3,466	-100.0%	TorreyCove
Palladium Equity Partners IV	Buyout	Medium	2012	25,000,000	24,863,744	12,009,917	17,532,965	6.1%	Portfolio Advisors
Palladium Equity Partners V	Buyout	Medium	2017	25,000,000	10,704,231	219,346	10,066,827	-4.5%	Portfolio Advisors
Permira Europe III	Buyout	Large	2003	21,506,160	21,515,354	36,841,232	53,447	26.1%	Pathway
Pharos Capital Partners II-A	Buyout	Medium	2004	5,000,000	5,000,000	3,192,707	2,439,695	1.7%	Hamilton Lane
Platinum Equity Capital Partners III	Buyout	Large	2011	25,000,000	20,276,102	30,319,349	11,318,972	30.4%	Hamilton Lane
Platinum Equity Capital Partners IV	Buyout	Large	2016	15,000,000	13,922,912	4,732,734	12,531,814	14.5%	Portfolio Advisors
Platinum Equity Capital Partners V	Buyout	Large	2019	50,000,000	6,190,747	0	5,926,668	-10.8%	TorreyCove
Platinum Equity Small Cap Fund	Buyout	Medium	2018	22,500,000	8,220,903	373,426	4,335,941	-77.9%	Portfolio Advisors
Polaris Growth Fund	Growth Equity	Growth Equity	2018	10,000,000	2,350,000	0	2,224,735	-6.4%	Portfolio Advisors
Polaris Partners VII	Venture Capital	Multi-Stage	2014	25,000,000	23,125,000	3,131,013	32,859,628	12.7%	Portfolio Advisors
Polaris Venture Partners V	Venture Capital	Multi-Stage	2006	15,000,000	14,700,000	16,999,912	8,630,273	8.2%	Hamilton Lane

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

Aksia

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Polaris Venture Partners VI	Venture Capital	Multi-Stage	2010	15,000,000	13,125,000	9,386,445	23,304,042	19.0%	Hamilton Lane
Polaris Venture Partners VIII	Venture Capital	Multi-Stage	2016	10,000,000	7,400,000	1,068,730	8,114,492	12.6%	Portfolio Advisors
Providence Debt Fund III	Credit/Distressed	Distressed	2013	30,000,000	32,098,772	22,294,629	17,005,042	5.8%	Hamilton Lane
Providence Equity Partners V	Buyout	Large	2005	18,000,000	16,415,524	20,190,547	230,770	3.2%	Pathway
Providence Equity Partners VI	Buyout	Large	2006	30,000,000	29,000,111	31,574,384	7,173,483	4.7%	Hamilton Lane
Roark Capital Partners II Side Car	Buyout	Medium	2018	10,000,000	6,163,352	0	8,233,256	21.0%	TorreyCove
Roark Capital Partners V	Buyout	Large	2018	15,000,000	4,035,158	0	4,750,711	13.9%	TorreyCove
Searchlight Capital II	Buyout	Medium	2015	25,000,000	21,004,466	3,452,983	26,099,139	16.5%	Portfolio Advisors
Spark Capital	Venture Capital	Early Stage	2005	9,000,000	8,820,000	11,937,038	467,167	8.3%	Hamilton Lane
Spark Capital Growth Fund	Growth Equity	Growth Equity	2014	10,000,000	10,000,000	0	19,998,183	16.7%	Portfolio Advisors
Spark Capital Growth Fund II	Growth Equity	Growth Equity	2017	15,000,000	13,425,000	0	16,145,204	12.0%	Portfolio Advisors
Spark Capital Growth Fund III	Growth Equity	Growth Equity	2020	26,750,000	1,203,750	0	1,029,552	-47.0%	TorreyCove
Spark Capital II	Venture Capital	Early Stage	2008	9,750,000	9,750,000	35,120,689	6,077,530	51.4%	Hamilton Lane
Spark Capital III	Venture Capital	Early Stage	2011	10,000,000	10,000,000	13,674,666	21,191,312	31.7%	Hamilton Lane
Spark Capital Partners VI	Venture Capital	Early Stage	2020	13,250,000	861,250	0	774,961	-42.2%	TorreyCove
Spire Capital Partners III	Buyout	Small	2013	10,000,000	9,609,230	6,083,022	6,549,245	9.3%	Portfolio Advisors
SSG Capital Partners II	Credit/Distressed	Distressed	2012	15,914,286	15,128,109	15,235,538	2,821,052	4.7%	Hamilton Lane
StepStone Secondary Opportunities III	Other	Secondaries	2016	25,000,000	23,525,196	6,469,616	21,740,508	10.1%	Portfolio Advisors
Stripes III	Growth Equity	Growth Equity	2015	10,000,000	11,070,957	3,013,651	17,681,416	19.9%	Portfolio Advisors
Stripes IV	Growth Equity	Growth Equity	2017	10,000,000	8,151,381	540,322	13,063,913	40.6%	Portfolio Advisors
Sunstone Partners I	Growth Equity	Growth Equity	2015	7,500,000	5,608,659	3,762,780	5,602,175	29.5%	Portfolio Advisors
Sunstone Partners II	Growth Equity	Growth Equity	2019	10,000,000	0	0	-128,176	0.0%	TorreyCove
TA X	Growth Equity	Growth Equity	2006	6,000,000	6,186,689	8,022,689	2,425	5.2%	Hamilton Lane
TA XI	Growth Equity	Growth Equity	2010	20,000,000	19,650,000	38,352,305	23,855,612	26.1%	Hamilton Lane
TA XII-A	Growth Equity	Growth Equity	2016	25,000,000	24,228,785	15,429,817	29,909,069	34.5%	Portfolio Advisors
TA XIII-A	Growth Equity	Growth Equity	2019	35,000,000	5,250,000	0	5,172,709	-2.7%	TorreyCove
TCV IX	Growth Equity	Growth Equity	2016	10,000,000	7,938,000	549,489	11,516,649	23.7%	Portfolio Advisors
TCV V	Venture Capital	Multi-Stage	2004	19,500,000	19,334,250	35,076,718	845,716	10.6%	Pathway
TCV VII	Growth Equity	Growth Equity	2008	20,000,000	19,689,394	51,758,877	8,384,791	23.3%	Hamilton Lane
TCV VIII	Growth Equity	Growth Equity	2014	30,000,000	26,152,505	3,927,420	51,161,049	17.9%	Hamilton Lane
TCV X	Growth Equity	Growth Equity	2019	25,000,000	9,485,000	0	11,825,742	28.3%	Portfolio Advisors

