LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

# Board of Administration Agenda

## REGULAR MEETING

## TUESDAY, OCTOBER 27, 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 October 27, 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#** 824 1299 6957

***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.

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|---|---|
| President: | Cynthia M. Ruiz |
| Vice President: | Sung Won Sohn |
| Commissioners: | Annie Chao<br>Elizabeth Lee<br>Sandra Lee<br>Nilza R. Serrano<br>Michael R. Wilkinson |
| Manager-Secretary: | Neil M. Guglielmo |
| Executive Assistant: | Ani Ghoukassian |
| Legal Counsel: | City Attorney's Office<br>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 SEPTEMBER 22, 2020 AND POSSIBLE BOARD ACTION

III. BOARD PRESIDENT VERBAL REPORT

IV. GENERAL MANAGER VERBAL REPORT

A. REPORT ON DEPARTMENT OPERATIONS

B. UPCOMING AGENDA ITEMS

V. RECEIVE AND FILE ITEMS

A. MONTHLY REPORT ON SEMINARS AND CONFERENCES FOR SEPTEMBER 2020

VI. COMMITTEE REPORT(S)

A. INVESTMENT COMMITTEE VERBAL REPORT FOR THE MEETING ON OCTOBER 13, 2020

VII. INVESTMENTS

A. CHIEF INVESTMENT OFFICER VERBAL REPORT

B. INVESTMENT MANAGER CONTRACT WITH AQR CAPITAL MANAGEMENT, LLC REGARDING THE MANAGEMENT OF AN ACTIVE NON-U.S. SMALL CAP EQUITIES PORTFOLIO AND POSSIBLE BOARD ACTION

C. INVESTMENT MANAGER CONTRACT WITH QUANTITATIVE MANAGEMENT ASSOCIATES, LLC REGARDING THE MANAGEMENT OF AN ACTIVE EMERGING MARKETS CORE EQUITIES PORTFOLIO AND POSSIBLE BOARD ACTION

D. CONTINUED DISCUSSION OF SECURITIES LENDING PROGRAM MODIFICATIONS AND POSSIBLE BOARD ACTION

E. CONTINUED DISCUSSION OF TEMPORARY ASSET ALLOCATION AND REBALANCING POLICIES 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**

IX. BOARD/DEPARTMENT ADMINISTRATION

A. CONSIDERATION OF 2019-20 GENERAL MANAGER’S MERIT PAY AND POSSIBLE BOARD ACTION

B. RECEIVE AND FILE - GASB 68 AND GASB 75 VALUATIONS BASED ON JUNE 30, 2019 MEASUREMENT DATE FOR EMPLOYER REPORTING AS OF JUNE 30, 2020

X. OTHER BUSINESS

XI. NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, November 10, 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

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 September 22, 2020, meeting was conducted via telephone and/or videoconferencing.

**Agenda of:** **Oct. 27, 2020**

**Item No:** **II**

September 22, 2020

10:00 a.m.

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| PRESENT via Zoom Meeting: | President: | Cynthia M. Ruiz |
| | Vice President: | Sung Won Sohn |
| | Commissioners: | Annie Chao<br>Elizabeth Lee<br>Sandra Lee<br>Nilza R. Serrano<br>Michael R. Wilkinson |
| | Manager-Secretary: | Neil M. Guglielmo |
| | Legal Counselor: | Anya Freedman |
| PRESENT at LACERS offices: | Executive Assistant: | Ani Ghoukassian |

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

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.

II

APPROVAL OF MINUTES FOR THE REGULAR MEETING OF AUGUST 25, 2020 AND POSSIBLE BOARD ACTION – Commissioner Wilkinson moved approval, seconded by Commissioner Elizabeth Lee, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Sohn, and President Ruiz -7; Nays, None.

III

BOARD PRESIDENT VERBAL REPORT – President Ruiz expressed her appreciation to the Commissioners and staff for their patience during these challenging times.

IV

GENERAL MANAGER VERBAL REPORT

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

- New Departmental Chief Accountant
- New HQ/977 Broadway Building
- Mail delays
- Open Enrollment
- The Aging Mastery Program (AMP)
- Service Center stats
- Retirement Abeyance/CSIP Virtual Live Q&A Session
- LAWA SIP Retirements
- City SIP
- COVID-19 and LACERS Members

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

- October: CSIP Supplemental Budget
- October: Cybersecurity Ad-Hoc Meeting
- October: Member Services year-end statistics report

V

RECEIVE AND FILE ITEMS

A. MONTHLY REPORT ON SEMINARS AND CONFERENCES FOR AUGUST 2020 – This report was received by the Board and filed.

VI

COMMITTEE REPORT(S)

A. INVESTMENT COMMITTEE VERBAL REPORT ON THE MEETING OF SEPTEMBER 8, 2020 – Vice President Sohn stated the Committee approved the contract with Barrow, Hanley, Mewhinney & Strauss, LLC, approved the semi-finalists of the Core Fixed Income Investment Manager search, and were presented with the Proxy Voting Activity Report for the period of July 1, 2019 to June 30, 2020.

VII

INVESTMENTS

A. CHIEF INVESTMENT OFFICER VERBAL REPORT – Rod June, Chief Investment Officer, reported on the portfolio value at $19.2 billion as of September 21, 2020. Mr. June discussed the following items:

- Term Asset-Backed Securities Loan Facility (TALF) Fund
- Pacific Center for Asset Management (PCAM) Update

B. PRESENTATION BY NEPC, LLC OF THE PORTFOLIO PERFORMANCE REVIEW REPORT FOR THE QUARTER ENDING JUNE 30, 2020 – Carolyn Smith, Partner and Kevin Novak, Consultant, with NEPC presented and discussed this item with the Board for 1 hour and 15 minutes.

C. CONSENT OF ASSIGNMENT OF BARROW, HANLEY, MEWHINNEY & STRAUSS, LLC CONTRACT AND POSSIBLE BOARD ACTION – Ellen Chen, Investment Officer I, presented this item to Board. Commissioner Elizabeth Lee moved approval of the following Resolution:

**CONSENT TO ASSIGN CONTRACT WITH**
**BARROW, HANLEY, MEWHINNEY & STRAUSS, LLC**

**RESOLUTION 200922-A**

WHEREAS, LACERS has an existing contract with Barrow, Hanley, Mewhinney & Strauss, LLC (BHMS) for management of an active non-U.S. equities developed markets value portfolio; and,

WHEREAS, BHMS has entered into an acquisition agreement with Perpetual Limited (Perpetual), a publicly traded Australian financial services company; and

WHEREAS, Perpetual will acquire a 75.1% controlling equity stake in BHMS from BrightSphere Investment Group, the current majority owner of BHMS; and,

WHEREAS, under the Investment Advisers Act of 1940 and pursuant to LACERS' contract with BHMS, the change in control of BHMS is deemed to be a contract assignment that requires written consent of the Board; and,

WHEREAS, staff has conducted appropriate due diligence on the acquisition of BHMS.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby consents to the assignment of LACERS' existing contract with BHMS to Perpetual; and, authorizes the General Manager to approve and execute the necessary documents, subject to satisfactory business and legal terms.

Which motion was seconded by Commissioner Serrano, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Sohn, and President Ruiz -7; Nays, None.

D. NOTIFICATION OF COMMITMENT OF UP TO $40 MILLION IN CERBERUS INSTITUTIONAL REAL ESTATE PARTNERS V, L.P. – This report was received by the Board and filed.

VIII

DISABILITY RETIREMENT APPLICATION(S)

A. ADOPTION OF FINDINGS OF FACT FOR HAGOP TCHAKERIAN AND POSSIBLE BOARD ACTION – Commissioner Wilkinson moved approval, seconded by Commissioner Serrano, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Sohn, and President Ruiz -7; Nays, None.

President Ruiz recessed the Regular Meeting at 12:07 p.m. for a break and reconvened the Regular Meeting at 12:12 p.m.

*Item X-D taken out of order.*

X

BOARD/DEPARTMENT ADMINISTRATION

D. ASSUMPTIONS FOR THE JUNE 30, 2020 RETIREE HEALTH ACTUARIAL VALUATION AND POSSIBLE BOARD ACTION – Paul Angelo, Actuary with Segal, presented and discussed this item with the Board for 15 minutes. Commissioner Serrano moved approval, seconded by Commissioner Elizabeth Lee, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Sohn, and President Ruiz -7; Nays, None.

IX

LEGAL/LITIGATION

A. BOARD EDUCATION REGARDING REVISIONS TO FAIR POLITICAL PRACTICES COMMISSION PUBLIC DISCLOSURE RULES – Anya Freedman, Assistant City Attorney and Joshua Geller, Deputy City Attorney presented and discussed this Board Education with the Commissioners for 20 minutes.

B. RESCISSION OF BOARD ACTION TO PUBLISH REQUEST FOR PROPOSALS FOR OUTSIDE SECURITIES MONITORING AND LITIGATION COUNSEL; APPROVAL OF ONE-YEAR EXTENSION OF SECURITIES MONITORING CONTRACTS WITH BERNSTEIN LITOWITZ BERGER & GROSSMAN LLP AND BLEICHMAR FONTI & AULD LLP, AND POSSIBLE BOARD ACTION – Commissioner Elizabeth Lee moved approval, seconded by Commissioner Serrano, and adopted by the following vote: Ayes, Commissioners Chao, Elizabeth Lee, Sandra Lee, Serrano, Wilkinson, Vice President Sohn, and President Ruiz -7; Nays, None.

X

BOARD/DEPARTMENT ADMINISTRATION

A. LEGISLATIVE UPDATE OF SEPTEMBER 2020 AND POSSIBLE BOARD ACTION – Chhintana Kurimoto, Management Analyst with Administration Division, presented this item to the Board for 10 minutes. The Board took no action and the report was received by the Board and filed.

B. PROPOSED REVISION TO THE LACERS TRAVEL POLICY AND POSSIBLE BOARD ACTION – Edeliza Fang, Senior Benefits Analyst II, with Administration Division presented this item to the Board. After a 35-minute discussion, Commissioner Serrano moved to approve staff's recommended revisions with an amendment that Cal Travel Store is the preferred method to book flights but not exclusive, and if using another source to book the flight, that the cost would be equal to or less than Cal Travel Store, seconded by Commissioner Sandra Lee. Further discussion continued, and Commissioner Serrano withdrew her motion. President Ruiz stated this item will be sent back to staff for the revisions discussed and then presented to the Governance Committee.

C. REVIEW OF BOARD PROCEDURES ON OFFICER ELECTIONS AND POSSIBLE BOARD ACTION – Chhintana Kurimoto, Management Analyst with Administration Division, presented this item to the Board. After discussion, Commissioner Chao made a motion to limit Officer terms to two years, seconded by Commissioner Wilkinson. The motion did not pass and the vote was as follows: Ayes, Commissioner Chao and Wilkinson -2; Nays, Commissioners Elizabeth Lee, Sandra Lee, Serrano, Vice President Sohn, and President Ruiz -5.

XI

OTHER BUSINESS – No other business was discussed.

XII

NEXT MEETING: The next Regular meeting of the Board is scheduled for Tuesday, October 13, 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.

XIII

ADJOURNMENT – There being no further business before the Board, President Ruiz adjourned the Meeting at 1:48 p.m. in the memory of all the retirees who have passed due to Covid-19.

Cynthia M. Ruiz
President

Neil M. Guglielmo
Manager-Secretary

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| **Agenda of:** **<u>OCT. 27, 2020</u>** |
| **Item No:** **<u>V-A</u>** |

**MONTHLY REPORT ON SEMINARS AND CONFERENCES**
**ATTENDED BY BOARD MEMBERS ON BEHALF OF LACERS**
**(FOR THE MONTH OF SEPTEMBER 2020)**

In accordance with Section V.H.2 of the approved Board Education and Travel Policy, Board Members are required to report to the Board, on a monthly basis at the last Board meeting of each month, seminars and conferences they attended as a LACERS representative or in the capacity of a LACERS Board Member which are either complimentary (no cost involved) or with expenses fully covered by the Board Member. This monthly report shall include all seminars and conferences attended during the 4-week period preceding the Board meeting wherein the report is to be presented.

<u>BOARD MEMBER:</u>

President Cynthia M. Ruiz
Vice President Sung Won Sohn

Commissioner Annie Chao
Commissioner Elizabeth Lee
Commissioner Sandra Lee
Commissioner Nilza R. Serrano
Commissioner Michael R. Wilkinson

| DATE(S) OF EVENT | SEMINAR / CONFERENCE TITLE | EVENT SPONSOR (ORGANIZATION) | LOCATION (CITY, STATE) |
|---|---|---|---|
| | **NOTHING TO REPORT** | | |

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

**REPORT TO BOARD OF ADMINISTRATION**

**From: Investment Committee**
Sung Won Sohn, Chair
Elizabeth Lee
Nilza R. Serrano

**MEETING: OCTOBER 27, 2020**
**ITEM: VII – B**

SUBJECT: **INVESTMENT MANAGER CONTRACT WITH AQR CAPITAL MANAGEMENT, LLC REGARDING THE MANAGEMENT OF AN ACTIVE NON-U.S. SMALL CAP EQUITIES PORTFOLIO AND POSSIBLE BOARD ACTION**

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

## Recommendation

That the Board approve:

1. Termination of the contract with AQR Capital Management, LLC for management of an active non-U.S. small cap equities portfolio.

2. Redeployment of the assets into the passive SSgA MSCI EAFE Small Cap Index Non-Lending Fund managed by State Street Global Advisors.

## Executive Summary

At its meeting of October 13, 2020, the Committee considered and concurred with staff's recommendations to terminate the contract with AQR Capital Management, LLC (AQR) and redeploy the assets into the passive SSgA MSCI EAFE Small Cap Index Non-Lending Fund.

## Discussion

AQR has managed an active non-U.S. small cap equities portfolio for LACERS since February 2014. LACERS' portfolio is currently valued at $276 million as of September 30, 2020. AQR was placed "On Watch" for an initial one-year period effective May 13, 2019 due to underperformance, pursuant to the LACERS Manager Monitoring Policy (Policy); the "On Watch" status was extended effective May 14, 2020 due to continued underperformance. AQR's current contract expires on January 31, 2021. Staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant, recommend termination of this contract.

On October 13, 2020, the Committee discussed the attached staff report (Attachment 1) and concurred with the recommendations to terminate AQR's contract and redeploy the assets into the SSgA MSCI EAFE Small Cap Index Non-Lending Fund, a passive commingled fund managed by State Street Global Advisors (State Street). The Committee had no concerns regarding the termination recommendation, but questioned the total amount of LACERS assets to be managed by State Street when combined with its existing mandates. LACERS assets with State Street would total approximately $2.9 billion (15% of total fund assets) should the Board approve the contract termination and redeployment recommendations for AQR and Quantitative Management Associates, LLC. Staff addressed this concern by discussing the low level of business and operational risk associated with State Street's organization and passive strategies. Staff and NEPC will also determine whether to reinvest these assets into an active strategy during the forthcoming asset-liability and risk budgeting studies scheduled for calendar year 2021.

The Committee also inquired about State Street's fees and the transaction cost of transferring the AQR assets to State Street. Staff discussed that State Street's existing contracted annual fee of 10.1 basis points, or approximately $278,600 annually (based on the current value of LACERS assets with AQR), has been renegotiated to an annual fee of 4 basis points, or approximately $110,400 annually. This new rate has been discounted by approximately 60% of the existing contracted fee. Additionally, the estimated one-time transaction cost of transferring the assets to State Street ranges from 60 basis points, or $1.7 million, to 100 basis points, or $2.8 million. This estimated cost includes both explicit costs such as commissions and implicit costs such as the market impact of trading securities.

The Committee concurs with staff's recommendations. Should the Board approve these recommendations, staff would initiate the 30-day written notice of termination clause and transition AQR's assets to State Street as soon as practicable.

**Strategic Alignment**

A contract termination with AQR and reallocation of the assets into the passively managed SSgA MSCI EAFE Small Cap Index Non-Lending Fund managed by State Street will allow the fund to maintain a diversified exposure to the non-U.S. small cap equities markets, which aligns with the Strategic Plan Goal to optimize long-term risk adjusted investment returns (Goal IV). The discussion of the investment manager's profile, strategy, performance, and management fee structure aligns with the Strategic Plan Goal to uphold good governance practices which affirm transparency, accountability, and fiduciary duty (Goal V).

Prepared by: Ellen Chen, Investment Officer I, Investment Division

RJ/BF/EC

Attachments: 1. Investment Committee Recommendation Report dated October 13, 2020
2. Proposed Resolution

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

**REPORT TO INVESTMENT COMMITTEE** **MEETING: OCTOBER 13, 2020**
**From: Neil M. Guglielmo, General Manager** **ITEM: IV**

SUBJECT: **INVESTMENT MANAGER CONTRACT WITH AQR CAPITAL MANAGEMENT, LLC REGARDING THE MANAGEMENT OF AN ACTIVE NON-U.S. SMALL CAP EQUITIES PORTFOLIO AND POSSIBLE COMMITTEE ACTION**

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

## Recommendation

That the Committee recommend to the Board:

1. Termination of the contract with AQR Capital Management, LLC for management of an active non-U.S. small cap equities portfolio.

2. Redeployment of the assets into the passive SSgA MSCI EAFE Small Cap Index Non-lending Fund managed by State Street Global Advisors.

## Executive Summary

AQR Capital Management, LLC (AQR) has managed an active non-U.S. small cap equities portfolio for LACERS since February 2014. LACERS' portfolio is currently valued at $276 million as of September 30, 2020. AQR was placed "On Watch" for an initial one-year period effective May 13, 2019 due to underperformance, pursuant to the LACERS Manager Monitoring Policy (Policy); the "On Watch" status was extended effective May 14, 2020 due to continued underperformance. AQR's current contract expires on January 31, 2020. Staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant, recommend termination of the AQR contract.