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
TCW Crescent Mezzanine Partners V	Credit/Distressed	Mezzanine	2007	10,000,000	9,625,012	12,467,522	404,422	9.2%	Hamilton Lane
The Baring Asia Private Equity Fund VI, L.P	Buyout	Medium	2015	25,000,000	26,061,623	6,275,295	28,405,846	11.6%	Portfolio Advisors
The Baring Asia Private Equity Fund VII	Buyout	Medium	2018	25,000,000	7,659,502	1,112,824	6,445,218	-1.7%	Portfolio Advisors
Thoma Bravo Discover Fund II	Buyout	Medium	2018	10,000,000	6,088,248	0	7,195,861	19.4%	Portfolio Advisors
Thoma Bravo Discover Fund III	Buyout	Medium	2020	20,000,000	0	0	0	0.0%	Aksia
Thoma Bravo Explore Fund I	Buyout	Small	2020	10,000,000	0	0	0	0.0%	Aksia
Thoma Bravo Fund XI	Buyout	Medium	2014	15,000,000	13,400,392	21,834,469	26,903,477	32.0%	Portfolio Advisors
Thoma Bravo Fund XII	Buyout	Large	2016	25,000,000	24,530,707	941,606	35,093,455	15.3%	Portfolio Advisors
Thoma Bravo Fund XIII	Buyout	Large	2018	30,000,000	21,709,034	6,943	32,735,210	62.6%	Portfolio Advisors
Thoma Bravo Fund XIV	Buyout	Large	2020	30,000,000	0	0	0	0.0%	Aksia
Thoma Bravo Special Opportunities Fund II	Buyout	Medium	2015	10,000,000	9,200,691	7,810,579	13,448,455	21.5%	Portfolio Advisors
Threshold Ventures II	Venture Capital	Early Stage	2016	10,000,000	8,885,000	0	13,891,216	22.1%	Portfolio Advisors
TPG Growth II	Buyout	Medium	2011	30,000,000	29,656,749	41,490,355	16,608,198	15.5%	Hamilton Lane
TPG Partners III	Buyout	Large	1999	25,000,000	22,442,286	56,548,095	33,093	24.4%	Pathway
TPG Partners IV	Buyout	Large	2003	25,000,000	27,436,973	52,493,884	298,252	15.2%	Pathway
TPG Partners V	Buyout	Large	2006	30,000,000	31,415,182	42,145,759	668,756	4.8%	Hamilton Lane
TPG Partners VI	Buyout	Large	2008	22,500,000	24,481,111	32,347,004	4,166,300	9.7%	Hamilton Lane
TPG STAR	Buyout	Medium	2006	20,000,000	21,635,099	24,896,346	3,295,367	6.5%	Hamilton Lane
Trident Capital Fund-V	Buyout	Medium	2000	14,369,679	14,001,728	24,077,173	145,517	8.6%	Pathway
Trident Capital Fund-VI	Buyout	Medium	2005	8,500,000	8,500,000	11,510,465	1,740,313	4.8%	Pathway
Upfront VI	Venture Capital	Early Stage	2017	20,000,000	11,320,303	0	11,892,603	3.5%	Portfolio Advisors
VantagePoint Venture Partners IV	Venture Capital	Multi-Stage	2000	15,000,000	15,000,000	13,168,259	954,390	-0.8%	Pathway
Vestar Capital Partners IV	Buyout	Medium	1999	17,000,000	16,585,106	29,291,945	104,823	13.4%	Pathway
Vista Equity Partners Fund III	Buyout	Medium	2007	25,000,000	23,229,174	60,172,877	2,133,803	26.7%	Hamilton Lane
Vista Equity Partners Fund IV	Buyout	Medium	2011	30,000,000	25,353,042	34,187,218	18,952,586	15.9%	Hamilton Lane
Vista Equity Partners Fund V	Buyout	Medium	2014	40,000,000	39,776,535	39,022,248	43,206,265	20.8%	Portfolio Advisors
Vista Equity Partners Fund VI	Buyout	Large	2016	30,000,000	33,101,361	7,618,615	44,359,825	19.4%	Portfolio Advisors
Vista Equity Partners Fund VII	Buyout	Large	2018	40,000,000	10,096,769	88,661	10,029,168	0.2%	Portfolio Advisors
Vista Foundation Fund II	Buyout	Medium	2013	10,000,000	8,852,068	5,809,970	10,254,257	14.4%	Hamilton Lane
Vista Foundation Fund III	Buyout	Medium	2016	10,000,000	8,245,548	1,495,601	10,632,828	19.6%	Portfolio Advisors
Vista Foundation Fund IV	Buyout	Medium	2020	30,000,000	0	0	-256,263	0.0%	TorreyCove

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Vitruvian Investment Partnership IV	Buyout	Medium	2020	39,119,924	0	0	0	0.0%	Aksia
Wynnchurch Capital Partners IV	Buyout	Medium	2015	10,000,000	8,687,407	1,688,238	8,447,527	8.6%	Portfolio Advisors
Yucaipa American Alliance Fund II	Buyout	Medium	2008	20,000,000	20,160,070	19,070,405	17,411,649	8.3%	Hamilton Lane
Total - Active				4,559,895,704	3,190,022,843	2,698,664,022	2,194,963,302	12.0%	

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

Aksia

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - LIQUIDATED

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Alchemy Plan (City of Angels)	Buyout	Medium	1999	38,194,245	40,196,637	50,322,714	0	5.7%	Pathway
Avenue Europe Special Situations Fund II	Credit/Distressed	Distressed	2011	28,323,908	28,305,005	32,200,618	0	3.5%	Hamilton Lane
Avenue Special Situations Fund IV	Credit/Distressed	Distressed	2006	10,000,000	10,000,000	13,828,999	0	8.3%	Hamilton Lane
Avenue Special Situations Fund V	Credit/Distressed	Distressed	2007	10,000,000	9,950,262	13,312,819	0	11.5%	Hamilton Lane
Carlyle Partners IV	Buyout	Large	2005	20,000,000	19,634,189	39,897,415	0	13.0%	Pathway
CGW Southeast Partners III	Buyout	Small	1996	8,680,144	8,680,144	14,736,448	0	9.2%	Pathway
CGW Southeast Partners IV	Buyout	Medium	1999	10,000,000	8,707,914	13,398,877	0	8.3%	Pathway
Chisholm Partners IV	Buyout	Small	1999	9,000,000	8,841,055	9,376,669	0	0.7%	Pathway
CVC European Equity Partners	Buyout	Large	1996	10,000,000	9,686,071	24,345,254	0	23.2%	Pathway
CVC European Equity Partners II	Buyout	Large	1998	9,218,055	9,212,371	22,076,376	0	18.9%	Pathway
Enhanced Equity Fund	Buyout	Small	2006	10,000,000	10,000,000	10,776,209	0	1.1%	Hamilton Lane
Enhanced Equity Fund II	Buyout	Small	2010	10,000,000	9,570,165	5,253,831	0	-21.7%	Hamilton Lane
First Reserve Fund X	Natural Resources	Energy	2004	20,000,000	20,000,000	36,552,322	0	31.1%	Pathway
Golder, Thoma, Cressey, Rauner Fund V	Buyout	Medium	1997	10,000,000	10,000,000	18,226,074	0	11.0%	Pathway
GTCR Fund IX-A	Buyout	Medium	2006	15,000,000	14,288,203	25,808,785	0	13.8%	Hamilton Lane
GTCR Fund VI	Buyout	Medium	1998	10,000,000	10,000,000	8,890,791	0	-3.8%	Pathway
GTCR Fund VII	Buyout	Medium	2000	18,750,000	18,609,375	43,841,047	0	21.8%	Pathway
GTCR Fund VII-A	Buyout	Medium	2000	6,250,000	4,140,625	11,565,815	0	83.1%	Pathway
Hellman & Friedman Capital Partners V	Buyout	Large	2004	10,463,972	9,931,388	26,659,657	0	27.8%	Pathway
Highbridge Principal Strategies Senior Loan II	Credit/Distressed	Distressed	2010	50,000,000	40,883,273	47,651,965	0	7.9%	Pathway
InterWest VI	Venture Capital	Early Stage	1996	5,000,000	5,000,000	14,858,749	0	49.0%	Pathway
J.H. Whitney IV	Buyout	Medium	1999	22,448,463	22,448,463	9,422,111	0	-10.9%	Pathway
J.H. Whitney V	Buyout	Medium	2000	9,957,358	11,558,159	22,375,756	0	23.3%	Pathway
J.H. Whitney VI	Buyout	Medium	2005	15,000,000	14,884,557	14,590,780	0	-0.4%	Hamilton Lane
Kelso Investment Associates VI	Buyout	Medium	1998	4,309,418	4,309,418	5,982,794	0	9.3%	Pathway
KKR 1996 Fund	Buyout	Large	1997	25,000,000	26,194,438	46,838,314	0	13.2%	Pathway
Lindsay Goldberg & Bessemer II	Buyout	Large	2006	20,000,000	18,913,523	27,078,474	0	7.1%	Hamilton Lane
Madison Dearborn Capital Partners III	Buyout	Medium	1999	16,000,000	16,000,000	24,398,778	0	8.6%	Pathway
Menlo Ventures VII	Venture Capital	Multi-Stage	1997	5,000,000	5,000,000	23,552,033	0	135.8%	Pathway
Menlo Ventures VIII	Venture Capital	Multi-Stage	1999	18,000,000	18,000,000	8,980,234	0	-8.9%	Pathway
OCM Opportunities Fund	Credit/Distressed	Distressed	1995	11,000,000	10,972,896	18,030,431	0	10.3%	Pathway

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

Aksia

CORE PORTFOLIO SUMMARY AS OF 6/30/2020 - LIQUIDATED

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
OCM Opportunities Fund II	Credit/Distressed	Distressed	1997	11,000,000	11,000,000	16,628,641	0	8.5%	Pathway
OCM Opportunities Fund III	Credit/Distressed	Distressed	1999	10,000,000	10,000,000	15,072,658	0	11.9%	Pathway
OCM Opportunities Fund IV	Credit/Distressed	Distressed	2001	10,000,000	10,000,000	16,503,319	0	28.4%	Pathway
Olympus Growth Fund IV	Buyout	Medium	2003	7,700,000	7,660,045	11,831,606	0	8.5%	Pathway
Permira Europe IV	Buyout	Large	2006	14,935,115	14,921,731	24,111,899	0	8.6%	Hamilton Lane
Providence TMT Debt Opportunity Fund II	Credit/Distressed	Distressed	2010	20,000,000	16,319,772	25,893,666	0	10.4%	Hamilton Lane
Richland Ventures III	Venture Capital	Late Stage	1999	18,000,000	18,000,000	15,261,276	0	-3.0%	Pathway
TCW Crescent Mezzanine Partners IV	Credit/Distressed	Mezzanine	2006	10,000,000	8,712,805	9,998,443	0	2.9%	Hamilton Lane
The Resolute Fund	Buyout	Medium	2002	20,000,000	18,978,049	48,217,383	0	17.0%	Pathway
Thoma Cressey Fund VI	Buyout	Medium	1998	5,000,000	4,845,000	4,995,064	0	0.4%	Pathway
Thomas H. Lee Equity Fund V	Buyout	Medium	2000	15,000,000	15,260,867	26,333,190	0	14.2%	Pathway
Tibbar Holdings, LLC (FKA TH Lee IV)	Buyout	Medium	1998	7,000,000	6,314,197	5,484,109	0	-2.6%	Pathway
Welsh, Carson, Anderson & Stowe IX	Buyout	Medium	2000	15,000,000	14,850,000	24,680,230	0	11.2%	Pathway
Welsh, Carson, Anderson & Stowe VII	Buyout	Medium	1995	15,000,000	15,000,000	32,633,357	0	17.7%	Pathway
Welsh, Carson, Anderson & Stowe VIII	Buyout	Medium	1998	15,000,000	15,000,000	19,322,526	0	3.1%	Pathway
Weston Presidio Capital IV	Growth Equity	Growth Equity	2000	18,040,488	17,537,531	20,886,797	0	3.3%	Pathway
Total - Liquidated				677,271,166	658,318,130	1,002,685,302	0	10.5%	
Total - Core Portfolio				5,237,166,870	3,848,340,973	3,701,349,324	2,194,963,302	11.5%	