## Discussion

*Background*
AQR has managed an active non-U.S. small cap equities portfolio for LACERS since February 2014, and is benchmarked against the MSCI EAFE Small Cap Index. AQR's quantitative investment strategy is based on the philosophy that fundamentals drive stock returns. AQR attempts to identify companies with characteristics such as attractive valuations relative to industry peers, positive stock price momentum, sound accounting practices, healthy balance sheets, and strong management teams. The portfolio management team is led by John Liew, Founding Principal. He is supported by 17 portfolio management and research professionals, 10 of whom hold PhD degrees. LACERS' portfolio was valued at $276 million as of September 30, 2020.

AQR was hired through the 2013 Active Core Non-U.S. Small Cap Equities manager search process. The Board authorized a three-year contract on August 13, 2013, a three-year contract renewal on September 27, 2016, and a one-year contract extension on August 27, 2019. The current contract expires on January 31, 2020. AQR has been on “On-Watch” status since May 14, 2019 due to underperformance relative to the benchmark, pursuant to the Policy. As detailed in the Performance section of this report, AQR’s relative performance has not improved and continues to breach Policy criteria.

*Organization*
AQR is majority-owned by its principals and minority-owned by Affiliated Managers Group, Inc. (NYSE ticker: AMG), a publicly held asset management holding company. AQR has approximately 800 employees (667 employees in the U.S.) across offices in Greenwich (headquarters), Boston, Chicago, Los Angeles, London, and Sydney. The firm manages approximately $141 billion in total assets, of which approximately $1.3 billion are in the non-U.S. small cap equities strategy as of June 30, 2020.

*Due Diligence*
While the investment team, strategy, and process have remained stable over the contract period, AQR has experienced notable organizational changes in other areas of the firm. On January 8, 2020, AQR announced that it would be reducing its workforce by approximately 10% after experiencing significant asset outflows from its alternative investment strategies over the past two years. This reduction focused on staff cuts in the areas of operations and administration. The investment team that manages LACERS’ account was not impacted by this event and remains intact.

*Performance*
Based on unaudited data as of September 30, 2020, AQR has underperformed its benchmark, net-of-fees, over all time periods as presented in the table below.

| **Annualized Performance as of 9/30/20 (Unaudited and Net-of-Fees)** | | | | | | |
|---|---|---|---|---|---|---|
| | 3-Month | 1-Year | 2-Year | 3-Year | 5-Year | Since Inception |
| AQR Capital | 9.21 | 4.28 | -2.61 | -1.51 | 4.99 | 3.49 |
| MSCI EAFE Small Cap ND | 10.25 | 6.84 | 0.25 | 1.40 | 7.37 | 4.68 |
| *% of Excess Return* | *-1.04* | *-2.56* | *-2.86* | *-2.91* | *-2.38* | *-1.19* |

*Inception Date: 2/24/2014*

Calendar year performance is presented in the table below as supplemental information.

| **Calendar Year Performance as of 12/31/19 (Net-of-Fees)** | | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2/24/14-12/31/14 |
| AQR Capital | 22.06 | -19.92 | 33.57 | -1.21 | 13.18 | -7.15 |
| MSCI EAFE Small Cap ND | 24.96 | -17.89 | 33.01 | 2.18 | 9.59 | -7.61 |
| *% of Excess Return* | *-2.90* | *-2.03* | *0.56* | *-3.39* | *3.59* | *0.46* |

On May 13, 2019, AQR was placed "On Watch" for an initial one-year period for breaching the following Policy criteria based on the performance as of March 31, 2019:

1. Annualized net performance relative to its benchmark for trailing 3 years underperforms in 8 of 12 previous quarters.
2. Annualized net performance is below benchmark for trailing 5 years
3. Annualized net Information Ratio trailing 5 years relative to its benchmark is below 0.20

AQR's "On Watch" status was extended for another one-year period effective May 14, 2020 for continued breach of the three criteria listed above, based on performance as of March 31, 2020. AQR continues to breach criteria #2 and #3 based on unaudited performance as of September 30, 2020. The underperformance is primarily attributed to a value stock tilt within the portfolio, a theme that has been out of favor in recent years.

In light of AQR's continued underperformance, staff and NEPC recommend termination of the contract and redeployment of the assets into the SSgA MSCI EAFE Small Cap Index Non-lending Fund, a passive commingled fund managed by State Street Global Advisors (State Street). This fund is available to LACERS under the multi-passive index fund contract currently in place with State Street. Based on an analysis presented in the attached NEPC report (Attachment 1), replacing AQR's active strategy with a passive strategy will not materially impact the current risk-return profile of LACERS' non-U.S. equities asset class.

*Fees*
LACERS currently pays AQR an effective fee of 60 basis points (0.60%), which is approximately $1.7 million annually based on the value of LACERS' assets as of September 30, 2020. This fee ranks in the 15th percentile among its peers in the eVestment EAFE Small Cap Universe (i.e., AQR's fee is lower than 85% of peers). The annual fee for State Street's passive strategy would be 4 basis points (0.04%), or approximately $110,400. Additionally, LACERS would incur a one-time transaction cost for moving the assets from the AQR account to the State Street fund; the estimated transaction fee may range from 60 basis points (0.60%,) or $1.7 million, to 100 basis points (1.00%), or $2.8 million.

Should the Committee and Board concur with this contract termination recommendation, staff would initiate the 30-day written notice of termination clause and transfer of assets as soon as practicable.

*General Fund Consultant Opinion*
NEPC concurs with this recommendation.

## Strategic Alignment

A contract termination with AQR and reallocation of the assets into the passively managed SSgA MSCI EAFE Small Cap Index Non-lending Fund managed by State Street will allow the fund to maintain a diversified exposure to the non-U.S. small cap equities markets, which aligns with the Strategic Plan Goal to optimize long-term risk adjusted investment returns (Goal IV). The discussion of the investment manager's profile, strategy, performance, and management fee structure aligns with the Strategic Plan Goal to uphold good governance practices which affirm transparency, accountability, and fiduciary duty (Goal V).

Prepared By: Ellen Chen, Investment Officer I, Investment Division

NMG/RJ/BF/EC:jp

Attachment: 1. Consultant Recommendation – NEPC, LLC

NEPC, LLC

**To:** Los Angeles City Employees' Retirement System Investment Committee

**From:** NEPC, LLC

**Date:** October 13, 2020

**Subject:** AQR Capital Management, LLC– Contract Termination

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## Recommendation

NEPC recommends Los Angeles City Employees' Retirement System (LACERS) terminate the contract that is currently in place with AQR Capital Management, LLC ('AQR') and transfer the assets to a MSCI EAFE Small Cap Index Fund. The rationale for the recommendation is based on underperformance over all time periods measured, loss of assets at the firm level and the desire to reduce investment management fees.

## Background

AQR was funded on February 24, 2014 to provide the Plan with small capitalization public equity exposure across non-U.S. developed markets. As of August 31, 2020, AQR managed $277.6 million, or 1.4% of Plan assets. The performance objective is to outperform the MSCI EAFE Small Cap Index, net of fees, annualized over a full market cycle (normally three-to-five years). Since May of 2019, the account has been on Watch due to performance based on LACERS' Manager Monitoring Policy.

AQR was founded in 1998 by Clifford Asness, Ph.D., David Kabiller, CFA, Robert Krail, Ph.D., and John Liew, Ph.D. Messrs. Asness, Krail and Liew first met as students in the graduate Ph.D. finance program at the University of Chicago. AQR is a Delaware Limited Liability Company. AQR Capital Management Holdings, LLC is a 100% owner of AQR Capital Management, LLC, whose principals hold majority interest in the firm (approximately 70%). Affiliated Managers Group ('AMG'), a publicly traded company, holds a minority interest (less than 30%) in AQR Capital Management Holdings, LLC.

The firm manages approximately $141.3 billion and has 3,553 accounts; $133.9 billion of which are tax-exempt assets in 1,100 accounts. The firm employs approximately 800-to-900 people and over 200 are investment professionals across portfolio management, research and trading while the rest work in client service, risk monitoring and compliance roles. The firm is headquartered in Greenwich, Connecticut and has marketing/ client service offices in Chicago, Illinois, London, England, Sydney, Australia, Los Angeles, California and Boston, Massachusetts.

In the first quarter of 2020, AQR announced that it would reduce approximately 10% of its workforce after experiencing significant asset outflows over the past two years. AQR has seen assets under management fall over 50% from the year ended 2017 AUM of $243 billion to the current $141 billion as of June 30, 2020. Staff reductions follow an ongoing trend in the asset management business of headcount reductions, however, not all investment firms have publicly announced their reductions. NEPC is not aware of any senior level investment staff departing as part of this reduction but the firm has experienced the loss of some senior operational and support staff.

From a portfolio construction perspective, referring to Exhibit 1, NEPC has evaluated the portfolio's fit within the international equity assets class using three tests; 1) Active risk contribution, 2) Alpha Correlation, 3) Beta profile. We have determined that the contribution to active risk of the AQR portfolio is significantly the same when compared to the MSCI EAFE Small Cap Index fund. The portfolio also has a significantly high alpha correlation to the MSCI EAFE Small Cap Index Fund (+0.93 correlation) as well as a very similar beta profile (0.97 in AQR vs 0.99 in MSCI EAFE Small Cap Index). These three tests suggest that replacement of the portfolio with a MSCI EAFE Small Cap Index fund will not lead to a degradation of the active risk profile, will not impact how the portfolios interact with each other (i.e., contribute to alpha) and will not change the beta profile of the asset class overall.

**Performance**

Referring to Exhibit 2, over the past 5 years ended August 31, 2020, AQR has underperformed its benchmark by 2.24% returning 4.55%. Referring to Exhibit 3, since March 1, 2014 (the first full month of performance after the account inception date of February 24, 2014), the AQR portfolio has underperformed the MSCI EAFE Small Cap Index by 1.05%, returning 2.07%, net of fees, through June 30, 2020. In the five-year period ended June 30, 2020, the portfolio underperformed the index by 1.61% (2.20% vs. 3.81%). In the one-year period ended June 30, 2020, the portfolio underperformed the benchmark by 1.76% returning -5.28%. The portfolio has an information ratio of -2.50 and active risk as measured by tracking error was 1.01% since inception ending June 30, 2020. The portfolio's Sharpe Ratio since inception was 1.15 versus the index of 1.25 indicating that active management has not added value when compared to the benchmark.

Referring to Exhibit 4, on a cumulative basis, the portfolio has been eroding its cumulative gains from past periods since the fourth quarter of 2017 with underperformance in the past 9 of 12 quarters; note, underperformance in eight of the last 12 quarters is one rule in the LACERS Manager Monitoring Policy. Investment gains from periods of outperformance have been eroded and are negative since inception. Stock selection and the value theme have been the largest detractors from returns versus the benchmark. More broadly, fundamentally driven investment portfolios have not been rewarded against market capitalization-based benchmarks over the past years as investors continue to demand high growth and lower quality stocks.

**Fees**

The AQR portfolio has an asset-based fee of 0.60% annually. The fee ranks in the 15th percentile among its peers in the eVestment EAFE Small Cap Equity Universe. In other words, 85% of the 81 products included in the peer universe have a higher fee than the LACERS account. LACERS will be able to reduce this fee significantly by utilizing an index fund for this portfolio.

**Conclusion**

AQR has struggled to outperform its benchmark in all time periods ended August 2020. AQR's valuation and quality focus when constructing the portfolio has not been favored in the current growth market environment and can explain much of AQR's under performance. However, when compared to a broad universe of non-US small cap managers, the portfolio ranks at or below the median manager for all time periods measured. There is a very wide range of performance (>28%) in the one-year time frame for the peer group as displayed in Exhibit 3. The majority of managers ranking in the upper half of this universe utilize a growth bias in their investment process. While AQR does factor growth into their model through momentum, it is not the overall driver of their investment process.

AQR has experienced meaningfully large client outflows over the past three years resulting in the need to scale back its workforce by 10%. From a portfolio construction perspective, replacement by a MSCI EAFE Small Cap Index fund results in an overall Non-U.S. Equity portfolio that is similar as current. We do not believe that replacing AQR will lead to a degradation in active risk profile and alpha correlations.

The tables on the following pages provide specific performance information, net of fees referenced above.

Exhibit 1: Non-U.S. Equity Asset Class Alpha Correlations

| Correlations | AQR | BHMS | Lazard | MFS | Oberweis | SSGA | Axiom | DFA | QMA | MSCI EAFE Small Cap Index |
|---|---|---|---|---|---|---|---|---|---|---|
| **AQR** | 1 | 0.32 | 0.43 | 0.11 | 0.61 | 0.57 | -0.28 | -0.32 | -0.33 | 0.93 |
| **BHMS** | 0.32 | 1 | 0.12 | 0 | 0.02 | 0.47 | -0.44 | -0.34 | -0.45 | 0.34 |
| **Lazard** | 0.43 | 0.12 | 1 | 0.51 | 0.42 | 0.49 | -0.33 | -0.51 | -0.5 | 0.44 |
| **MFS** | 0.11 | 0 | 0.51 | 1 | 0.28 | 0.47 | -0.35 | -0.52 | -0.47 | 0.25 |
| **Oberweis** | 0.61 | 0.02 | 0.42 | 0.28 | 1 | 0.36 | 0 | -0.29 | -0.17 | 0.66 |
| **SSGA** | 0.57 | 0.47 | 0.49 | 0.47 | 0.36 | 1 | -0.86 | -0.82 | -0.9 | 0.67 |
| **Axiom** | -0.28 | -0.44 | -0.33 | -0.35 | 0 | -0.86 | 1 | 0.72 | 0.86 | -0.36 |
| **DFA** | -0.32 | -0.34 | -0.51 | -0.52 | -0.29 | -0.82 | 0.72 | 1 | 0.85 | -0.36 |
| **QMA** | -0.33 | -0.45 | -0.5 | -0.47 | -0.17 | -0.9 | 0.86 | 0.85 | 1 | -0.41 |
| **MSCI EAFE Small Cap Index** | 0.93 | 0.34 | 0.44 | 0.25 | 0.66 | 0.67 | -0.36 | -0.36 | -0.41 | 1 |

Red = High Yellow = Moderate Green & White = Low

| | Current | | Scenario 1 | |
|---|---|---|---|---|
| Manager | Portfolio Allocation | Active Risk Contribution | Portfolio Allocation | Active Risk Contribution |
| SSGA | 34% | 7% | 34% | 7% |
| Axiom | 9% | 12% | 9% | 12% |
| DFA | 7% | 2% | 7% | 2% |
| QMA | 8% | 4.60% | 8% | 4.60% |
| AQR | 5% | 13% | | |
| BHMS | 9% | 3% | 9% | 3% |
| Lazard | 11% | 14% | 11% | 14% |
| MFS | 12% | 12% | 12% | 13% |
| Oberweis | 5% | 33% | 5% | 33% |
| MSCI EAFE Index Fund | | | 5% | 11% |

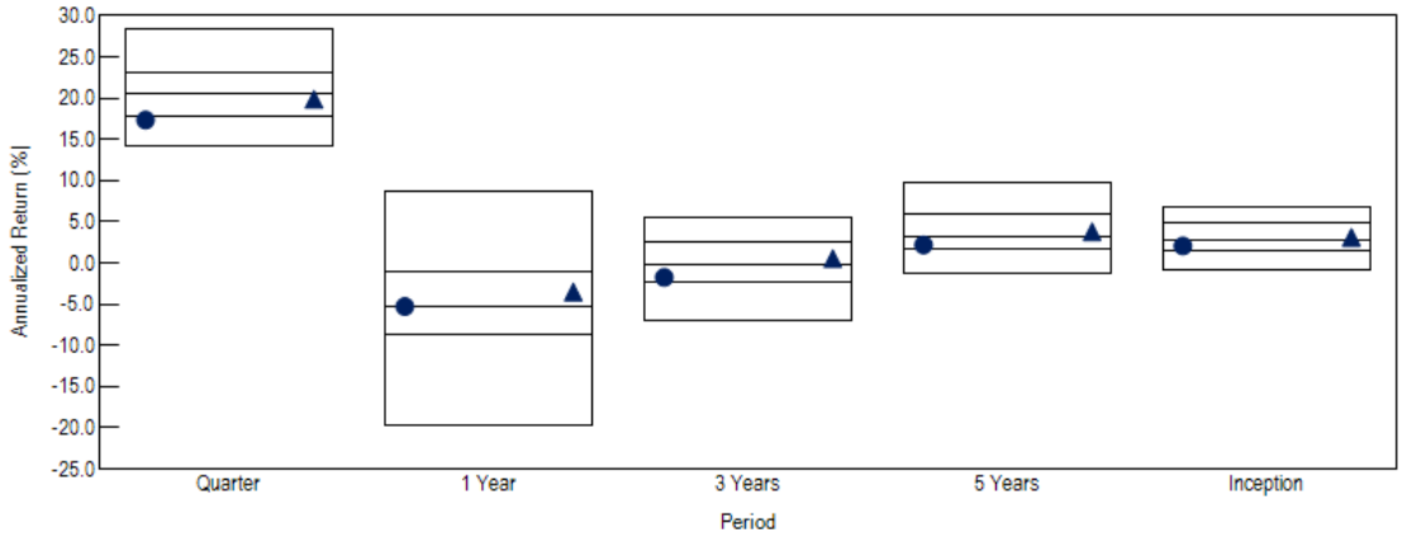
Exhibit 2: Performance Net of Fees Ending August 31, 2020

| | Ending August 31, 2020 Market Value($) | 1 Mo(%) | 3 Mo(%) | YTD(%) | 1 Yr(%) | 3 Yrs(%) | 5 Yrs(%) | Inception(%) |
|---|---|---|---|---|---|---|---|---|
| AQR Capital | 277,560,939 | 5.92 | 10.9 | -6.88 | 7.03 | -0.22 | 4.55 | 3.50 |
| *MSCI EAFE Small Cap* | | *7.46* | *12.59* | *-3.49* | *10.66* | *2.6* | *6.79* | *4.72* |
| Excess | | -1.54 | -1.69 | -3.39 | -3.63 | -2.82 | -2.24 | -1.22 |

NEPC, LLC

Exhibit 3: Universe Comparison

**eV EAFE Small Cap Equity Net Return Comparison**
**Ending June 30, 2020**



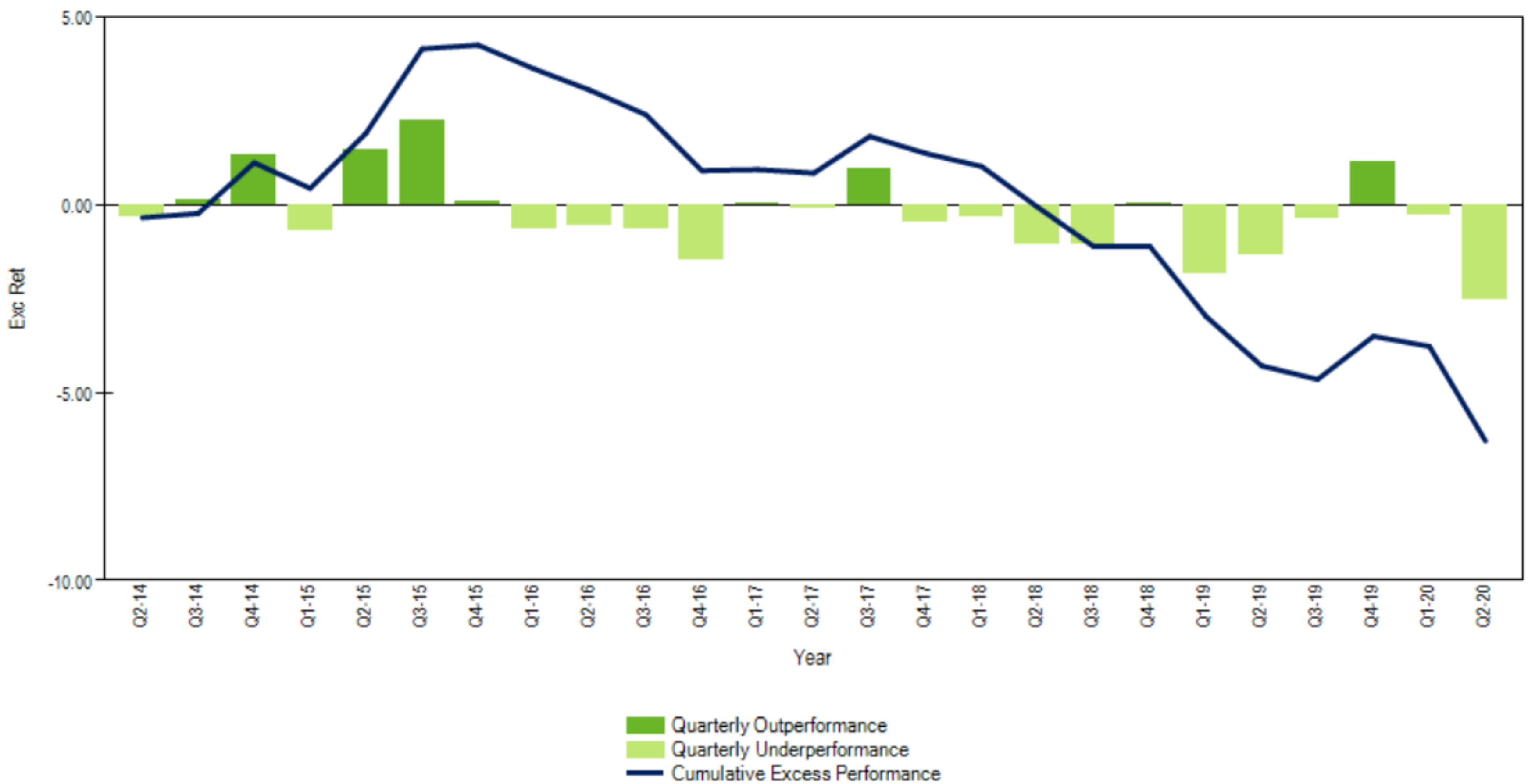

| | Return (Rank) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5th Percentile | 28.33 | | 8.73 | | 5.41 | | 9.85 | | 6.72 | |
| 25th Percentile | 23.12 | | -1.14 | | 2.63 | | 5.85 | | 4.83 | |
| Median | 20.64 | | -5.28 | | -0.31 | | 3.25 | | 2.83 | |
| 75th Percentile | 17.79 | | -8.64 | | -2.37 | | 1.72 | | 1.50 | |
| 95th Percentile | 14.21 | | -19.80 | | -7.01 | | -1.31 | | -0.89 | |
| # of Portfolios | 60 | | 59 | | 55 | | 48 | | 41 | |
| ● AQR Capital | 17.37 | (81) | -5.28 | (50) | -1.74 | (66) | 2.20 | (68) | 2.07 | (67) |
| ▲ MSCI EAFE Small Cap | 19.88 | (55) | -3.52 | (45) | 0.53 | (44) | 3.81 | (45) | 3.12 | (45) |

NEPC performance record starts from the first full month of performance.

NEPC, LLC

Exhibit 4

## Quarterly and Cumulative Excess Performance



CONTRACT TERMINATION
AQR CAPITAL MANAGEMENT, LLC
ACTIVE NON-U.S. SMALL CAP EQUITIES
PORTFOLIO MANAGEMENT

PROPOSED RESOLUTION

WHEREAS, LACERS' current one-year contract extension with AQR Capital Management, LLC for active non-U.S. small cap equities portfolio management expires on January 30, 2021; and,

WHEREAS, AQR was placed "On-Watch" on May 13, 2019, due to performance as of March 31, 2019, in accordance with the LACERS Manager Monitoring Policy (Policy); and,

WHEREAS, AQR's "On Watch" status was extended for another one-year period effective May 14, 2020 for continued breach of Policy criteria based on performance as of March 31, 2020; and,

WHEREAS, as of September 30, 2020, the strategy continues to underperform the benchmark and breach Policy criteria; and,

WHEREAS, on October 27, 2020, the Board approved the Investment Committee's recommendation to terminate the contract with AQR and transition AQR's assets to the SSgA MSCI EAFE Small Cap Index Non-Lending Fund, a passive commingled fund available to LACERS under the Multi-Passive Index Portfolio Management contract with State Street Global Advisors (State Street).

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the termination of the AQR contract and authorizes LACERS staff to redeploy AQR's assets to the SSgA MSCI EAFE Small Cap Index Non-Lending Fund managed by State Street.

October 27, 2020

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

## REPORT TO BOARD OF ADMINISTRATION

**From: Investment Committee**
Sung Won Sohn, Chair
Elizabeth Lee
Nilza R. Serrano

**MEETING: OCTOBER 27, 2020**
**ITEM: VII – C**

SUBJECT: **INVESTMENT MANAGER CONTRACT WITH QUANTITATIVE MANAGEMENT ASSOCIATES, LLC REGARDING THE MANAGEMENT OF AN ACTIVE EMERGING MARKETS CORE EQUITIES PORTFOLIO AND POSSIBLE BOARD ACTION**

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

### Recommendation

That the Board approve:

1. Termination of the contract with Quantitative Management Associates, LLC for management of an active emerging markets core equities portfolio.

2. Redeployment of the assets into the passive SSgA Daily MSCI Emerging Markets Index Non-Lending Fund managed by State Street Global Advisors.

### Executive Summary

At its meeting of October 13, 2020, the Committee considered and concurred with staff's recommendations to terminate the contract with Quantitative Management Associates, LLC (QMA) and redeploy the assets into the passive SSgA Daily MSCI Emerging Markets Index Non-Lending Fund.

### Discussion

QMA has managed an active emerging markets core equities portfolio for LACERS since April 2014. LACERS' portfolio was valued at $458 million as of September 30, 2020. QMA was placed "On Watch" for an initial one-year period effective July 29, 2019, due to underperformance, pursuant to the LACERS Manager Monitoring Policy (Policy). In light of QMA's underperformance as of June 30, 2020 and recent organizational changes, the "On Watch" status was extended for an additional one-year period effective July 29, 2020. QMA's current contract expires on December 31, 2020. Staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant, recommend termination of this contract.

On October 13, 2020, the Committee discussed the attached staff report (Attachment 1) and concurred with the recommendations to terminate QMA's contract and redeploy the assets into the SSgA Daily MSCI Emerging Markets Index Non-Lending Fund, a passive commingled fund managed by State Street Global Advisors (State Street). The Committee had no concerns regarding the termination recommendation, but questioned the total amount of LACERS assets to be managed by State Street when combined with its existing mandates. LACERS assets with State Street would total approximately $2.9 billion (15% of total fund assets) should the Board approve the contract termination and redeployment recommendations for QMA and AQR Capital Management, LLC. Staff addressed this concern by discussing the low level of business and operational risk associated with State Street's organization and passive strategies. Staff and NEPC will also determine whether to reinvest these assets into an active strategy during the forthcoming asset-liability and risk budgeting studies scheduled for calendar year 2021.

The Committee also inquired about State Street's fees and the transaction cost of transferring the QMA assets to State Street. Staff discussed that State Street's existing contracted annual fee of 16 basis points, or approximately $732,800 annually (based on the current value of LACERS assets with QMA), has been renegotiated to an annual rate of 5.5 basis points, or approximately $251,900 annually. This new rate has been discounted by approximately 66% of the existing contracted fee. Additionally, the estimated one-time transaction cost of transferring the assets to State Street ranges from 60 basis points, or $2.7 million, to 100 basis points, or $4.6 million. This estimated cost includes both explicit costs such as commissions and implicit costs such as the market impact of trading securities.

The Committee concurs with staff's recommendations. Should the Board approve these recommendations, staff would initiate the 30-day written notice of termination clause and transition QMA's assets to State Street as soon as practicable.

## Strategic Alignment

A contract termination with QMA and reallocation of the assets into a passively managed SSgA Daily MSCI Emerging Markets Index Non-Lending Fund managed by State Street will allow the fund to maintain a diversified exposure to the emerging markets equities, which aligns with the Strategic Plan Goal to optimize long-term risk adjusted investment returns (Goal IV). The discussion of the investment manager's profile, strategy, performance, and management fee structure aligns with the Strategic Plan Goal to uphold good governance practices which affirm transparency, accountability, and fiduciary duty (Goal V).

Prepared by: Ellen Chen, Investment Officer I, Investment Division

RJ/BF/EC:jp

Attachments:
1. Investment Committee Recommendation Report dated October 13, 2020
2. Proposed Resolution

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

**REPORT TO INVESTMENT COMMITTEE** **MEETING: OCTOBER 13, 2020**
**From: Neil M. Guglielmo, General Manager** **ITEM: V**

SUBJECT: **INVESTMENT MANAGER CONTRACT WITH QUANTITATIVE MANAGEMENT ASSOCIATES, LLC REGARDING THE MANAGEMENT OF AN ACTIVE EMERGING MARKETS CORE EQUITIES PORTFOLIO AND POSSIBLE COMMITTEE ACTION**

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

## Recommendation

That the Committee recommend to the Board:

1. Termination of the contract with Quantitative Management Associates, LLC for management of an active emerging markets core equities portfolio.

2. Redeployment of the assets into the passive SSgA Daily MSCI Emerging Markets Index Non-Lending Fund managed by State Street Global Advisors.

## Executive Summary

Quantitative Management Associates, LLC (QMA) has managed an active emerging markets core equities portfolio for LACERS since April 2014. LACERS' portfolio was valued at $458 million as of September 30, 2020. QMA was placed "On Watch" for an initial one-year period effective July 29, 2019, due to underperformance, pursuant to the LACERS Manager Monitoring Policy (Policy). In light of QMA's underperformance as of June 30, 2020 and recent organizational changes, the "On Watch" status was extended for an additional one-year period effective July 29, 2020. QMA's current contract expires on December 31, 2020. Staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant, recommend termination of the QMA contract.

## Discussion

*Background*
QMA has managed an active emerging markets core equities portfolio for LACERS since April 2014, and is benchmarked against the MSCI Emerging Markets Index. QMA's quantitative investment strategy is rooted in the belief that investor behavior creates disconnections between stock prices and company fundamentals. QMA's model evaluates fundamental metrics, such as valuation, growth, and quality, and seeks to add value by actively adapting to changing growth and market expectations. The

investment team is comprised of 14 professionals with the team averaging over 22 years of investment experience. LACERS' portfolio was valued at $458 million as of September 30, 2020.

QMA was hired through the 2013 Active Non-U.S. Equities Emerging Markets Core manager search process. The Board authorized a three-year contract on July 23, 2013, a three-year contract renewal on September 27, 2016, and a one-year contract extension on August 27, 2019. The current contract expires on December 31, 2020. QMA has been on "On-Watch" status since July 29, 2019 due to underperformance relative to the benchmark, pursuant to the Policy. As detailed in the Performance section of this report, QMA's relative performance has not improved and continues to breach Policy criteria. Further, as detailed in the Due Diligence section of this report, QMA recently experienced organizational changes, triggering the qualitative criteria of the Policy.

*Organization*

QMA is wholly owned by Prudential Financial, Inc., a public company (NYSE ticker symbol: PRU), but operates independently. QMA is headquartered in Newark, New Jersey, and has over 200 employees. As of June 30, 2020, the firm managed over $106 billion in total assets with $1.5 billion in the emerging markets core equities strategy.

*Due Diligence*

The firm recently implemented material organizational changes that impact LACERS' investment with QMA. On July 13, 2020, as part of a broad restructuring plan for its equity business, George Patterson, QMA's previous co-head of Quantitative Equities, was appointed as Chief Investment Officer (CIO), overseeing both the quantitative equity and multi-asset platforms. Mr. Patterson assumed the CIO role from Roy Henriksson, who will leave the firm in October 2020. Additionally, Stacie Mintz, head of Equity Portfolio Management, was promoted to co-head of Quantitative Equities, alongside existing co-head, Peter Xu. Gavin Smith, currently a senior portfolio manager at QMA, assumed additional responsibility as head of Equity Research, more closely integrating QMA's research team with the investment process.

Further, QMA's emerging markets core equities strategy has experienced a significant decline in assets of approximately $966 million over the last two years. The restructuring of key personnel and loss of assets triggered the "Organization" criteria of the Policy; these changes factored into an extension of QMA's "On Watch" status in July 2020, as discussed in the Performance section of this report.

*Performance*

Based on unaudited data as of September 30, 2020, QMA has underperformed its benchmark, net of fees, over all time periods except for the 3-month period as presented in the following table.

| **Annualized Performance as of 9/30/20 (Unaudited and Net-of-Fees)** | | | | | | |
|---|---|---|---|---|---|---|
| | 3-Month | 1-Year | 2-Year | 3-Year | 5-Year | Since Inception |
| QMA | 9.82 | 8.66 | 2.57 | 1.08 | 7.76 | 3.27 |
| MSCI EM Index | 9.56 | 10.54 | 4.07 | 2.42 | 8.97 | 3.66 |
| *% of Excess Return* | *0.26* | *-1.88* | *-1.50* | *-1.34* | *-1.21* | *-0.39* |

*Inception Date: 4/24/2014*

Calendar year performance is presented in the table below as supplemental information.

| **Calendar Year Performance as of 12/31/19 (Net-of-Fees)** | | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 4/24/14-12/31/14 |
| QMA | 17.66 | -15.47 | 37.72 | 10.62 | -16.30 | -0.32 |
| MSCI EM Index | 18.42 | -14.57 | 37.28 | 11.19 | -14.92 | -2.92 |
| *% of Excess Return* | *-0.76* | *-0.90* | *0.44* | *-0.57* | *-1.38* | *2.60* |

On July 29, 2019, QMA was placed "On Watch" for an initial one-year period for breaching the following Policy criteria based on the performance as of June 30, 2019:

1. Annualized net underperformance relative to its benchmark for trailing 5 years.

2. Annualized net Information Ratio trailing 5 years relative to its benchmark is below .20.

QMA's "On Watch" status was extended for another one-year period effective July 29, 2020 for continued breach of the two criteria listed above, based on performance as of June 30, 2020. Additionally, the following qualitative criteria were triggered in July 2020 as discussed in the Due Diligence section of this report:

1. Loss of key personnel and restructuring of Quantitative Equities team.

2. Significant loss of clients and/or assets under management.

QMA continues to breach the performance criteria based on unaudited performance as of September 30, 2020. The underperformance is primarily attributed to a value stock tilt within the portfolio, a theme that has been out of favor in recent years. In light of QMA's continued underperformance, staff and NEPC recommend termination of the contract and redeployment of the assets into the SSgA Daily MSCI Emerging Markets Index Non-Lending Fund, a passive commingled fund managed by State Street Global Advisors (State Street). This fund is available to LACERS under the multi-passive index fund contract currently in place with State Street.

Based on an analysis presented in the attached NEPC report (Attachment 1), active investment management may continue to be warranted in the emerging markets core equities space. Staff and NEPC will revisit this matter during the next asset-liability and risk budgeting study (anticipated to be completed in calendar year 2021) and determine whether LACERS should maintain long-term active or passive exposure to emerging markets core equities.

*Fees*
LACERS pays QMA an effective fee of 39 basis points (0.39%), which is approximately $1.8 million annually based on the value of LACERS' assets as of September 30, 2020. The fee ranks in the 6th percentile of fees charged by similar managers in the eVestment database (i.e., 94% of like-managers have higher fees). The annual fee for State Street's passive strategy would be 5.5 basis points

(0.055%), or approximately $251,900. Additionally, LACERS would incur a one-time transaction cost for moving the assets from QMA to the State Street fund; the estimated transaction fee may range from 60 basis points (0.60%), or $2.7 million, to 100 basis points (1.00%), or $4.6 million.