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

SPECIALIZED PORTFOLIO SUMMARY AS OF 6/30/2020 - ACTIVE

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Angeleno Investors III	Venture Capital	Late Stage	2009	10,000,000	10,686,144	965,398	7,008,544	-5.4%	PCA
DFJ Element	Venture Capital	Multi-Stage	2006	8,000,000	7,846,106	5,657,419	110,214	-3.4%	PCA
DFJ Frontier Fund II	Venture Capital	Early Stage	2007	5,000,000	5,002,783	1,790,549	3,618,841	1.0%	PCA
Element Partners Fund II	Venture Capital	Late Stage	2008	10,000,000	9,361,465	12,782,784	1,284,620	6.1%	PCA
NGEN Partners III	Venture Capital	Multi-Stage	2008	10,000,000	11,129,177	2,541,046	4,934,221	-6.2%	PCA
Palladium Equity Partners III	Buyout	Medium	2004	10,000,000	9,899,504	17,587,539	149,543	11.2%	PCA
Rustic Canyon/Fontis Partners	Growth Equity	Growth Equity	2005	5,000,000	3,671,248	1,973,943	748,071	-4.2%	PCA
Saybrook Corporate Opportunity Fund	Credit/Distressed	Distressed	2007	6,192,813	6,321,092	6,746,700	2,085,801	8.9%	PCA
St. Cloud Capital Partners II	Credit/Distressed	Mezzanine	2007	5,000,000	4,989,085	4,177,572	63,846	-3.8%	PCA
StarVest Partners II	Venture Capital	Late Stage	2007	5,000,000	4,965,849	2,151,491	2,474,492	-1.0%	PCA
StepStone Pioneer Capital II	Other	Fund of Funds	2006	10,000,000	9,427,148	18,088,121	176,158	9.1%	PCA
Sterling Venture Partners II	Venture Capital	Late Stage	2005	8,000,000	8,006,256	8,357,525	2,013,329	3.7%	PCA
Vicente Capital Partners Growth Equity Fund	Growth Equity	Growth Equity	2007	10,000,000	10,093,708	12,178,538	1,999,376	5.8%	PCA
Yucaipa American Alliance Fund I	Buyout	Medium	2002	10,000,000	10,000,000	12,451,100	674,263	4.5%	PCA
Total - Active				112,192,813	111,399,563	107,449,725	27,341,319	3.2%	

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

SPECIALIZED PORTFOLIO SUMMARY AS OF 6/30/2020 - LIQUIDATED

Fund	Strategy	Sub-Strategy	Vintage Year	USD Commitment	USD ITD Contributions	USD ITD Distributions	USD Fair Market Value	Net IRR	Recommended by
Ares Special Situations Fund	Credit/Distressed	Distressed	2008	10,000,000	10,166,166	17,497,244	0	13.1%	PCA
Carpenter Community BancFund-A	Buyout	Small	2008	10,000,000	9,692,231	16,376,097	0	8.2%	PCA
Craton Equity Investors I	Growth Equity	Growth Equity	2006	10,000,000	9,951,989	1,067,621	0	-32.7%	PCA
NGEN Partners II	Venture Capital	Multi-Stage	2005	7,750,702	7,750,702	515,126	0	-49.0%	PCA
Nogales Investors Fund II	Buyout	Medium	2006	4,100,000	3,603,436	398,586	0	-24.1%	PCA
Reliant Equity Partners	Buyout	Small	2002	7,920,417	8,008,449	55,772	0	-100.0%	PCA
Sector Performance Fund	Buyout	Medium	2007	9,297,735	9,502,443	8,466,553	0	-2.9%	PCA
Spire Capital Partners II	Buyout	Small	2007	10,000,000	9,025,654	17,699,807	0	15.6%	PCA
StepStone Pioneer Capital I	Other	Fund of Funds	2004	10,000,000	9,751,911	13,033,359	0	5.1%	PCA
Total - Liquidated				**79,068,854**	**77,452,981**	**75,110,165**	**0**	**-0.6%**	
Total - Specialized Portfolio				**191,261,667**	**188,852,544**	**182,559,890**	**27,341,319**	**1.8%**	

* Aksia TorreyCove is still in the process of verifying all of the performance information presented by General Partners; therefore, changes may occur.

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

REPORT TO BOARD OF ADMINISTRATION **MEETING: NOVEMBER 10, 2020**
From: Neil M. Guglielmo, General Manager **ITEM: VII – D**

SUBJECT: **NOTIFICATION OF COMMITMENT OF UP TO $30 MILLION IN STELLEX CAPITAL PARTNERS II LP**

ACTION: ☐ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☒

Recommendation

That the Board receive and file this notice of the commitment of up to $30 million in Stellex Capital Partners II LP.

Executive Summary

Stellex Capital Partners II LP will focus on lower middle market businesses within the industrials, marine, transportation, consumer, and materials sectors in North America and Europe.

Discussion

Consultant Recommendation
Aksia TorreyCove Partners LLC (Aksia TorreyCove), LACERS' Private Equity Consultant, recommended a commitment of up to $30 million in Stellex Capital Partners II LP (the Fund) managed by Stellex Capital Management (Stellex or the GP). Fund management and incentive fees are comparable to similar strategies; the GP will invest alongside limited partners, providing alignment of interests. This recommendation is consistent with the Private Equity Program 2020 Strategic Plan adopted by the Board on December 10, 2019.

Background
Stellex was formed in 2014 by Ray Whiteman and Micheal Stewart, former Co-Heads and Managing Directors of Carlyle Strategic Partners ("CSP"), a wholly-owned entity of The Carlyle Group. Between 2003 and 2013, Messrs. Whiteman and Stewart were involved with and responsible for managing the investment activities of three CSP funds.

Stellex focuses on lower middle market investments in companies going through business or industry transitions, as well as special situation opportunities, with the capability of creating investments in a private equity format or by acquiring secondary debt to facilitate control or significant influence. The GP manages over $2.6 billion in assets and has offices in New York (headquarters), Ann Arbor, and London.

Stellex's core competency is investing in businesses it believes would benefit from the GP's operational expertise and resources, as well as complex situations calling for creative solutions. Stellex believes such investment opportunities are available irrespective of vintage year and allow for consistent capital deployment.

Stellex is a new general partner relationship for LACERS.

Investment Thesis
Stellex seeks to identify and deploy capital in opportunities with the potential to provide stability, improvement, and growth. Consistent with their prior fund, Stellex Capital Partners II will seek to invest in companies that the GP believes will benefit from their industry knowledge, operating capabilities, network of senior executives, strategic insight and access to capital. Sectors of particular focus include industrials, marine, transportation, consumer, and materials. Stellex maintains the flexibility to pursue a variety of transaction types including restructurings, corporate carve-outs, recapitalizations, debt-for-control transactions, and buyouts.

Placement Agent
The GP did not use a placement agent in connection with LACERS' investment.

Staff Recommendation
Staff concurred with Aksia TorreyCove's recommendation. The commitment has been consummated pursuant to the Discretion in a Box (Roles and Responsibilities) section of the Private Equity Investment Policy; no Board action is required.

<u>Strategic Alignment</u>

Investment in Stellex Capital Partners II LP will allow LACERS to maintain exposure to private equity, pursuant to the Private Equity Program 2020 Strategic Plan, and aligns with the Strategic Plan Goal of optimizing long-term risk adjusted investment returns (Goal IV).

<u>Prepared By:</u> Clark Hoover, Investment Officer I, Investment Division

NMG/RJ/BF/WL/CH:rm

Attachments: 1. Aksia TorreyCove Investment Notification
2. Discretion in a Box

Aksia LLC

Stellex Capital Partners II LP
Investment Notification

Aksia
New York • London • Tokyo

www.aksia.com

Aksia

Stellex Capital Partners II LP

General Partner	• Stellex Capital Management LP ("Stellex" or the "Firm))
Fund	• Stellex Capital Partners II LP (the "Fund")
Firm Founded	• 2014
Strategy	• Buyouts
Sub-Strategy	• Medium Corporate Finance
Geography	• North America and Europe
Team	• 17 investment professionals
Senior Partners	• Michael Stewart, Ray Whiteman, and Karthik Achar
Office Locations	• New York, London, and Ann Arbor
Industries	• Industrials, Marine, Transportation, Consumer, and Materials
Target Fund Size	• $1.25 billion
Investment Amount	• $30.0 million

Investment Highlights

- Ray Whiteman and Michael Steward, co-founders, have worked together since 2003 with more than 45 year of combined turnaround and distressed debt investment experience, and received full attribution for the investments made during their tenure at Carlyle.
- Stellex's investment professionals will be supported by a group of established industry executives who play a critical role in implementing the investment strategy.
- The Firm has generated strong returns since inception across multiple deal types and industries.
- Stellex maintains the flexibility to pursue a variety of transaction types which is particularly attractive during periods of market dislocation and has enabled the Firm to access deals at attractive entry valuations.

Stellex Capital Partners II LP

Firm and Background

- Stellex was founded in 2014 by Ray Whiteman and Mike Stewart to pursue buyout investments in the North America and Europe.

- Today, Stellex continues to be led by Whiteman and Stewart with support from a group of investment professionals that includes one Partner, two Managing Directors, three Principals, one Vice President, two Senior Associates and six Associates.

Investment Strategy

- The Fund will target control-oriented buyouts of underperforming or mismanaged lower middle market businesses in North America and Europe.

- Stellex invests in cyclical industries and asset intensive companies experiencing financial or operational distress, often in out-of-favor or overlooked end markets.

- Transactions will take the form of a broad range of opportunities including carve-outs of orphaned businesses, buy-and-build platforms, operationally sound companies that are over-levered, and special situations that involve sectors or business where Stellex has significant in-house knowledge.

- The Fund will target 15-20 investments with enterprise values less than $500.0 million. Investments will typically require between $25.0 million and $100.0 million of equity.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE PERFORMANCE.

THESE MATERIALS ARE NOT INTENDED AS AN OFFER TO SELL, OR THE SOLICITATION OF AN OFFER TO PURCHASE, ANY SECURITY. THIS PRESENTATION HAS BEEN PREPARED SOLELY FOR INFORMATIONAL AND DISCUSSION PURPOSES ONLY. THE INFORMATION HEREIN IS NOT INTENDED TO BE COMPLETE AND THE DESCRIPTION OF THE FUND IN THESE MATERIALS IS QUALIFIED IN IN ITS ENTIRETY BY THE TERMS AND INFORMATION CONTAINED IN THE FUND'S OFFERING DOCUMENTS, INCLUDING, WITHOUT LIMITATION, THE FUND'S PRIVATE PLACEMENT MEMORANDUM, PARTNERSHIP AGREEMENT AND SUBSCRIPTION AGREEMENT ("GOVERNING DOCUMENTS"). NOTHING HEREIN CONSTITUTES OR SHOULD NOT BE CONSTRUED AS INVESTMENT ADVICE.