Should the Committee and Board concur with this contract termination recommendation, staff would initiate the 30-day written notice of termination clause and transfer of assets as soon as practicable.

*General Fund Consultant Opinion*
NEPC concurs with this recommendation.

**Strategic Alignment**

A contract termination with QMA and reallocation of the assets into a passively managed SSgA Daily MSCI Emerging Markets Index Non-Lending Fund managed by State Street will allow the fund to maintain a diversified exposure to the emerging markets equities, which aligns with the Strategic Plan Goal to optimize long-term risk adjusted investment returns (Goal IV). The discussion of the investment manager's profile, strategy, performance, and management fee structure aligns with the Strategic Plan Goal to uphold good governance practices which affirm transparency, accountability, and fiduciary duty (Goal V).

Prepared By: Ellen Chen, Investment Officer I, Investment Division

NMG/RJ/BF/EC:jp

Attachment: 1. Consultant Recommendation – NEPC, LLC

NEPC, LLC

**To:** Los Angeles City Employees' Retirement System Investment Committee

**From:** NEPC, LLC

**Date:** October 13, 2020

**Subject:** QMA – Contract Termination

---

## Recommendation

NEPC recommends Los Angeles City Employees' Retirement System (LACERS) terminate the contract that is currently in place with Quantitative Management Associates, LLC ('QMA') and transfer the assets to a MSCI Emerging Markets Index Fund. The rationale for the recommendation is based on underperformance over all time periods measured, product asset outflows, high level personnel and organizational changes and the desire to reduce investment management fees.

## Background

QMA was funded on April 24, 2014 to provide the Plan with emerging markets public equity exposure within the non-U.S. Equity asset class. As of August 31, 2020, QMA managed $465.6 million, or 2.4% of Plan assets. The performance objective is to outperform the MSCI Emerging Markets Index, net of fees, annualized over a full market cycle (normally three-to-five years). The account is currently on Watch due to performance based on LACERS' Manager Monitoring Policy.

QMA was founded in 1975 as the quantitative equity and global multi-asset businesses of PGIM, Inc. (formerly Prudential Investment Management and asset management arm of life insurance company Prudential Financial). In 2004, QMA became a wholly-owned subsidiary of PGIM, Inc.

As of 6/30/2020, the firm managed approximately $106.1 billion. The firm employs approximately 63 investment professionals and is headquartered in Newark, New Jersey and has offices in San Francisco, California and London, United Kingdom. The Emerging Markets Core Equity platform has $1.48 billion in assets under management and is run by a 28-person Quantitative Equity team. The Emerging Markets Core Equity line of business has experienced outflows totaling nearly $966 million in the past two years.

On July 13, 2020, QMA announced organizational structure changes as part of a broad restructuring plan for their equity business. QMA appointed a new chief investment officer (CIO), a new quantitative equities co-head, and new Director of Research.

George Patterson, currently the firm's co-head of Quantitative Equities, will take over as CIO, overseeing both quantitative equity and multi-asset platforms at the firm. Roy Henriksson (prior CIO) will depart the firm at the end of October. Stacie Mintz, currently the firm's head of Equity Portfolio Management, is being promoted to co-head of the Quantitative Equities team, alongside existing co-head, Peter Xu. Both Ms. Mintz and Mr. Xu have been at QMA for over 20 years. Finally, Gavin Smith, currently a senior portfolio manager, is being promoted to Director of Research, while Joshua Livnat remains a senior advisor. Both Stacie Mintz and Gavin Smith will report to George Patterson.

NEPC's research team followed up with QMA on these changes. QMA has been internally debating for a couple of years whether or not to make restructuring changes with their team and investment process. The longer their strategies underperformed, the more pressure there was both internally and from clients to do something. Members of the QMA team wanted a clearer path for incorporating applied research ideas into their models. Additionally, they wanted to be able to implement any enhancement ideas on an accelerated timeline. Roy Henriksson was strongly against any restructuring so he ultimately resigned from the firm and he will be leaving at the end of this month.

QMA expects some fine tuning of their adaptive models to occur at a measured pace. The changes will not be drastic in nature. QMA expects slightly more emphasis on quality going forward and team members have been researching various topics. There is research into value catalysts, research into aggressive growth premia, research into applying natural language processing tools to areas beyond earnings calls and news, research to improve their country selection models and research on how best to implement ESG as a risk factor.

QMA believes that applying a systematic approach to fundamental metrics in emerging markets securities can add alpha in the long run. They believe that indicators of a security's future performance differ in effectiveness depending on the relative growth rate of companies within each sector. Their research team believes that valuation measures matter more for slow growing companies and indicators relating to future growth prospects matter more for fast growing companies.

The QMA team employs an active bottom-up, systematic stock selection strategy that is based on fundamentals. These metrics are: Valuation, News, Financial Momentum and Quality, which are evaluated systematically across 4,000 public companies in the MSCI Emerging Markets universe. A forecast of relative price appreciation for each company is produced in three main steps. First, classifying stocks within a sector by long-run growth rate. Second, calculation of expected excess returns and alpha. Step two incorporates an evaluation of: Valuation, defined as forward and historical earnings yield, book yield, sales yield, cash flow yield and dividend yield; News, defined as earnings estimate, cash flow estimate, and sales estimate revisions made by security analysts following a stock; Financial Momentum, defined as changes in dividends, earnings, sales, and gross cash flow; Quality, defined as a proprietary measurement of accruals to gauge the efficacy of the Income Statement, while Accounting Bloat is utilized to measure the stability of the Balance Sheet. Step three is construction of the portfolio using an internally developed algorithm with constraints limiting portfolio deviations from the benchmark with respect to sector, country, region, size, growth and individual concentration in names. The result is typically a portfolio that is tilted toward value while maintaining a similar beta and market capitalization profile versus the benchmark.

**Performance**

Referring to Exhibit 1, since May 1, 2014 (the first full month of performance after the account inception date of April 24, 2014), the QMA portfolio has underperformed the MSCI Emerging Markets Index by 0.38%, returning 3.75%, net of fees, through August 31, 2020. Referring to Exhibit 2, in the five-year period ended June 30, 2020, the portfolio underperformed the index by 1.17% (1.69% vs. 2.86%) and ranked in the 65th percentile in its peer group. In the one-year period ended June 30, 2020, the portfolio underperformed the benchmark by 2.75% returning -6.14% and ranked in the 63rd percentile in its peer group. The portfolio has an information ratio of -0.22 and active risk as measured by tracking error was 1.88% since inception ending June 30, 2020.

Referring to Exhibit 3, on a cumulative basis, the portfolio has been eroding its prior cumulative gains since the second quarter of 2018, resulting in underperformance against its benchmark in all trailing time periods. Portfolios built using fundamental factors like value and quality have been hard pressed to outperform their market capitalization-based benchmarks given the elevated risk appetite of investors seeking returns in an environment of very low and negative global interest rates. The QMA portfolio may typically underperform in periods when the riskiest value stocks and the lowest quality stocks outperform, as they have in past years.

NEPC performed a multi-factor attribution analysis on the QMA portfolio to understand the level of contribution to return derived from six factors, beta or index exposure, the size of companies in the portfolio (small cap versus large cap), style (value versus growth) and market exposure (developed markets versus emerging markets), momentum and quality. Referring to Exhibit 4, we note that in the past three years, size, style, momentum and quality did not significantly explain the negative alpha in the portfolio while the 0.96 beta acted as a slight headwind. We do note the underperformance versus benchmark and believe that fundamentals-based investing in emerging markets is prudent in the long-term on a risk-adjusted basis, though QMA's process has not been rewarded. Referring to Exhibit 5, we tested the alpha correlations of the emerging markets managers currently within the emerging markets program. This test is designed to provide quantitative insight into the drivers of alpha and identifies managers that are significantly similar in their alpha generation. We do note that alpha correlations of the managers within the line-up have strongly negative and zero alpha correlations and therefore conclude that the line-up should be expected to be diversified in its return exposures. Referring to Exhibit 6, the multi-factor attribution analysis identifies a strong relationship to the value factor in the LACERS Emerging Markets Composite which contributed -0.80% to underperformance in the three-year period ended June 30, 2020.

## Active vs. Passive in Emerging Markets Equity

With the disappointing performance since inception of the QMA portfolio and the emerging markets composite overall, we revisit the question of whether active investment management in emerging markets is still warranted. Referring to Exhibit 7, NEPC tested the universe of investment managers against two tests. First, whether or not there is significant dispersion between manager returns and second whether the median manager beats the benchmark. Within the emerging markets large cap universe results are mixed with dispersion between managers in the universe tightening over the past five years and therefore failing our test. The median manager returns test affirms that active management does have a place in emerging markets large cap investing. Within small cap, both the manager dispersion test and median outperformance test affirm that active management is the preferred manner of implementation.

## Fees

The QMA portfolio has an asset-based fee of 0.38% annually. The fee ranks in the 6th percentile among its peers in the eVestment Emerging Markets All Cap Core Equity Universe. In other words, 94% of the 125 products included in the peer universe have a higher fee than the LACERS account.

## Conclusion

QMA has underperformed the index since inception ended August 31, 2020 and has experienced meaningful changes at the firm with several high-level departures and organizational changes. These changes coupled with the desire to reduce investment management fees leads us to recommend the termination of QMA and the addition of a MSCI Emerging Market Index fund in order to gain a core position within emerging markets.

The following tables provide specific performance information, net of fees referenced above.

Please let us know if you would like to discuss further.

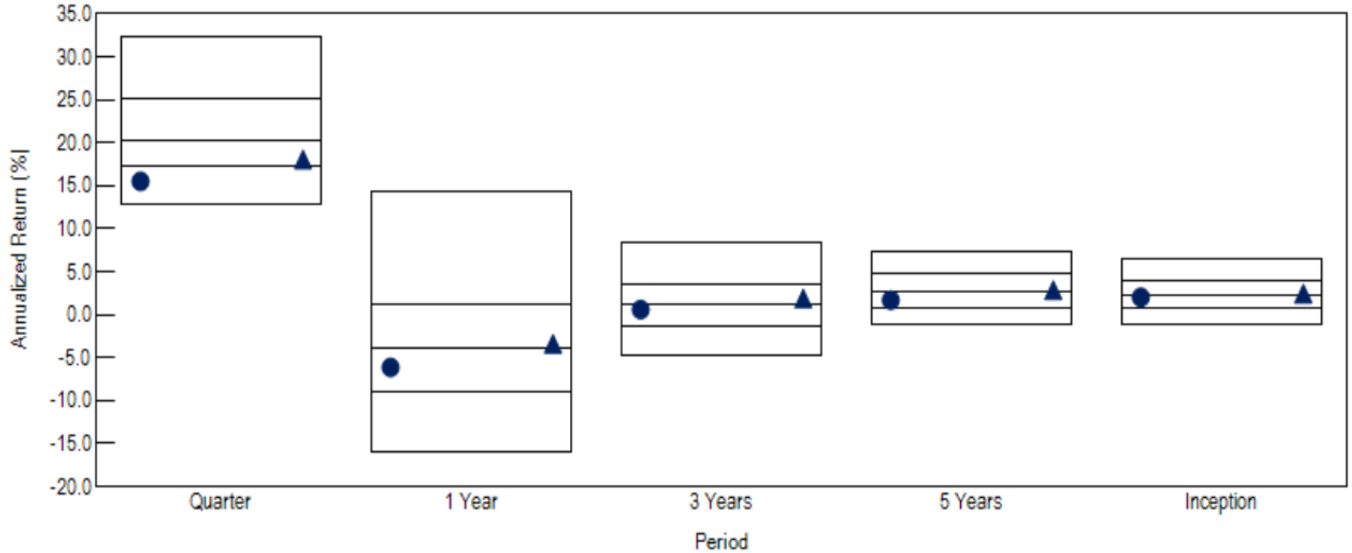
**Exhibit 1: Tailing Performance Net of Fees Ending August 31, 2020**

| | Ending August 31, 2020 Market Value($) | 1 Mo(%) | 3 Mo(%) | YTD(%) | Fiscal YTD(%) | 1 Yr(%) | 3 Yrs(%) | 5 Yrs(%) | Inception(%) |
|---|---|---|---|---|---|---|---|---|---|
| QMA Emerging Markets | 465,566,740 | 1.35 | 18.14 | -1.11 | 11.55 | 12.32 | 1.41 | 7.42 | 3.75 |
| *MSCI Emerging Markets* | | *2.21* | *19.53* | *0.45* | *11.34* | *14.49* | *2.83* | *8.66* | *4.13* |
| Excess | | -0.86 | -1.39 | -1.56 | 0.21 | -2.17 | -1.42 | -1.24 | -0.38 |

NEPC, LLC

**Exhibit 2**

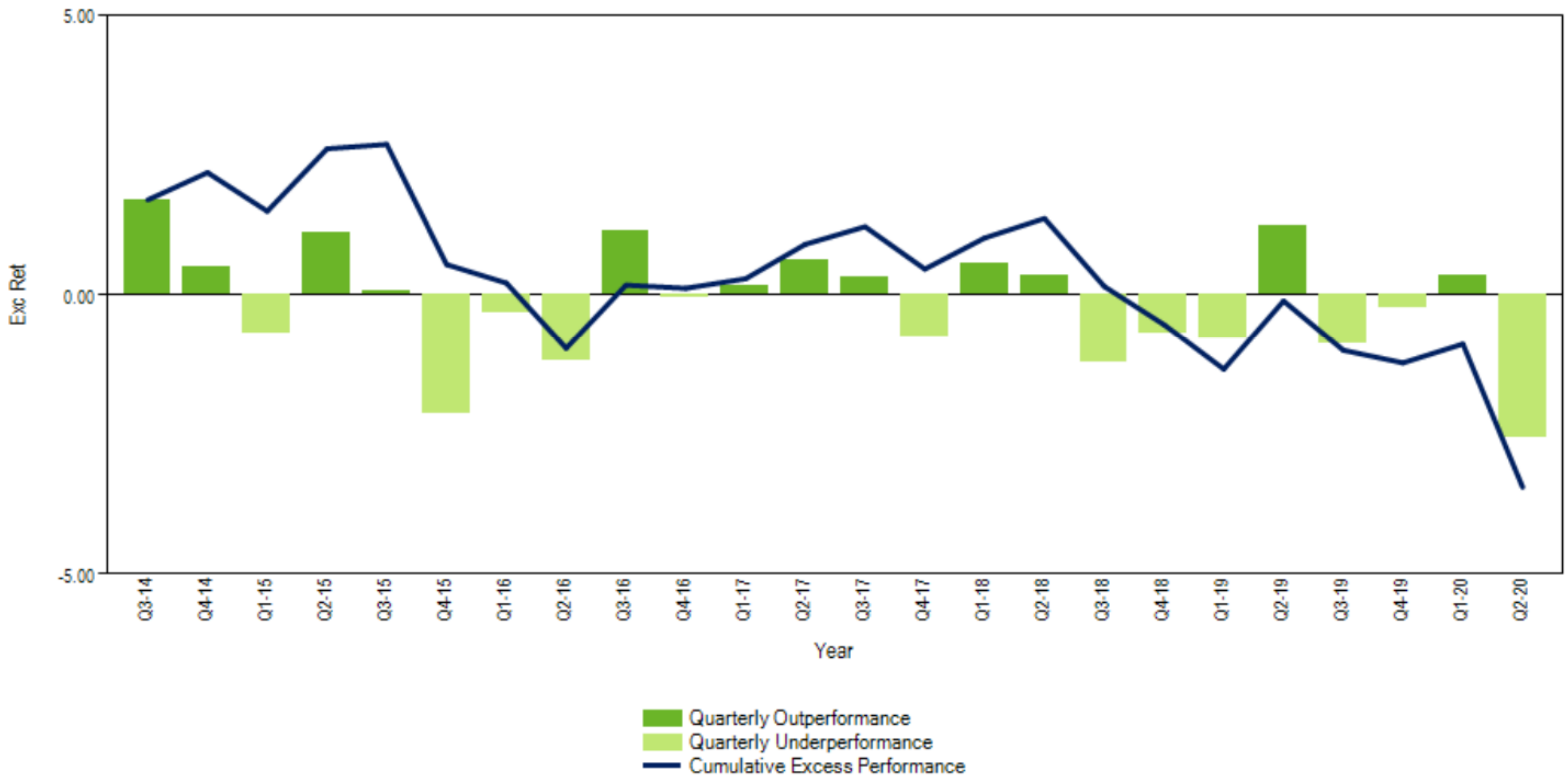
eV Emg Mkts Equity Net Return Comparison
Ending June 30, 2020




| | Return (Rank) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5th Percentile | 32.40 | | 14.24 | | 8.39 | | 7.41 | | 6.54 | |
| 25th Percentile | 25.16 | | 1.28 | | 3.57 | | 4.86 | | 3.88 | |
| Median | 20.35 | | -3.98 | | 1.15 | | 2.77 | | 2.33 | |
| 75th Percentile | 17.33 | | -8.92 | | -1.31 | | 0.76 | | 0.79 | |
| 95th Percentile | 12.86 | | -16.06 | | -4.71 | | -1.20 | | -1.07 | |
| # of Portfolios | 225 | | 225 | | 204 | | 180 | | 161 | |
| ● QMA Emerging Markets | 15.52 | (87) | -6.14 | (63) | 0.59 | (56) | 1.69 | (65) | 2.03 | (57) |
| ▲ MSCI Emerging Markets | 18.08 | (68) | -3.39 | (48) | 1.90 | (41) | 2.86 | (49) | 2.44 | (49) |

# Exhibit 3

## Quarterly and Cumulative Excess Performance



NEPC, LLC

**Exhibit 4**

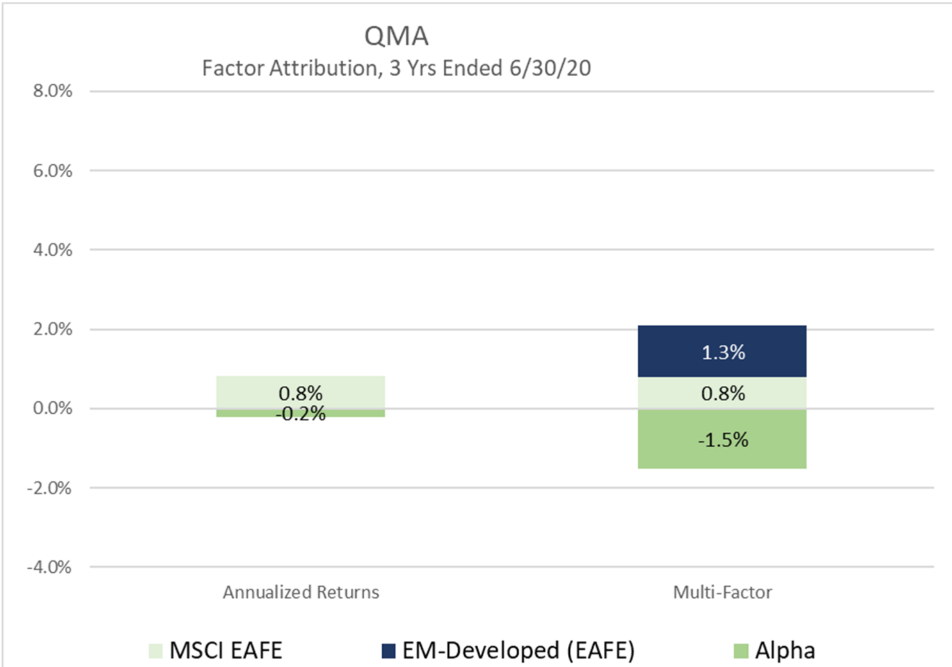
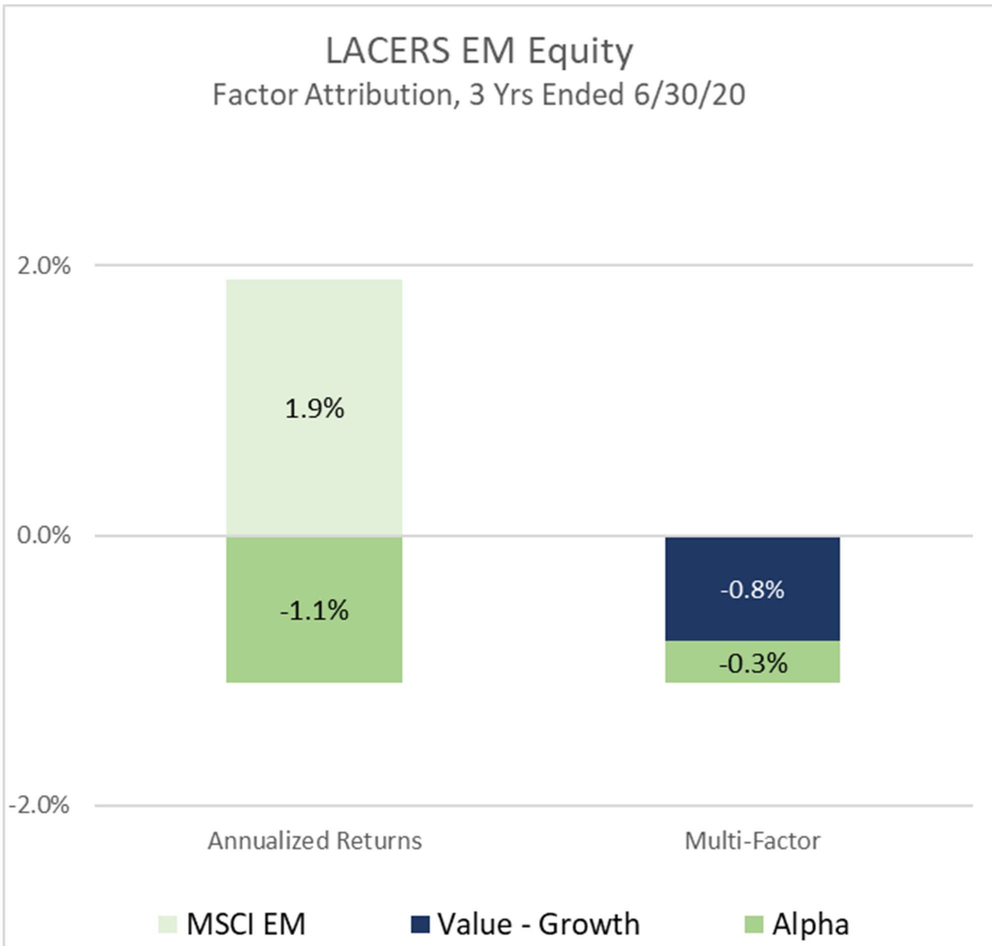



**Exhibit 5**

| Longest Common Date: Alpha Correlations | **Axiom** | **DFA** | **QMA** |
|---|---|---|---|
| **Axiom** | **1.00** | **-0.47** | **-0.25** |
| **DFA** | **-0.47** | **1.00** | **0.00** |
| **QMA** | **-0.25** | **0.00** | **1.00** |

**Exhibit 6**


LACERS EM Equity
Factor Attribution, 3 Yrs Ended 6/30/20
2.0%
0.0%
-2.0%
1.9%
-1.1%
-0.8%
-0.3%
Annualized Returns
Multi-Factor
MSCI EM
Value - Growth
Alpha

NEPC, LLC

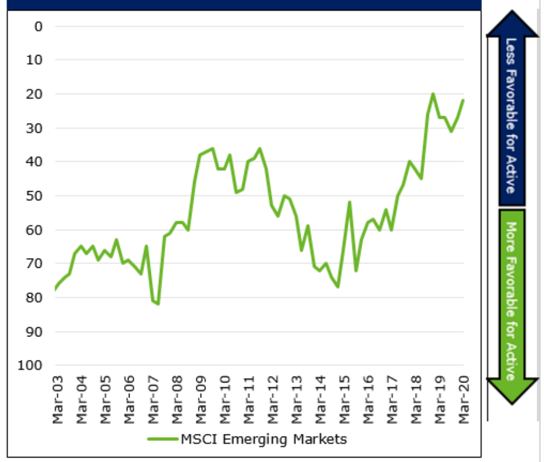
**Exhibit 7**

# EMERGING MARKETS EQUITY LARGE CAP

| NEPC Active Management Views | | | |
|---|---|---|---|
| Asset Class | Median Fee | Test 1 Dispersion | Test 2 Median Outperf |
| EM Large Cap | 80 bps | | |

### Rolling 3 Year Excess Returns


### Benchmark Rank within Each Universe

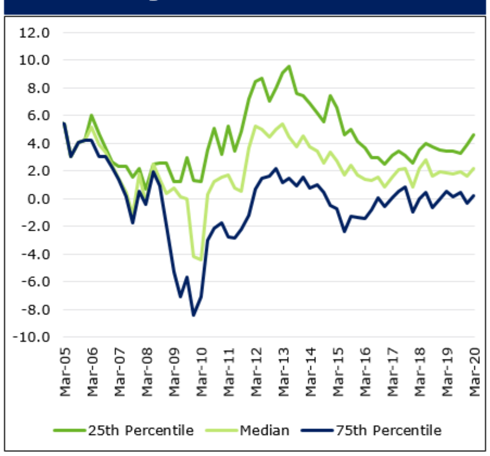



Data is net of fees; EM Large Cap Core vs. MSCI EM Index.
Source: eVestment

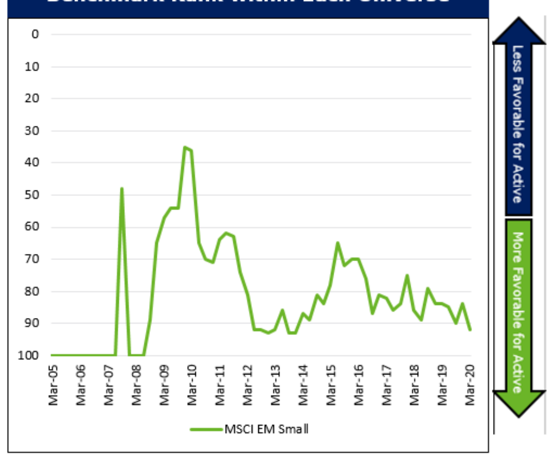
# EMERGING MARKETS SMALL CAP EQUITY

| NEPC Active Management Views | | | |
|---|---|---|---|
| Asset Class | Median Fee | Test 1 Dispersion | Test 2 Median Outperf |
| EM Small Cap | 100 bps | | |

### Rolling 3 Year Excess Returns




### Benchmark Rank within Each Universe




Data is net of fees; EM Small Cap Core vs. MSCI EM SC Index.
Source: eVestment

CONTRACT TERMINATION
QUANTITATIVE MANAGEMENT ASSOCIATES, LLC
ACTIVE EMERGING MARKETS CORE EQUITIES
PORTFOLIO MANAGEMENT

PROPOSED RESOLUTION

WHEREAS, LACERS' current one-year contract extension with Quantitative Management Associates, LLC (QMA) for active emerging markets core equities portfolio management expires on December 31, 2020; and,

WHEREAS, QMA was placed "On-Watch" on July 29, 2019, due to performance as of June 30, 2019, in accordance with the LACERS Manager Monitoring Policy (Policy); and,

WHEREAS, QMA's "On Watch" status was extended for another one-year period effective July 29, 2020 for continued breach of Policy criteria based on performance as of June 30, 2020; and,

WHEREAS, as of September 30, 2020, the strategy continues to underperform the benchmark and breach Policy criteria; and,

WHEREAS, on October 27, 2020, the Board approved the Investment Committee's recommendation to terminate the contract with QMA and transition QMA's assets to the SSgA Daily MSCI Emerging Markets Index Non-Lending Fund, a passive commingled fund available to LACERS under the Multi-Passive Index Portfolio Management contract with State Street Global Advisors (State Street).

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the termination of the QMA contract and authorizes LACERS staff to redeploy QMA's assets to the SSgA Daily MSCI Emerging Markets Index Non-Lending Fund managed by State Street.

October 27, 2020

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

**REPORT TO BOARD OF ADMINISTRATION** **MEETING: OCTOBER 27, 2020**
**From: Neil M. Guglielmo, General Manager** **ITEM: VII – D**

SUBJECT: **CONTINUED DISCUSSION OF SECURITIES LENDING PROGRAM MODIFICATIONS AND POSSIBLE BOARD ACTION**

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

## Recommendation

That the Board:

1. Authorize the temporary modifications to Securities Lending Program to continue through the fiscal year ending June 30, 2021; and

2. Direct staff to report to the Board on the status of the Securities Lending Program and the effects of such modifications prior to the fiscal year ending June 30, 2021.

## Executive Summary

This report provides a status update on the temporary modifications to the Securities Lending Program approved by the Board on April 28, 2020. Staff recommends continuing with the temporary policy modifications through the fiscal year ending June 30, 2021.

## Discussion

*Background*
On April 28, 2020, the Board authorized temporary modifications to the Securities Lending Program (SLP) in response to the extreme market volatility and uncertain economic outlook brought about by the COVID-19 pandemic. The Board affirmed the staff decision undertaken in late March 2020 to pursue revisions to the SLP Cash and Non-Cash Collateral Guidelines, as presented in the attached report (Attachment 1), to reduce risk exposure and protect investment program liquidity. Staff subsequently negotiated the guideline revisions with The Northern Trust Company (Northern Trust), LACERS' Master Custodian Bank, which also serves as the SLP agent and Cash Collateral investment portfolio manager. The revised guidelines were executed on June 12, 2020. To date, Northern Trust continues to transition the Cash Collateral investment portfolio to full compliance with the revised guidelines; the Non-Cash Collateral portfolio has been in full compliance with the revised guidelines since execution date.

*Status of Implementation of Revised Cash Collateral Guidelines*

The revised Cash Collateral Guidelines (Attachment 2) improve the liquidity and credit quality of the Cash Collateral investment portfolio, which presents the highest source of risk for participating in the SLP due to the potential for principal losses. Northern Trust has yet to achieve full compliance with the revised guidelines. As of October 14, 2020, six of 13 total holdings (or approximately 20% of the portfolio by market value), are out of compliance with the revised guidelines due to a deliberate risk/loss-reduction phase-in plan. These holdings are legacy securities purchased prior to staff initiating SLP modification discussions with Northern Trust in March 2020. Northern Trust has advised holding these securities to maturity to avoid principal losses from liquidating them under unfavorable market conditions. The following table provides further information about the six securities out of compliance. Note that securities #1, #3, and #4 breach both the maximum 3% allocation and average maturity guidelines; therefore, the number of securities presented in the table total more than six.

| Guideline | Securities Out of Compliance | Criteria | Compliance Estimate |
|---|---|---|---|
| Maximum of 3% of the value of the total assets of the Fund may be invested in securities of any one issuer | Security #1 | Allocation-4.81% | 3/9/2021 |
| | Security #2 | Allocation-4.39% | 11/3/2021 |
| | Security #3 | Allocation-3.21% | 1/28/2021 |
| | Security #4 | Allocation-3.21% | 2/19/2021 |
| The maximum final or average maturity of any variable or floating rate security will be limited to 60 days; the maximum final or average maturity of a fixed rate security will be limited to 60 days | Security #3 | Maturity-1/28/2021 | 11/29/2020 |
| | Security #4 | Maturity-2/19/2021 | 12/21/2020 |
| | Security #1 | Maturity-3/9/2021 | 1/8/2021 |
| Asset backed commercial paper is excluded from eligible investments | Security #5 | Asset Backed Commercial Paper | 11/6/2020 |
| | Security #6 | Asset Backed Commercial Paper | 11/23/2020 |

The Cash Collateral investment portfolio is compliant with all other provisions of the revised guidelines; staff anticipates the portfolio to be in full compliance with the revised guidelines by March 2021.

*Status of Implementation of Non-Cash Collateral Guidelines*

The revised Non-Cash Collateral Guidelines (Attachment 3) narrow the acceptable forms of non-cash collateral backing securities loan and emphasize higher asset quality. The Non-Cash Collateral portfolio has been in full compliance with the revised guidelines since the date of execution (June 12, 2020).

*Impact of Guideline Revisions to SLP Earnings*

As anticipated by staff in the April 28, 2020 Board Report, SLP loan volumes and earnings have declined as a result of implementing these risk reducing guidelines. Loan volume and earnings information pre- and post-modification of the SLP is summarized in the following table.

| Period | Average Monthly On Loan ($) | Average Monthly Available To Loan ($) | Utilization Rate | Average Monthly Net Earnings ($) |
|---|---|---|---|---|
| Pre-Modification Jul-19 - Mar-20 | 1,931,383,723 | 12,437,282,125 | 15.5% | 525,782 |
| Post-Modification Apr-20 - Sep-20 | 1,160,891,269 | 12,364,498,606 | 9.4% | 471,434 |
| % Change | -39.9% | -0.6% | -39.5% | -10.3% |

Since implementation of the SLP modifications began, the loan volume and utilization rate (value of securities on loan as a percentage of value of securities available to loan) have decreased by approximately 40% and average monthly net earnings have declined by 10.3%. Staff and Northern Trust anticipate net earnings to decline further as the Cash Collateral investment portfolio reaches full compliance with the revised guidelines, primarily due to low yields associated with the shorter maturity, higher quality securities required by the revised Guidelines.

Staff recommends that the modifications to the SLP remain in effect until the fiscal year ending June 30, 2021. While the markets are no longer characterized by the extreme volatility witnessed during the onset of the pandemic, heightened volatility and lingering uncertainty over the economic outlook remain, warranting a continued reduction of risk exposure to the SLP. Should the Board approve staff's recommendation, staff will continue to monitor the implementation of the modifications to the SLP and the state of the markets. Staff will report back to the Board prior to the fiscal year ending June 30, 2021, to reassess the impact of the modifications to the program's income and risk factors and make a recommendation to continue with the temporary revisions or restore current policy.

**Strategic Alignment**

The continued implementation of the temporary modifications to the Securities Lending Program enables LACERS to address the risks brought about by the unpredictability of near term market conditions. The program modifications align with the Strategic Plan Goal to optimize long-term risk adjusted investment returns (Goal IV). The modifications also align with the Strategic Plan Goal to uphold good governance practices which affirm transparency, accountability and fiduciary duty (Goal V).