THE INFORMATION HEREIN IS NOT INTENDED TO PROVIDE, AND SHOULD NOT BE RELIED UPON FOR, ACCOUNTING, TAX OR LEGAL ADVICE. YOU SHOULD CONSULT YOUR TAX, LEGAL AND/OR ACCOUNTING ADVISERS ABOUT ANY MATTERS DISCUSSED HEREIN.

INTERESTS IN THE FUND HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER ANY STATE OR OTHER SECURITIES LAWS OR THE LAWS OF ANY NON-U.S. JURISDICTION. THE INTERESTS WILL BE OFFERED AND SOLD FOR INVESTMENT ONLY TO QUALIFYING INVESTORS PURSUANT TO THE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN COMPLIANCE WITH THE APPLICABLE SECURITIES LAWS OF THE STATES AND OTHER JURISDICTIONS (INCLUDING NON-U.S. JURISDICTIONS) WHERE THE OFFERING WILL BE MADE. THERE WILL BE NO PUBLIC MARKET FOR INTERESTS IN THE FUND, AND THERE IS NO OBLIGATION ON THE PART OF ANY PERSON TO REGISTER THE INTERESTS UNDER THE SECURITIES ACT. INTERESTS IN THE FUND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE SECURITIES ACT AND ANY APPLICABLE NON-U.S. SECURITIES LAWS, PURSUANT TO REGISTRATION OR AN EXEMPTION THEREFROM. THE TRANSFERABILITY OF THE INTERESTS WILL BE FURTHER RESTRICTED BY THE TERMS OF THE FUND'S GOVERNING DOCUMENTS. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF AN INVESTMENT IN THE FUND FOR AN INDEFINITE PERIOD OF TIME.

NONE OF THE INFORMATION CONTAINED HEREIN WAS PREPARED BY THE FUND OR ANY UNDERLYING PORTFOLIO FUNDS IDENTIFIED HEREIN, IF ANY, THE GENERAL PARTNERS THEREOF OR ANY OF THEIR RESPECTIVE AFFILIATES. BY ACCEPTING THESE MATERIALS, YOU HEREBY ACKNOWLEDGE AND AGREE TO ALL OF THE TERMS AND CONDITIONS IN THESE DISCLOSURES.

PRIVATE EQUITY INVESTMENT POLICY

Discretion in a Box (Roles and Responsibilities)

	Role of the Board	Role of Staff	Role of the Private Equity Consultant
Strategy/Policy	• Select Private Equity Consultant. • Approve asset class funding level. • Review and approve the Private Equity Annual Strategic Plan which includes allocation targets and ranges.	• With Private Equity Consultant and General Fund Consultant, develop policies, procedures, guidelines, allocation targets, ranges, assumptions for recommendation to the Board.	• With staff and General Fund Consultant, develop policies, procedures, guidelines, allocation targets, ranges, assumptions for recommendation to the Board.
Investment Selection	• Review investment analysis reports. • Review and approve investments in new management groups of amounts greater than $50 million prior to investment. • Review and approve investments in follow-on partnerships of amounts greater than $100 million prior to investment.	• Refer investments and forward to Private Equity Consultant for preliminary screening. • Conduct meetings with potential new investments prior to recommending to the Board, if practical. • In conjunction with Private Equity Consultant, invest up to $50 million for new partnerships, and up to $100 million for follow-on funds without Board approval. If staff opposes, refer to Board for decision. • In conjunction with Private Equity Consultant, make recommendations to Board for approval for investments over $50 million in new partnerships, or over $100 million in follow-on funds. • Execute agreements.	• Conduct extensive analysis and due diligence on investments. • Recommend for Board approval investments over $50 million for new managers, or over $100 million in follow-on funds. • With staff concurrence, approve investment of up to $50 million for new partnerships, and up to $100 million in follow-on funds. • Provide investment analysis report for each new investment and sale of partnership fund interest on the secondary market or to other limited partner(s) or potential buyer(s). • Communicate with staff regarding potential opportunities undergoing extensive analysis and due diligence. • Coordinate meetings between staff, Board, and general partner upon request. • Negotiate legal documents.
Investment Monitoring	• Review quarterly, annual, and other periodic monitoring reports. • Approve sale of partnership fund interest on the secondary market or to other limited partner(s) or potential buyer(s)	• Review quarterly, annual and other periodic monitoring reports prepared by the Private Equity Consultant. • Conduct meetings with existing managers periodically. • Attend annual partnership meetings when appropriate. • Fund capital calls and distributions. • Review Private Equity Consultant's recommendations on amendments and consents. • Execute amendments to agreements and consents. • Manage and approve the wind-down and/or dissolve private equity fund investment(s) with private equity consultant's concurrence. • Manage and execute the sale of partnership interest on the secondary market or to other limited partner(s) or potential buyer(s).	• Maintain regular contact with existing managers in the portfolio to ascertain significant events within the portfolio. • Recommend amendments and consents to staff for approval. • Provide quarterly, annual, and other periodic monitoring reports.

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

REPORT TO BOARD OF ADMINISTRATION **MEETING: NOVEMBER 10, 2020**
From: Neil M. Guglielmo, General Manager **ITEM: VII – E**

SUBJECT: **NOTIFICATION OF COMMITMENT OF UP TO $50 MILLION IN FORTRESS CREDIT OPPORTUNITIES FUND V EXPANSION (A) LP**

ACTION: ☐ CLOSED: ☐ CONSENT: ☐ RECEIVE & FILE: ☒

Recommendation

That the Board receive and file this notice of the commitment of up to $50 million in Fortress Credit Opportunities Fund V Expansion (A) LP.

Executive Summary

Fortress Credit Opportunities Fund V Expansion (A) LP will focus on post-COVID-19 opportunistic and distressed debt investments across a broad range of opportunities.

Discussion

Consultant Recommendation
Aksia TorreyCove Partners LLC (Aksia TorreyCove), LACERS' Private Equity Consultant, recommended a commitment of up to $50 million in Fortress Credit Opportunities V Expansion (A) LP (the Fund), an opportunistic debt strategy managed by FCO Fund V GP LLC (Fortress or the GP). Fund management and incentive fees are comparable to similar strategies; the GP will invest alongside limited partners, providing alignment of interests. This recommendation is consistent with the Private Equity Program 2020 Strategic Plan adopted by the Board on December 10, 2019.

Background
Fortress was established in 1998 as a private equity firm, although it now manages a range of investment strategies with a primary focus on credit investing. Fortress was publicly listed until 2017 when it was purchased by Japanese conglomerate SoftBank Group. The GP has U.S. offices in New York (headquarters), Los Angeles, San Francisco, Dallas, Atlanta, and New Canaan, Connecticut, with international offices in London, Frankfurt, Hong Kong, Rome, Shanghai, Sydney, and Tokyo. The Fortress credit team consists of 165 investment professionals, and the GP has approximately 850 employees worldwide with assets under management of $45.5 billion as of June 30, 2020.

Fortress is a new general partner relationship for LACERS.

Investment Thesis
The Fund is a post-COVID-19 extension vehicle of the flagship Fortress Credit Opportunities V fund, and is being raised to target the expected opportunity set from the economic disruption resulting from the global pandemic. Historical investment activity in the Fortress Credit Opportunity funds has been broad-based, with the GP leveraging a large credit team to identify the best opportunities across corporate credit, structured credit, real estate, and distressed secondaries. The expansion fund utilizes the same credit team and investment approach as the flagship fund, but will start with a balance sheet that does not include any pre-COVID-19 investments.

The GP maintains a disciplined investment approach with a focus on downside protection through credit enhancements and well-structured security packages. Risk is also managed through portfolio construction, with portfolios typically consisting of more than 100 individual positions. Furthermore, Fortress has a team of 120 people dedicated to monitoring existing investments and providing workout capabilities as needed.

Placement Agent
The GP did not use a placement agent in connection with LACERS' investment.

Staff Recommendation
Staff concurred with Aksia TorreyCove's recommendation. The commitment has been consummated pursuant to the Discretion in a Box (Roles and Responsibilities) section of the Private Equity Investment Policy; no Board action is required.

Strategic Alignment

Investment in Fortress Credit Opportunities Fund V Expansion (A) LP will allow LACERS to maintain exposure to private equity, pursuant to the Private Equity Program 2020 Strategic Plan, and aligns with the Strategic Plan Goal of optimizing long-term risk adjusted investment returns (Goal IV).

Prepared By: Robert King, Investment Officer I, Investment Division

NMG/RJ/BF/WL/RK:rm

Attachments: 1. Aksia TorreyCove Investment Notification
2. Discretion in a Box

Aksia LLC

Fortress Credit Opportunities Fund V Expansion (A) LP
Investment Notification

Aksia
New York • London • Tokyo

www.aksia.com

Fortress Credit Opportunities Fund V Expansion (A) LP

General Partner	• FCO Fund V GP LLC ("Fortress" or the "Firm")
Fund	• Fortress Credit Opportunities Fund V Expansion (A) LP ("FCO V Expansion" or the "Fund")
Firm Founded	• 1998
Strategy	• Credit / Distressed
Sub-Strategy	• Credit / Distressed
Geography	• North America and Europe
Team	• 150+ investment professionals
Senior Partners	• Pete Briger, Dean Dakolias, Drew McKnight, and Josh Pack (Managing Partners and Co-CIO's)
Office Locations	• New York, Los Angeles, Dallas, Atlanta, San Francisco, New Canaan, London, Frankfurt, Rome, Sydney, Tokyo, Hong Kong, Shanghai
Industries	• Diversified
Target Fund Size	• $3.0 billion
LACERS Investment	• Up to $50.0 million

Investment Highlights

- Fortress operates a large investment platform which includes over 500 professionals across 13 offices, in addition to ~50 operating servicing partners through which help the Firm originate deals.

- Fortress' large investment platform allows the Firm to be flexible and invest across different phases of the evolving distressed opportunity set.

- Over the past 12 years of the Fortress Credit Opportunities series of funds has deployed $16 billion across 475 investments.

Fortress Credit Opportunities Fund V Expansion (A) LP

Firm and Background

- Fortress was established in 1998 as a private equity firm, although it now manages a broad range of investment strategies with a primary focus on credit investing. Fortress was publicly listed until 2017, at which point, SoftBank Group acquired the business through a take-private transaction.

- Fortress Credit Group was set up by Pete Briger and Dean Dakolias when they joined the firm in 2002 and 2003, respectively.

- The Fortress Credit Opportunities ("FCO") series is the Firm's deep-distressed investment strategy which was launched in the aftermath of the global financial crisis.

Investment Strategy

- The FCO strategy is relatively broad-based; historical investment activity includes corporate debt and equity, real estate loans, structured credit, non-performing loans, distressed secondaries and real asset investments.

- FCO V Expansion will target opportunistic credit-oriented investments in: (i) distressed and mispriced securities; (ii) financial institutions and specialty finance companies; (iii) orphaned portfolios; (iv) idiosyncratic asset transactions; and/or (v) structured credit transactions.

- There are no formal constraints on geographic exposure, but prior activity has been primarily in the U.S. with European exposure ranging from 10%-30% depending on vintage.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE PERFORMANCE.