Prepared By: Jeremiah Paras, Investment Officer I, Investment Division

NMG/RJ/BF/JP

Attachments:
1. Report to Board of Administration Dated April, 28, 2020
2. Revised Cash Collateral Guidelines Executed June 12, 2020
3. Revised Non-Cash Collateral Guidelines Executed June 12, 2020

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

**REPORT TO BOARD OF ADMINISTRATION** **MEETING: APRIL 28, 2020**
**From: Neil M. Guglielmo, General Manager** **ITEM: VII – B**

SUBJECT: **SECURITIES LENDING PROGRAM MODIFICATIONS AND POSSIBLE BOARD ACTION**

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

## Recommendation

That the Board:

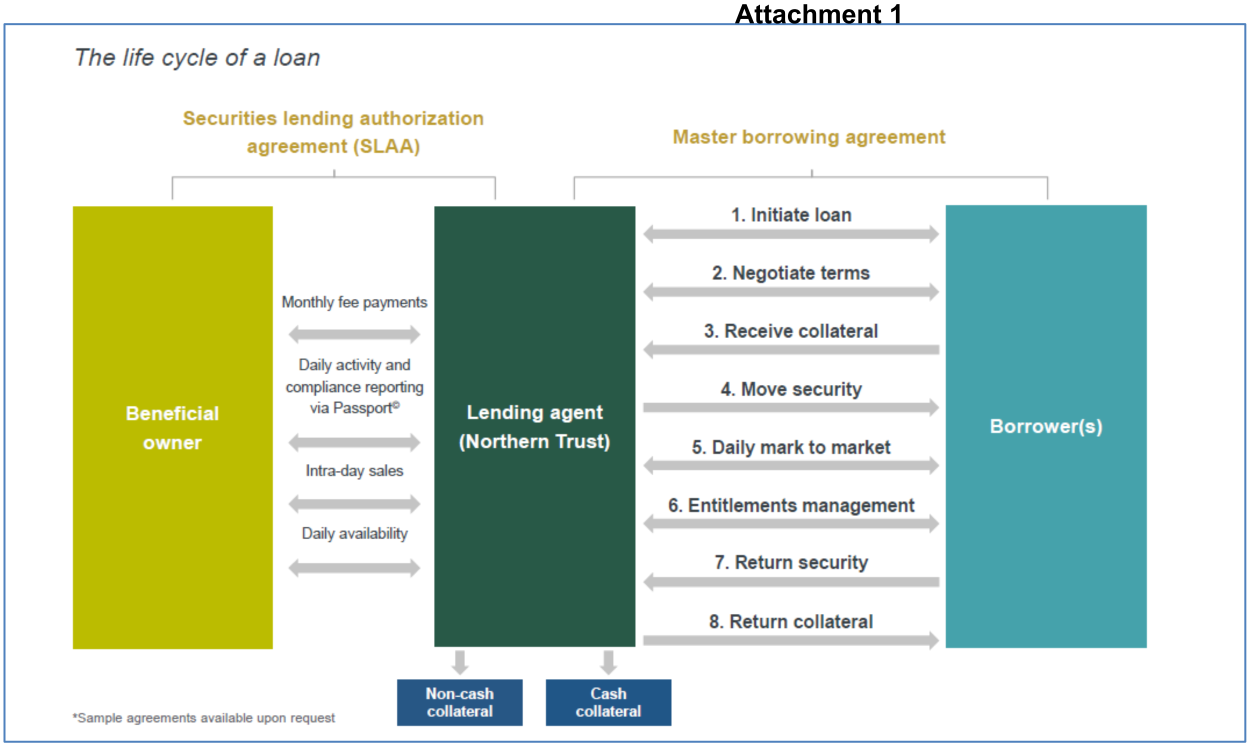
1. Affirm staff decision to temporarily reduce the volume of loans under the Securities Lending Program in order to reduce LACERS' exposure to program risks in light of current market conditions;

2. Authorize staff to revise the Securities Lending Program Cash and Non-Cash Collateral Guidelines as needed in light of both current and forecasted near term market conditions; and,

3. Direct staff to report to the Board in approximately six months on the status of the Securities Lending Program and the effects of such modifications.

## Discussion

*Background on LACERS' Securities Lending Program*
The LACERS Securities Lending Program (SLP) seeks to generate income by lending public markets securities owned by LACERS to qualified borrowers. Securities loans are fully collateralized based on the fair value of the borrowed securities. Collateral received against the securities loans may be in certain types of eligible securities (Non-Cash Collateral) or in the form of cash (Cash Collateral); income is earned differently based on collateral type. Under a Non-Cash Collateral lending structure, income is generated from fees paid by borrowers. Under a Cash Collateral lending structure, income is generated by investing the cash collateral in short-term investments under a separately managed custom investment fund. The Northern Trust Company (Northern Trust), LACERS' Master Custodian Bank, has served as the SLP agent (agent) and as Cash Collateral custom fund investment manager since 1991. The following diagrams provide a hypothetical illustration of the aforementioned program structure and process in greater detail.




## HOW REVENUE IS GENERATED

*Example: Northern Trust lends $25 million of US Equity*

### Non-Cash Loan

The $25 million market value loan is for 30 days collateralized by a US Treasury.

| | | |
|---|---|---|
| 1 | Receive non-cash collateral valued at **$25,500,000** (102%) | |
| 2 | Fee charged to borrower on the value of the loan (20 bps) | $4,167 |
| 3 | Gross revenue (gross spread 20 bps) credited to client monthly | $4,167 |
| 4 | Monthly lender's fee (@ 30%) | $1,250 |
| 5 | **Net client earnings** | **$2,917** |

### Cash Loan

The $25 million market value loan is for 30 days collateralized with cash (federal funds at 2.00%)

| | | |
|---|---|---|
| 1 | Receive cash collateral valued at **$25,500,000** (102%) | |
| 2 | Cash collateral invested in a collateral pool at yield of 2.10% | $44,625 |
| 3 | Rebate paid to borrower at rate of 1.80% | $(38,250) |
| 4 | Gross Revenue (gross spread 30 bps) | $6,375 |
| 5 | Monthly lender's fee (@ 30%) | $1,913 |
| 6 | **Net client earnings** | **$4,462** |

*Fee split between Lender and agent referenced in the diagram is for illustrative purposes only. The current agreement entitles Northern Trust to 15% of program revenue, with LACERS earning the residual 85% of program revenue.

The SLP is governed by LACERS Securities Lending Policy (Policy) under the broader Investment Policy adopted February 12, 2019, and by customized collateral and investment guidelines. The Policy defines the SLP objective, scope, and the roles and responsibilities of the Board, staff, and the SLP agent. Additionally, the Policy acknowledges risks from securities lending activities to include, but are not limited to, credit risk in the form of counterparty risk, market risk in the form of cash collateral reinvestment risk and interest rate risk, and operational risk in the form of trade settlement risk. The current agent indemnifies LACERS against counterparty defaults[1]; however, LACERS bears the risk of investing cash collateral, exposing LACERS to potential principal losses as a tradeoff to generating income from cash collateral.

The collateral and investment guidelines, which are negotiated by staff with general investment consultant input and approved by the General Manager, supplement the Policy and mitigate identified risks by setting standards for the type, level, and investment of collateral the agent may accept on LACERS' behalf. The guidelines are set forth in two separate documents, one for Cash Collateral and the other for Non-Cash Collateral, which are attachments to the securities lending contract with the agent. The Cash Collateral Guidelines address the eligible investments, credit quality, diversification, liquidity, and trading for the custom investment fund. The Non-Cash Collateral Guidelines address collateralization levels, eligible collateral, credit quality, and diversification. The Cash Collateral Guidelines were last negotiated and agreed upon between the agent and staff in 2015. The Non-Cash Collateral Guidelines were more recently amended in 2018.

*SLP Modifications under Current Market Conditions*

While the SLP has been designed to mitigate risks and earn incremental income to LACERS under recent bull market conditions, staff and NEPC, LLC (NEPC), LACERS' General Fund Consultant, are concerned that the current COVID-19 crisis and its unprecedented impact on economic and market conditions has severely elevated the inherent risks of the SLP including reduced investment program liquidity. When time is of the essence, the Policy empowers LACERS' General Manager and Chief Investment Officer to modify or suspend the SLP to address unusual and significant risk factors deemed to have a material adverse impact. Accordingly, LACERS staff, with the concurrence of NEPC, initiated a temporary de-risking of the SLP in mid-March by reducing the volume of loans outstanding. A survey of several other public pension plans has indicated that they either have made or in the process of making modifications to their respective securities lending programs since the beginning of the crisis. The table below summarizes volume reduction of the SLP between February 29, 2020 and April 10, 2020.

| | 2/29/2020 | 4/10/2020 | $ Change | % Change |
|---|---|---|---|---|
| Securities Loans Market Value | $2,202,806,781 | $1,122,147,370 | -$1,080,659,411 | -49% |
| Cash Collateral Market Value | $773,792,174 | $361,134,747 | -$412,657,427 | -53% |
| Non-Cash Collateral Market Value | $1,535,005,490 | $804,650,991 | -$730,354,499 | -48% |
| Utilization Rate[2] | 18% | 10% | NA | -44% |

[1] An example of a default is when a counterparty is unable to return the borrowed securities according to the agreed-upon terms.
[2] Value of securities on loan as a percentage of the value of securities available to loan

*Proposed SLP Modifications to Collateral and Investment Guidelines*

To further reduce LACERS' SLP risk exposure and protect investment program liquidity in light of both current and forecasted near term market conditions, staff is seeking the Board's authorization to implement temporary modifications of the SLP Cash and Non-Cash Collateral Guidelines (as drafted by staff and NEPC) as summarized below.

Cash Collateral Guidelines

- Shorten the duration and maturity of individual investments to 60 days, thus shortening the investment fund's maximum weighted average maturity to 60 days. Currently, a portion of the fund has investment maturities extended up to 13 months; the current guidelines permit a maximum weighted average maturity of 180 days
- Require a non-U.S. country to hold a sovereign credit rating of AA- or higher (or the equivalent) by at least two Nationally Recognized Statistical Rating Organizations (NRSRO) in order for non-U.S. government or corporate debt to be eligible for investment
- Remove asset-backed commercial paper[3] as an eligible investment
- Include Secured Overnight Financing Rate (SOFR)-indexed variable and floating rate securities as eligible investments
- Define the minimum credit rating requirement for short term investments to be A1/P1/F1 or higher (or the equivalent) by any two NRSRO's
- Restrict investments in obligations of issuers who are also LACERS' counterparties in a securities loan

Non-Cash Collateral Guidelines

- Limit non-U.S. government debt collateral to those countries with a sovereign credit rating of AA- or higher (or the equivalent) by at least two NRSRO's
- Remove debt of political subdivisions and agencies of non-U.S. governments as eligible non-cash collateral
- Require the agent to inform LACERS of debt collateral downgrades within five business days

By implementing these temporary SLP risk-reducing and investment program liquidity enhancement modifications, staff and consultant believe that the SLP risk level will be better aligned with these unusual and more volatile market conditions. However, a reduction in SLP risk will decrease securities lending income as a result of reduced loan volumes due to more restrictive collateral and investment guidelines.

Should the Board approve the recommendations included within this report, staff would then negotiate temporary SLP guideline modifications with the agent. Staff will continue to closely monitor the state of the markets, implementation of proposed guideline changes, and the impact of such changes on program income and risk factors, and will report back to the Board in approximately six months. NEPC concurs with the recommendations contained in this report.

[3] A short-term investment vehicle that is backed by underlying securities. Underlying asset pools usually include credit card receivables, student loans, and auto loan receivables.

## Strategic Plan Impact Statement

The modification of the Securities Lending Program, by way of both the reduction of the volume of loans and the revision of the Cash and Non-Cash Collateral Guidelines, helps LACERS address the risks brought about by the current and forecasted near term market conditions. The program modifications allow LACERS to optimize long-term risk adjusted investment returns (Goal IV) and to uphold good governance practices which affirm transparency, accountability and fiduciary duty (Goal V).

Prepared By: Jeremiah Paras, Investment Officer I, Investment Division

RJ/BF/WL/JP

Attachments:
1. Investment Policy – Section XV. Securities Lending Policy (pages 244 to 246)
2. Current Cash Collateral Guidelines
3. Current Non-Cash Collateral Guidelines

## XV. SECURITIES LENDING POLICY

### A. Objectives

The primary goal of LACERS' Securities Lending Program ("Program") is to enhance returns for the System by lending securities owned by LACERS to qualified borrowers. The Program features customized guidelines for prudent risk controls and is designed to not interfere with LACERS' overall investment strategy.

### B. Scope

The securities lending agent ("Agent"), pursuant to the securities lending contract, is responsible for locating creditworthy securities borrowers, facilitating securities lending transactions, managing collateral pledged by borrowers, providing daily mark-to-market, and acting in a fiduciary capacity in carrying out its lending duties on behalf of LACERS. The Agent may manage two distinct types of collateral with the goal to maximize net income, split between the Agent and the System, consistent with the safety of principal, maintenance of liquidity and LACERS' guidelines.

Cash collateral is reinvested by the Agent in a separate account based on LACERS' guidelines. Guidelines for the cash collateral separate account are provided in detail in the securities lending contract and address the eligible investments, credit quality, diversification, liquidity, and trading for the Program.

Non-cash collateral is held in a separate account established expressly for LACERS. Guidelines for the non-cash collateral separate account are provided in detail in the securities lending contract and address collateralization levels, eligible instruments, credit quality, and diversification.

### C. Roles and Responsibilities

1. **The Board:**
   a) Reviews and approves the Securities Lending Policy.
   b) Modifies or terminates the Program.
   c) Selects and terminates the Securities Lending Agent.
   d) Reviews the Program's overall performance.
2. **Staff:**
   a) Oversees the performance of the lending agent and the cash collateral investment manager in carrying out the objectives of the Program and complying with pre-determined guidelines.
   b) Consistent with the Program objectives and the securities lending contract, reviews, approves, and removes the counterparties as proposed by the Agent.
   c) If the Board is unable to convene in a timely manner to address unusual and significant risk factors that are deemed to have a material adverse impact (e.g. a material reduction in cash reinvestment market liquidity) on the integrity of the Program, LACERS' General Manager and Chief Investment Officer may decide

jointly to modify or suspend the Program. The Chief Investment Officer shall report the action(s) and reasons for such action(s) at the next scheduled Board meeting.

d) Reports to the Board an annual report summarizing securities lending activity for the fiscal year. The report will be presented within four months following the end of the fiscal year.

3. **The Agent:**

a) Ensures that counterparties that borrow LACERS' securities are qualified pursuant to LACERS' approved credit standards.

b) Indemnifies LACERS against borrower default.

c) Accepts and invests collateral according to collateral investment guidelines agreed upon with LACERS.

d) Provides the following reports to LACERS:

| Reporting Requirements of the Agent | | |
|---|---|---|
| Ad hoc Reports | Monthly Reports | Quarterly Reports |
| • Any borrower defaults within a practicable time frame.<br>• Any violations of LACERS' guidelines with a plan for correction within a practicable time frame. | • Volume and lending spreads for the Program.<br>• Total income received by LACERS and by the Agent for borrowing activity.<br>• Investment management activities and risk characteristics of the collateral investment portfolio including sector allocation, quality exposures, maturity exposures, borrower exposures, average days' liquidity, etc. | • LACERS lending activity, earnings, risk characteristics and general trends in the security lending marketplace. |

D. **Potential Risks**

LACERS acknowledges the following primary risks of its securities lending activities:

1. **Counterparty Risk**

Counterparty risk arises when the borrower defaults on the return of the securities on loan to the lender. This risk is mitigated by LACERS' guideline requirements that borrowed securities are over-collateralized and marked to market on a daily basis by the Agent. Additionally, the Agent is bound by the securities lending contract to indemnify LACERS for any shortfalls in collateral in the event of a borrower default.

2. **Cash Reinvestment Risk**

Cash reinvestment risk arises when the investments in the cash collateral separate account become impaired or decrease in value, potentially resulting in a collateral deficiency and loss of principal. LACERS' guidelines are designed to minimize cash reinvestment risk.

3. **Interest Rate Risk**

Interest rate risk arises when the rebate rate that LACERS pays to the borrowers exceeds the return on the cash collateral investments. The Agent monitors and manages the interest rate exposure of the cash collateral pool versus the Agent's current interest rate forecast by using statistical analysis. Any negative earnings that occur as a result of interest rate risk will be shared between LACERS and the Agent at the same percentage as the fee arrangement.

4. **Other Risks**

Trade settlement and operational risks associated with securities lending are assumed by the Agent. Corporate actions such as voting rights remain with the security and will become the right of the borrower when the security is on loan. LACERS can still vote proxies for those shares not on loan or may instruct the Agent to return shares so that any specific proxy can be voted.

**ATTACHMENT 1 TO SCHEUDLE B**
**SECURITIES LENDING AUTHORIZATION AGREEMENT**
**(the "Agreement")**
**BETWEEN THE BOARD OF ADMINISTRATION OF THE CITY EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF LOS ANGELES ("System") AND THE NORTHERN TRUST COMPANY ("Agent")**

***INVESTMENT MANAGER OBJECTIVES AND GUIDELINES FOR CUSTOM CASH COLLATERAL ACCOUNT / COLLATERAL ACCOUNT ('THE SHORT TERM INVESTMENT ACCOUNT')***

## INVESTMENT OBJECTIVE

To seek to maximize current income to the extent consistent with safety of principal, maintenance of liquidity and the investment standards set forth below. The Short Term Investment Account (the "Fund") is intended as a separate account for the investment of U.S.-dollar based cash Collateral received by Agent..

Upon the effective date of these guidelines, the Lender and Agent hereby acknowledge that there may be certain assets in the Fund that would not meet these guidelines if newly purchased at this time ("Transition Assets"), though these assets were in compliance with the relevant guidelines at the time of purchase. The Lender and Agent hereby agree that Agent may, at its sole discretion, hold Transition Assets until maturity, unless otherwise directed by Lender.

### Cash Collateral Guidelines

Listed below are the cash Collateral guidelines specifying eligible investments, credit quality standards, and diversification, maturity and liquidity requirements. Subject to the above, all requirements, including diversification, listed in these guidelines are effective at the time of purchase of any security or instrument as a cash Collateral investment. Agent will make use of market standard settlement methods for cash investments including the use of a tri-party custodian as approved by Agent's appropriate risk committee. Settlement through a tri-party custodian may result in cash collateral.

## INVESTMENT GUIDELINES

1. **Eligible Investments**:

    (a) Obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities and custodial receipts with respect thereto.

(b) Obligations of domestic or foreign commercial banks, including Agent, (or branches thereof where deposits with branches are general obligations of the parent bank) and bank holding companies, including, but not limited to, commercial paper, bankers' acceptances, certificates of deposit, time deposits, notes and bonds. Certificates of deposit and time deposits shall not be acceptable from issuers domiciled in Portugal, Italy, Ireland, Greece or Spain.

(c) Obligations of U.S. and foreign corporations, including, but not limited to, commercial paper, asset backed commercial paper, notes, bonds and debentures. Asset backed commercial paper must carry 100% liquidity support.

(d) Obligations issued by foreign governments or political subdivisions thereof, and their agencies or instrumentalities.

(e) Units of the NTGI Collective Short Term Investment Fund.

(f) Repurchase agreements with counterparties approved by the Agent's appropriate credit committee at the time of purchase where the Collateral is held by Agent or for the account of Agent by an agent or subcustodian of Agent or a central bank, depository, or a third party custodian, and which is fully collateralized by investments described in paragraph (a) above and having a market value, including accrued interest, equal to or greater than the amount invested in the repurchase agreement. Initial collateralization will be at 102%, except cash collateral shall be collateralized at 100%.

(g) In the case of each investment (a) through (f) above: (i) All investments shall be denominated in U.S. dollars, and (ii) investments may include variable and floating rate instruments. Variable and floating rate instruments will be limited to those securities with reference indexes of Federal Funds Effective, Federal Funds Open, 1 Month LIBOR and 3 Month LIBOR and which are structured such that the spread relationship between the security coupon rate and index reference rate is constant.

**2. Credit Quality:**

(a) With respect to commercial paper and other short-term obligations, investments and reinvestments shall be limited to obligations rated (or issued by an issuer that has been rated) at the time of purchase in the highest rating category (within which there may be sub-categories or gradations indicating relative standing) by any two of the Nationally Recognized Statistical Rating Organizations ("NRSROs") that have assigned a rating to such security (or issuer).

(b) With respect to bonds and other long-term obligations, investments and reinvestments shall be limited to obligations rated at the time of purchase in one of the two highest rating categories (within which there may be sub-categories or gradations indicating relative standing) by the NRSROs that have assigned a rating to such security.

(c) Notwithstanding (a) and (b) above, Agent may invest assets of the Fund in the NTGI Collective Short Term Investment Fund which is deemed to be of equal or superior credit quality.

3. **Diversification:**

(a) Except for repurchase agreements and obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities, a maximum of 3% of the value of the total assets of the Fund may be invested in securities of any one issuer. With respect to the NTGI Collective Short Term Investment Fund, holdings in excess of 3% of the value of total assets of the Fund are permitted, but should not exceed 50% without written permission from the client.

(b) A maximum of 15% of the value of the total assets of the Fund may be invested in repurchase agreements with one counterparty.

(c) A maximum of 15% of the value of the total assets of the Fund may be exposed to the risks of any one foreign country and a maximum of 25% of the value of the total assets of the Fund may be exposed to the risks of non-U.S. entities. This limitation is applicable to the obligations of all foreign issuers. Only entities domiciled in large industrialized and politically stable countries which have been assigned a sovereign long-term rating of AA- or higher by each NRSRO monitored by Lender may be used, subject to that restriction outlined in 1 (b) above.

(d) Except for the banking industry, a maximum of 25% of the value of the total assets of the Fund may be invested in obligations of issuers having their principal business in the same industry. For such purposes, personal and business finance companies are considered to be in separate industries. Finance companies which are wholly-owned will be considered to be in the industries of their parents if there activities are primarily related to financing the operations of their parents.

(e) Compliance with the credit quality and diversification requirements of these guidelines shall be determined on the basis of values or ratings at the time of acquisition of any security.

4. **Liquidity/Maturity:**

(a) A minimum of 20% of the value of the assets of the Fund should mature daily. Holdings of the NTGI Collective Short Term Investment Fund will be included in this calculation.

(b) A minimum of 35% of the value of the assets of the Fund will mature within one month.

(c) The interest rate sensitivity of the Fund will be limited to a maximum of 60 days.

(d) The maximum final or average maturity of any variable or floating rate security will be two years. The maximum final or average maturity of a fixed rate security will be 13 months. The maximum weighted average maturity (as herein defined) of the Fund will be limited to 180 days.

(e) A maximum of 25% of the value of the assets of the Fund may be invested in securities or instruments which have a maturity (as herein defined) exceeding 97 days.

(f) Compliance with the liquidity and maturity requirements of these guidelines shall be determined on the basis of values or ratings at the time of acquisition of any security.

(g) For the purposes of this Annex 1, the "maturity" of a security or instrument shall be defined as the date when final payment is due, with these exceptions: (a) instruments issued or guaranteed by the U.S. Government or any agency or instrumentality thereof which have a variable rate of interest shall be deemed to have a maturity equal to the period remaining until the next readjustment of the interest rate, (b) variable rate instruments (other than those described in (a) above) shall be deemed to have a maturity equal to the longer of the period of time remaining until either, (i) the next readjustment of the interest rate or (ii) the principal amount can be recovered through demand or maturity, (c) floating rate instruments which incorporate a demand feature shall be deemed to have a maturity equal to the period of time remaining until the principal amount can be recovered through demand, (d) a repurchase agreement shall be deemed to have a maturity equal to the period of time remaining until the date on which the repurchase is scheduled to occur, or, if no date is specified but the agreement is subject to demand, the notice period applicable to a demand for the repurchase of the securities.

(h) For the purposes of this Annex 1, the "interest rate sensitivity" of a security or instrument shall mean (a), in the case of a fixed rate security or instrument (i) the date on which final payment is due or (ii) the principal amount can be recovered through demand (if applicable) or

(b) in the case of a floating or variable rate security or instrument, the shorter of the period of time remaining until either (i) the next readjustment of the interest rate or (ii) the principal amount can be recovered through demand (if applicable).

**5. Trading Policy**

Although the Fund will generally not engage in short-term trading, the Agent may dispose of any portfolio security prior to its maturity if, on the basis of a revised credit evaluation of the issuer or other considerations, Agent believes such disposition is advisable. Subsequent to its purchase, a portfolio security or issuer thereof may be assigned a lower rating or cease to be rated. Such an event would not necessarily require the disposition of the security, if the continued holding of the security is determined to be in the best interest of the Fund. In any event, Lacers will be notified within 5 business days when any security is downgraded below the minimum requirements set forth in these investment guidelines.

**Dated:** 8/24/15

**THE BOARD OF ADMINISTRATION OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM**

**By:** ______________________

**Name: Thomas Moutes**
**Title: General Manager**



AHF

EXHIBIT A

ATTACHMENT 2 TO SCHEDULE B
SECURITIES LENDING AUTHORIZATION AGREEMENT
(the "Agreement")
BETWEEN THE BOARD OF ADMINSTRATION OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM ("System") AND THE NORTHERN TRUST COMPANY (the "Agent")

*INVESTMENT MANAGER GUIDELINES FOR CUSTOM NON-CASH COLLATERAL ACCOUNT*

## Non-Cash Collateral Guidelines

Listed below are the Non-Cash Collateral Guidelines specifying collateralization levels and eligible Non-Cash Collateral.

Agent will make use of market standard settlement methods for Non-Cash Collateral, including the use of a tri-party custodian. Any cash held intra-day or temporarily overnight at a tri-party custodian with respect to Non-Cash Collateral arising directly from Loans is a balance sheet obligation of the bank used by your custodian.

Capitalized terms used but not defined herein shall have the meanings given to them in the Addendum or the Agreement, as applicable.

## Collateralization Levels

Initial collateralization levels for all Loans will not be less than 102% of the Market Value of the Borrowed Securities, or not less than 105% if the Borrowed Securities and the Non-Cash Collateral are denominated in different currencies. Initial Non-Cash Collateral will be received prior to, or simultaneously with, delivery of loaned securities.

Marking to market is performed every business day subject to de minimis rules of change in value, and, pursuant to the Borrowing Agreements, the Borrower is required to deliver additional Non-Cash Collateral when necessary so that the total Non-Cash Collateral held by Agent for all Loans to the Borrower of all Participating Lenders will at least equal the Market Value of all the Borrowed Securities of all Participating Lenders loaned to the Borrower. If the Borrowed Securities and the initial Non-Cash Collateral are denominated in the same currency, additional Non-Cash Collateral may be denominated in a currency different from that of the original Non-Cash Collateral, but Non-Cash Collateral levels shall be maintained throughout the Loan as if all Non-Cash Collateral were denominated in the same currency as the Borrowed Securities.

## Eligible Instruments

Eligibility of Non-Cash Collateral is determined at the time of receipt of such Non-Cash Collateral.

- Obligations issued or guaranteed by the U.S., U.K., and any other OECD (Organization for Economic Cooperation and Development) member states or their local governments, agencies, instrumentalities or authorities ("Government and Agency Instruments")

- Obligations issued by Supranational entities

- Corporate debt securities, including convertible securities and excluding commercial paper, issued by U.S. and non-U.S. corporations and which match the currency of the borrowed securities

- Equity securities which are part of any of the following indices:

| | |
|---|---|
| Australia S&P/ASX 200 | Hong Kong Hang Seng |
| Canada S&P/TSX 60 | Japan NIKKEI 225 |
| German DAX 30 | United Kingdom FTSE 100 |
| EURO STOXX 50 | United States S&P 500 |
| France CAC 40 | United States Russell 1000 |
| | United States Russell 3000 |

### Credit Quality

- Except for obligations issued or guaranteed by the U.S. Government and U.K. Government, Government and Agency Instruments and Supranational Instruments are restricted to those obligations with a long-term rating (or issued by an issuer that is rated with respect to a class of long-term obligations or a comparable long-term obligation) of AA- or higher (or the equivalent) at time of receipt by at least one Nationally Recognized Statistical Rating Organization ("NRSRO").

- Corporate debt securities are restricted to those obligations with a long-term rating (or issued by an issuer that is rated with respect to a class of long-term obligations or a comparable long-term obligation) of AA (or the equivalent) or higher by at least two NRSROs. If there are more than two ratings by NRSROs, then all ratings must be AA (or the equivalent) or higher.

### Diversification

- Obligations issued or guaranteed by the U.S., U.K., and any other OECD member states or their local governments, agencies, instrumentalities or authorities and supranational obligations may be accepted without limit.

- Equity and convertible securities may only be accepted (interchangeably) as Collateral for equity and convertible securities loans. Corporate debt securities, other than convertible securities, may only be accepted as Collateral for loans of corporate debt securities (other than convertible securities).

- Eligible Instruments shall be accepted subject to internal diversification limits (which may include, without limitation, issuer or liquidity restrictions) as may be established for each Instrument type by Agent's appropriate risk committee from time to time.

**Dated:**

**THE BOARD OF ADMINISTRATION OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM**

Neil M. Guglielmo

**By:**

**Name:** Neil Guglielmo

**Title:** General

Manager

ACCEPTED:

THE NORTHERN TRUST COMPANY

By: G B Trapp

Name: George Trapp

Title: Senior Vice President

# ATTACHMENT 1 TO SCHEDULE B
# SECURITIES LENDING AUTHORIZATION AGREEMENT
# (the "Agreement")
# BETWEEN THE BOARD OF ADMINSTRATION OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM ("System") AND THE NORTHERN TRUST COMPANY (the "Agent")

## *INVESTMENT MANAGER OBJECTIVES AND GUIDELINES FOR CUSTOM CASH COLLATERAL ACCOUNT / COLLATERAL ACCOUNT ('THE SHORT TERM INVESTMENT ACCOUNT')*

## INVESTMENT OBJECTIVE

To seek to maximize current income to the extent consistent with safety of principal, maintenance of liquidity and the investment standards set forth below. The Short Term Investment Account (the "Fund") is intended as a separate account for the investment of U.S.-dollar based cash Collateral received by Agent.

Upon the effective date of these guidelines, the Lender and Agent hereby acknowledge that there may be certain assets in the Fund that would not meet these guidelines if newly purchased at this time ("Transition Assets"), though these assets were in compliance with the relevant guidelines at the time of purchase. The Lender and Agent hereby agree that Agent may, at its sole discretion, hold Transition Assets until maturity, unless otherwise directed by Lender.

### Cash Collateral Guidelines

Listed below are the cash Collateral guidelines specifying eligible investments, credit quality standards, and diversification, maturity and liquidity requirements. Subject to the above, all requirements, including diversification, listed in these guidelines are effective at the time of purchase of any security or instrument as a cash Collateral investment. Agent will make use of market standard settlement methods for cash investments including the use of a tri-party custodian as approved by Agent's appropriate risk committee. Settlement through a tri-party custodian may result in cash collateral.

## INVESTMENT GUIDELINES

### 1. Eligible Investments:

(a) Obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities and custodial receipts with respect thereto.

(b) Obligations of domestic or foreign commercial banks, including Agent (or branches thereof where deposits with branches are general obligations of the parent bank) and bank holding companies, including, but not limited to, commercial paper, bankers' acceptances, certificates of deposit, time deposits, notes and bonds. Obligations of foreign commercial banks shall only be acceptable from issuers domiciled in countries with a sovereign credit rating of AA- or higher (or the equivalent) by at least two Nationally Recognized Statistical Rating Organizations ("NRSRO").

(c) Obligations of U.S. and foreign corporations, including, but not limited to, commercial paper, notes, bonds and debentures. Asset backed commercial paper is excluded from eligible investments.

(d) Obligations issued by foreign governments. The issuing country shall have a sovereign credit rating of AA- or higher (or the equivalent) by at least two Nationally Recognized Statistical Rating Organizations ("NRSRO").

(e) Units of the NTGI Collective Short Term Investment Fund.

(f) Repurchase agreements with counterparties approved by the Agent's appropriate credit committee at the time of purchase where the Collateral is held by Agent or for the account of Agent by an agent or subcustodian of Agent or a central bank, depository, or a third party custodian, and which is fully collateralized by investments described in paragraph (a) above and having a market value, including accrued interest, equal to or greater than the amount invested in the repurchase agreement. Initial collateralization will be at 102%, except cash collateral shall be collateralized at 100%.

(g) In the case of each investment (a) through (f) above: (i) All investments shall be denominated in U.S. dollars, and (ii) investments may include variable and floating rate instruments. Variable and floating rate instruments will be limited to those securities with reference indexes of Federal Funds Effective, Federal Funds Open, SOFR, OBFR, 1 Month LIBOR and 3 Month LIBOR and which are structured such that the spread relationship between the security coupon rate and index reference rate is constant.

## 2. Credit Quality:

(a) Investments and reinvestments in commercial paper and other short-term obligations shall be limited to obligations (or issuers) with a rating of A1/P1/F1 or higher (or the equivalent) at the time of purchase by any two of the Nationally Recognized Statistical Rating Organizations ("NRSROs") that have assigned a rating to such security (or issuer).

(b) With respect to bonds and other long-term obligations, investments and reinvestments shall be limited to obligations rated at the time of purchase in one of the two highest rating categories (within which there may be sub-categories or gradations indicating relative standing) by the NRSROs that have assigned a rating to such security.

(c) Notwithstanding (a) and (b) above, Agent may invest assets of the Fund in the NTGI Collective Short Term Investment Fund.

**3. Diversification:**

(a) Except for repurchase agreements and obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities, a maximum of 3% of the value of the total assets of the Fund may be invested in securities of any one issuer. With respect to the NTGI Collective Short Term Investment Fund, holdings in excess of 3% of the value of total assets of the Fund are permitted, but should not exceed 50% without written permission from the client.

(b) A maximum of 15% of the value of the total assets of the Fund may be invested in repurchase agreements with one counterparty.

(c) A maximum of 15% of the value of the total assets of the Fund may be exposed to the risks of any one foreign country and a maximum of 25% of the value of the total assets of the Fund may be exposed to the risks of non-U.S. entities. This limitation is applicable to the obligations of all foreign issuers. Only entities domiciled in countries with a sovereign credit rating of AA- or higher (or the equivalent) by at least two Nationally Recognized Statistical Rating Organizations ("NRSRO") are eligible for investment, subject to that restriction outlined in 1 (b) above.

(d) Except for the banking industry, a maximum of 25% of the value of the total assets of the Fund may be invested in obligations of issuers having their principal business in the same industry. For such purposes, personal and business finance companies are considered to be in separate industries. Finance companies which are wholly-owned will be considered to be in the industries of their parents if there activities are primarily related to financing the operations of their parents.

(e) Compliance with the credit quality and diversification requirements of these guidelines shall be determined on the basis of values or ratings at the time of acquisition of any security.

**4. Liquidity/Maturity:**

(a) A minimum of 20% of the value of the assets of the Fund should mature daily. Holdings of the NTGI Collective Short Term Investment Fund will be included in this calculation.

(b) A minimum of 35% of the value of the assets of the Fund will mature within one month.

(c) The interest rate sensitivity of the Fund will be limited to a maximum of 60 days.

(d) The maximum final or average maturity of any variable or floating rate security will be limited to 60 days; the maximum final or average maturity of a fixed rate security will be limited to 60 days; and the maximum weighted average maturity (as herein defined) of the Fund will be limited to 60 days.

(e) Compliance with the liquidity and maturity requirements of these guidelines shall be determined on the basis of values or ratings at the time of acquisition of any security.

(f) For the purposes of this Attachment 1, the "maturity" of a security or instrument shall be defined as the date when final payment is due, with these exceptions: (a) instruments issued or guaranteed by the U.S. Government or any agency or instrumentality thereof which have a variable rate of interest shall be deemed to have a maturity equal to the period remaining until the next readjustment of the interest rate, (b) variable rate instruments (other than those described in (a) above) shall be deemed to have a maturity equal to the longer of the period of time remaining until either, (i) the next readjustment of the interest rate or (ii) the principal amount can be recovered through demand or maturity, (c) floating rate instruments which incorporate a demand feature shall be deemed to have a maturity equal to the period of time remaining until the principal amount can be recovered through demand, (d) a repurchase agreement shall be deemed to have a maturity equal to the period of time remaining until the date on which the repurchase is scheduled to occur, or, if no date is specified but the agreement is subject to demand, the notice period applicable to a demand for the repurchase of the securities.

(g) For the purposes of this Attachment 1, the "interest rate sensitivity" of a security or instrument shall mean (a) in the case of a fixed rate security or instrument (i) the date on which final payment is due or (ii) the principal amount can be recovered through demand (if applicable) or (b) in the case of a floating or variable rate security or instrument, the shorter of the period of time remaining until either (i) the next readjustment of the interest rate or (ii) the principal amount can be recovered through demand (if applicable).