THESE MATERIALS ARE NOT INTENDED AS AN OFFER TO SELL, OR THE SOLICITATION OF AN OFFER TO PURCHASE, ANY SECURITY. THIS PRESENTATION HAS BEEN PREPARED SOLELY FOR INFORMATIONAL AND DISCUSSION PURPOSES ONLY. THE INFORMATION HEREIN IS NOT INTENDED TO BE COMPLETE AND THE DESCRIPTION OF THE FUND IN THESE MATERIALS IS QUALIFIED IN IN ITS ENTIRETY BY THE TERMS AND INFORMATION CONTAINED IN THE FUND'S OFFERING DOCUMENTS, INCLUDING, WITHOUT LIMITATION, THE FUND'S PRIVATE PLACEMENT MEMORANDUM, PARTNERSHIP AGREEMENT AND SUBSCRIPTION AGREEMENT ("GOVERNING DOCUMENTS"). NOTHING HEREIN CONSTITUTES OR SHOULD NOT BE CONSTRUED AS INVESTMENT ADVICE.

THE INFORMATION HEREIN IS NOT INTENDED TO PROVIDE, AND SHOULD NOT BE RELIED UPON FOR, ACCOUNTING, TAX OR LEGAL ADVICE. YOU SHOULD CONSULT YOUR TAX, LEGAL AND/OR ACCOUNTING ADVISERS ABOUT ANY MATTERS DISCUSSED HEREIN.

INTERESTS IN THE FUND HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER ANY STATE OR OTHER SECURITIES LAWS OR THE LAWS OF ANY NON-U.S. JURISDICTION. THE INTERESTS WILL BE OFFERED AND SOLD FOR INVESTMENT ONLY TO QUALIFYING INVESTORS PURSUANT TO THE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN COMPLIANCE WITH THE APPLICABLE SECURITIES LAWS OF THE STATES AND OTHER JURISDICTIONS (INCLUDING NON-U.S. JURISDICTIONS) WHERE THE OFFERING WILL BE MADE. THERE WILL BE NO PUBLIC MARKET FOR INTERESTS IN THE FUND, AND THERE IS NO OBLIGATION ON THE PART OF ANY PERSON TO REGISTER THE INTERESTS UNDER THE SECURITIES ACT. INTERESTS IN THE FUND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE SECURITIES ACT AND ANY APPLICABLE NON-U.S. SECURITIES LAWS, PURSUANT TO REGISTRATION OR AN EXEMPTION THEREFROM. THE TRANSFERABILITY OF THE INTERESTS WILL BE FURTHER RESTRICTED BY THE TERMS OF THE FUND'S GOVERNING DOCUMENTS. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF AN INVESTMENT IN THE FUND FOR AN INDEFINITE PERIOD OF TIME.

NONE OF THE INFORMATION CONTAINED HEREIN WAS PREPARED BY THE FUND OR ANY UNDERLYING PORTFOLIO FUNDS IDENTIFIED HEREIN, IF ANY, THE GENERAL PARTNERS THEREOF OR ANY OF THEIR RESPECTIVE AFFILIATES. BY ACCEPTING THESE MATERIALS, YOU HEREBY ACKNOWLEDGE AND AGREE TO ALL OF THE TERMS AND CONDITIONS IN THESE DISCLOSURES.

PRIVATE EQUITY INVESTMENT POLICY

Discretion in a Box (Roles and Responsibilities)

<table>
<tr><th></th><th>Role of the Board</th><th>Role of Staff</th><th>Role of the Private Equity Consultant</th></tr>
<tr><td>Strategy/Policy</td><td>Select Private Equity Consultant.
Approve asset class funding level.
Review and approve the Private Equity Annual Strategic Plan which includes allocation targets and ranges.</td><td>With Private Equity Consultant and General Fund Consultant, develop policies, procedures, guidelines, allocation targets, ranges, assumptions for recommendation to the Board.</td><td>With staff and General Fund Consultant, develop policies, procedures, guidelines, allocation targets, ranges, assumptions for recommendation to the Board.</td></tr>
<tr><td>Investment Selection</td><td>Review investment analysis reports.
Review and approve investments in new management groups of amounts greater than $50 million prior to investment.
Review and approve investments in follow-on partnerships of amounts greater than $100 million prior to investment.</td><td>Refer investments and forward to Private Equity Consultant for preliminary screening.
Conduct meetings with potential new investments prior to recommending to the Board, if practical.
In conjunction with Private Equity Consultant, invest up to $50 million for new partnerships, and up to $100 million for follow-on funds without Board approval. If staff opposes, refer to Board for decision.
In conjunction with Private Equity Consultant, make recommendations to Board for approval for investments over $50 million in new partnerships, or over $100 million in follow-on funds.
Execute agreements.</td><td>Conduct extensive analysis and due diligence on investments.
Recommend for Board approval investments over $50 million for new managers, or over $100 million in follow-on funds.
With staff concurrence, approve investment of up to $50 million for new partnerships, and up to $100 million in follow-on funds.
Provide investment analysis report for each new investment and sale of partnership fund interest on the secondary market or to other limited partner(s) or potential buyer(s).
Communicate with staff regarding potential opportunities undergoing extensive analysis and due diligence.
Coordinate meetings between staff, Board, and general partner upon request.
Negotiate legal documents.</td></tr>
<tr><td>Investment Monitoring</td><td>Review quarterly, annual, and other periodic monitoring reports.
Approve sale of partnership fund interest on the secondary market or to other limited partner(s) or potential buyer(s)</td><td>Review quarterly, annual and other periodic monitoring reports prepared by the Private Equity Consultant.
Conduct meetings with existing managers periodically.
Attend annual partnership meetings when appropriate.
Fund capital calls and distributions.
Review Private Equity Consultant’s recommendations on amendments and consents.
Execute amendments to agreements and consents.
Manage and approve the wind-down and/or dissolve private equity fund investment(s) with private equity consultant’s concurrence.
Manage and execute the sale of partnership interest on the secondary market or to other limited partner(s) or potential buyer(s).</td><td>Maintain regular contact with existing managers in the portfolio to ascertain significant events within the portfolio.
Recommend amendments and consents to staff for approval.
Provide quarterly, annual, and other periodic monitoring reports.</td></tr>
</table>