## 5. Trading Policy

Although the Fund will generally not engage in short-term trading, the Agent may dispose of any portfolio security prior to its maturity if, on the basis of a revised credit evaluation of the issuer or other considerations, Agent believes such disposition is in the best interest of the fund. Subsequent to its purchase, a portfolio security or issuer thereof may be assigned a lower rating or cease to be rated. Such an event would not necessarily require the disposition of the security, if the continued holding of the security is determined to be in the best interest of the Fund. In any event, Lender will be notified within five business days when any security is downgraded below the minimum requirements set forth in these investment guidelines.

**THE NORTHERN TRUST COMPANY**

By: Sandra L Luin

Title: Senior Vice President

Date: June 11, 2020

**BOARD OF ADMINISTRATION**
**LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM**

By: Neil M. Guglielmo
Neil M. Guglielmo, General Manager

Date: 06/12/2020

# ATTACHMENT 2 TO SCHEDULE B
# SECURITIES LENDING AUTHORIZATION AGREEMENT
# (the "Agreement")
# BETWEEN THE BOARD OF ADMINSTRATION OF THE LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM ("System") AND THE NORTHERN TRUST COMPANY (the "Agent")

## *INVESTMENT MANAGER GUIDELINES FOR CUSTOM NON-CASH COLLATERAL ACCOUNT*

### Non-Cash Collateral Guidelines

Listed below are the Non-Cash Collateral Guidelines specifying collateralization levels and eligible Non-Cash Collateral.

Agent will make use of market standard settlement methods for Non-Cash Collateral, including the use of a tri-party custodian. Any cash held intra-day or temporarily overnight at a tri-party custodian with respect to Non-Cash Collateral arising directly from Loans is a balance sheet obligation of the bank used by your custodian.

Capitalized terms used but not defined herein shall have the meanings given to them in the Addendum or the Agreement, as applicable.

### Collateralization Levels

Initial collateralization levels for all Loans will not be less than 102% of the Market Value of the Borrowed Securities, or not less than 105% if the Borrowed Securities and the Non-Cash Collateral are denominated in different currencies. Initial Non-Cash Collateral will be received prior to, or simultaneously with, delivery of loaned securities.

Marking to market is performed every business day subject to de minimis rules of change in value, and, pursuant to the Borrowing Agreements, the Borrower is required to deliver additional Non-Cash Collateral when necessary so that the total Non-Cash Collateral held by Agent for all Loans to the Borrower of all Participating Lenders will at least equal the Market Value of all the Borrowed Securities of all Participating Lenders loaned to the Borrower. If the Borrowed Securities and the initial Non-Cash Collateral are denominated in the same currency, additional Non-Cash Collateral may be denominated in a currency different from that of the original Non-Cash Collateral, but Non-Cash Collateral levels shall be maintained throughout the Loan as if all Non-Cash Collateral were denominated in the same currency as the Borrowed Securities.

**Eligible Instruments**

Eligibility of Non-Cash Collateral is determined at the time of receipt of such Non-Cash Collateral.

- Obligations issued or guaranteed by countries with a sovereign credit rating of AA- or higher (or the equivalent) by at least two Nationally Recognized Statistical Rating Organization ("NRSRO"), or by these countries' local governments, agencies, instrumentalities or authorities ("Government and Agency Instruments").

- Obligations issued by Supranational entities

- Corporate debt securities, including convertible securities and excluding commercial paper, issued by U.S. and non-U.S. corporations and which match the currency of the borrowed securities

- Equity securities which are part of any of the following indices:

| | |
|---|---|
| Australia S&P/ASX 200 | Hong Kong Hang Seng |
| Canada S&P/TSX 60 | Japan Nikkei 225 |
| German DAX 30 | United Kingdom FTSE 100 |
| EURO STOXX 50 | United States S&P 500 |
| France CAC 40 | United States Russell l000 |
| | United States Russell 3000 |

- Obligations issued or guaranteed by countries with a sovereign credit rating of AA- or higher (or the equivalent) by at least two Nationally Recognized Statistical Rating Organization ("NRSRO"), or by these countries' local governments, agencies, instrumentalities or authorities ("Government and Agency Instruments") may be accepted as Collateral for all types of loanable securities.

- Equity and convertible securities may only be accepted (interchangeably) as Collateral for equity and convertible securities loans. Corporate debt securities, other than convertible securities, may only be accepted as Collateral for loans of corporate debt securities (other than convertible securities).

**Credit Quality**

- Government and Agency Instruments and Supranational Instruments are restricted to those obligations with a long-term rating (or issued by an issuer that is rated with respect to a class of long-term obligations or a comparable long-term obligation) of AA- or higher (or the equivalent) at time of receipt by at least two Nationally Recognized Statistical Rating Organization ("NRSRO").

- Corporate debt securities are restricted to those obligations with a long-term rating (or issued by an issuer that is rated with respect to a class of long-term obligations or a comparable long-term obligation) of AA (or the equivalent) or higher by at least two NRSROs. If there are more than two NRSRO ratings, then all ratings must be AA (or the equivalent) or higher.

- In the event that any security is downgraded below the requirements set forth by the above credit quality guidelines, the Agent shall, within five business days, notify Lender and present remedial action to restore collateral credit quality requirements.

**Diversification**

- Eligible Instruments shall be accepted subject to internal diversification limits (which may include, without limitation, issuer or liquidity restrictions) as may be established for each Instrument type by Agent's appropriate risk committee from time to time. The Agent shall disclose said internal diversification limits upon request by the Lender.

**THE NORTHERN TRUST COMPANY**

By: Sandra L Lui

Title: Senior Vice President

Date: June 11, 2020

**BOARD OF ADMINISTRATION**
**LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM**

By: Neil M. Guglielmo
Neil M. Guglielmo, General Manager

Date: 06/12/2020

LACERS
LOS ANGELES CITY EMPLOYEES'
RETIREMENT SYSTEM

**REPORT TO BOARD OF ADMINISTRATION** **MEETING: OCTOBER 27, 2020**
**From: Neil M. Guglielmo, General Manager** **ITEM: VII – E**

SUBJECT: **CONTINUED DISCUSSION OF TEMPORARY ASSET ALLOCATION AND REBALANCING POLICIES AND POSSIBLE BOARD ACTION**

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

## Recommendation

That the Board:

1. Authorize staff to continue to hold up to 5% cash in the Unallocated Cash Account (UCA) to increase operational liquidity through the fiscal year ending June 30, 2021; and,

2. Authorize staff to continue to defer rebalancing of the asset allocation through the fiscal year ending June 30, 2021 if deemed appropriate; and,

3. Direct staff to report to the Board prior to the fiscal year ending June 30, 2021 on the status of the Asset Allocation Policy and Rebalancing Policy waivers.

## Executive Summary

This report provides a status update on the temporary modifications to the Asset Allocation Policy and Rebalancing Policy approved by the Board on March 24, 2020. Staff recommends continuing with these policy waivers through the fiscal year ending June 30, 2021.

## Discussion

*Background*
On March 24, 2020, the Board approved temporary modifications to the Asset Allocation Policy and Rebalancing Policy, which authorized (1) an increase in cash held in the UCA from a maximum 2% weighting of total fund assets to a maximum 5% weighting of total fund assets; and (2) a deferment of rebalancing as deemed appropriate. These modifications were made to ensure operational liquidity for on-going cash obligations and to reduce the risk of trading securities in extreme market conditions caused by the COVID-19 pandemic. The Board also directed staff to provide this six-month follow up report to update the Board on the status of these waivers.

*Update on UCA Cash Balances and Rebalancing Activity*
The month-end cash balances of the UCA from March 31, 2020 to September 30, 2020 and as of October 16, 2020 are presented in the following table. The month-end weightings of each asset class are presented in Attachment 2 for reference.

| 2020 | Mar 31 | Apr 30 | May 31 | Jun 30 | Jul 31 | Aug 31 | Sept 30 | Oct 16 |
|---|---|---|---|---|---|---|---|---|
| UCA (in millions) | $111 | $297 | $367 | $281 | $329 | $238 | $165 | $989 |
| UCA (% of total fund) | 0.6% | 1.7% | 2.1% | 1.6% | 1.7% | 1.2% | 0.9% | 5.0% |

Subsequent to the Board's approval of the policy modifications, staff increased the UCA cash balance above a 2% weighting in four of the last six months, on or around the following dates: April 15, 2020 (2.1%), May 29, 2020 (2.1%), July 20, 2020 (2.2%), and October 16, 2020 (5.0%). In April and May of 2020, staff increased the cash balance in the UCA to approximately 2.1% of total fund assets by rebalancing $600 million cash from the core fixed income asset class, which had exceeded the upper bound of its target asset allocation range (refer to Attachment 2 for month-by-month asset allocation weightings). The need for increased operational liquidity tempered in the following months as market volatility gradually declined and the volume of private market capital calls normalized to pre-pandemic levels. Staff paused on further increasing the UCA cash balance until July 2020, when the City made its annual cash contribution of approximately $647 million. Of this amount, $147 million was allocated to the UCA, increasing the weighting to approximately 2.2%; the remaining balance of the City contribution was invested across the total fund portfolio.

Staff paused again on raising additional cash for the UCA until the current month (October 2020). Public equities asset classes have rallied above pre-pandemic levels, with domestic equities briefly breaching the upper bound of its target asset allocation range in September. Thus, staff initiated a rebalance action in the current month by raising $821 million from the domestic equities and non-U.S. equities asset classes to increase the UCA to the temporary maximum weighting of 5% ($989 million on October 16, 2020) to provide near-term funding of investment managers hired from recently completed searches and to provide sufficient cash for routine operational needs over the next several months. Staff anticipates the UCA to return to a maximum 2% allocation by calendar year end 2020.

While extreme volatility that characterized the early months of the pandemic has subsided, market volatility remains elevated. As of October 16, 2020, the VIX index closed at 26.85, which is nearly double its closing value from one year prior. Staff anticipates this heightened market volatility to persist through at least the first half of calendar year 2021 corresponding to political and economic uncertainty. Therefore, staff recommends continuing with the temporary modifications to hold up to 5% in the UCA and defer rebalancing of the asset allocation as deemed appropriate. Additionally, staff recommends that these modifications remain in effect through the fiscal year ending June 30, 2021. Should the Board approve these recommendations, staff would provide the Board with another status report prior to the conclusion of the fiscal year, and make an appropriate recommendation to either extend these modifications or restore current policy.

**Strategic Alignment**

The temporary modification of LACERS' Asset Allocation Policy and Rebalancing Policy under the current unusual and volatile market conditions aligns with both the Strategic Plan Goals to optimize long-term risk adjusted investment returns (Goal IV) and to uphold good governance practices which affirm transparency, accountability, and fiduciary duty (Goal V).

Prepared By: James Wang, Investment Officer I, Investment Division

NMG/RJ/BF/JW:ap

Attachments:
1. March 24, 2020 Board Report
2. Asset Allocation Chart – March 31, 2020 to October 16, 2020

LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

**REPORT TO BOARD OF ADMINISTRATION**
**From: Lita Payne, Executive Officer** Lita Payne

**MEETING: MARCH 24, 2020**
**ITEM: IX – B**

SUBJECT: **TEMPORARY MODIFICATIONS TO THE ASSET ALLOCATION AND REBALANCING POLICIES AND POSSIBLE BOARD ACTION**

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

## Recommendation

That the Board:

1. Authorize staff to hold up to 5% cash in the Unallocated Cash Account (UCA) to increase operational liquidity; and,

2. Authorize staff to defer rebalancing of the asset allocation if deemed appropriate; and,

3. Report to the Board in six months on the status of the Asset Allocation Policy and Rebalancing Policy waivers.

## Discussion

LACERS' Board of Administration (Board) approves and updates an Asset Allocation Policy and a Rebalancing Policy as a part of the Investment Policy Statement (IPS), which provides staff an implementation and asset management framework to achieve performance objectives and control risk. The Board approved the current Investment Policy Statement on February 12, 2019.

The Investment Policy Statement is designed to address varying market conditions by controlling asset allocation implementation and initiating rebalancing by staff. The current market conditions are unusual and volatility is well-beyond historical averages. The VIX, a popular measure of the stock market's expected volatility, was approximately 74 on March 17, 2020, well above the historical normalized market conditions figure of approximately 20. In such volatile markets, even the best designed asset allocation model and rebalancing may need special consideration and discussion, prior to actions (that are normally part of routine implementation and rebalancing of assets) being taken.

*Cash Asset Class Weighting (Unallocated Cash Account or UCA)*
Staff believes that while extreme market volatility is present and owing to the decline in the total portfolio value to $15.7 billion, shoring up liquidity within the UCA is important to ensure that LACERS can readily meet on-going cash flow obligations of approximately $95 million per month that includes retirement

payroll, health insurance premiums, private market capital calls, and staffing and operational expenses while at the same time reduce risk associated with trading securities in extreme market conditions.

While staff believes that having multiples of monthly liquidity readily available during volatile market conditions is prudent to ensure a timely and possibly more cost-effective approach to cash management, there are risks of moving materially away from the established policy weightings. Staff and NEPC, LLC (NEPC), LACERS' general fund consultant, believe holding higher cash balances in the UCA will not have a material impact on LACERS' ability to further implement the current asset allocation initiatives under the asset allocation policy approved by the Board in April 2018. As this recommended increase above 2% is temporary, staff will report back to the Board in six months on status of the temporary increased cash (UCA) weighting and make an appropriate recommendation to either extend this recommendation (with or without weighting adjustments) or restore the current policy weighting of 2%. The table below illustrates various cash weighting scenarios and the numerical deviation away from the 2% cash policy weighting.

| Cash (UCA) Weighting | Maximum Cash (millions) | Difference from 2% Policy | Multiple of monthly cash obligations |
|---|---|---|---|
| 1.4% | $220 | (30%)[1] | 2.3 x |
| **2.0%** | **$314** | **0%** | **3.3 x** |
| 3.0% | $471 | 50% | 4.9 x |
| 4.0% | $628 | 100% | 6.6 x |
| 5.0% | $785 | 150% | 8.3 x |

[1] Difference below the 2% current cash policy weight%.

*Rebalancing*
Staff and NEPC believe that having the option to suspend rebalancing during extreme periods of volatility is prudent. As previously mentioned, the IPS is designed to address most market conditions; and history has proven that rebalancing is an effective tool to ensure compliance with expected performance and risk characteristics of the total investment portfolio. In volatile periods, there is a possibility that the asset allocation policy requires a rebalancing between or among asset classes. However, understanding that an out-of-balance asset class due to large market swings may later "self-rebalance" due to a stabilization of the market may help prevent a premature rebalancing that may incur costly market impact and transaction costs. For this reason, staff and NEPC believe that allowing staff to defer any required rebalancing during extreme market volatility will result in reducing market volatility risk and transaction costs. Staff proposes that any required rebalancing occur when market conditions are more favorable as reflected by lower volatility; staff will seek the concurrence of NEPC at that time, and report back to the Board of any deferred and actual rebalancing activities during subsequent CIO's reports.

## Strategic Plan Impact Statement

Temporarily modifying the LACERS asset allocation and rebalancing policies under the current unusual and volatile market conditions may assist LACERS with optimizing long-term risk adjusted investment returns (Goal IV); upholding good governance practices which affirm transparency, accountability and fiduciary duty (Goal V); and maximizing organizational effectiveness and efficiency (Goal VI).

Prepared By: Rod June, Chief Investment Officer

RJ/BF/WL/jp

Attachments:
1. Investment Policy – Sections IV & V (pages 169 to 173)
2. Asset Allocation – March 16, 2020
3. VIX Historical Graphs (2 pages)

6. Report situations where accurate security pricing, valuation, and accrued income are either not possible or subject to considerable uncertainty.
7. Assist the System to complete such activities as the annual audit, transaction verification, or unique issues as required by the Board.
8. Manage a securities lending program to enhance income if directed by the Board. If the securities lending program is managed externally, full cooperation must be provided.

E. **Duties of the General Fund Consultant**

The General Fund Consultant shall be responsible for the following:

1. Review quarterly performance including performance attribution on the Board's managers and total assets, including a check on guideline compliance and adherence to investment style and discipline.
2. Make recommendations for Board presentation regarding investment policy and strategic asset allocation.
3. Assist the Board in the selection of qualified investment managers and in the review of existing managers, including monitoring changes in personnel, ownership and the investment process.
4. Assist the Board in the selection of a qualified custodian if necessary.
5. Provide topical research and education on investment subjects as requested by the Board or Investment Staff.

F. **Duties of Parties Involved in LACERS' Matters**

The Board is committed to maintaining a workplace that is free of sexual harassment and illegal discrimination. Investment managers, consultants, and other contractors assisting with the implementation of the Board's investment program shall adopt written policies prohibiting sexual harassment and illegal discrimination of any kind to ensure a safe working environment and to protect the System's assets from business risks arising from such misconduct.

Pursuant to this commitment, prior to finalizing its contract with the Board, every public markets contractor shall disclose to the Board all current, pending, and anticipated litigation concerning sexual harassment or related discrimination claims that may have a material impact on the Board's investment(s) managed by said contractor. This disclosure requirement is mandatory for such contracts or amendments dated March 1, 2019 or later.

## IV. ASSET ALLOCATION POLICY

The policies and procedures of the Board's investment program are designed to maximize the probability that the investment goals will be fulfilled. Investment policies will evolve as the System's conditions change and as investment conditions warrant. The Board reviews the Asset Allocation Policy strategically approximately every three years and on a tactical basis more frequently.

## Section 1 INVESTMENT POLICY

The Board adopts and implements the Asset Allocation Policy that is predicated on a number of factors, including:

A. A projection of actuarial assets, liabilities, benefit payments, and required contributions;
B. Historical and expected long-term capital market risk and return behavior;
C. An assessment of future economic conditions, including inflation and interest rate levels; and
D. The current and projected funding status of the System.

This policy provides for diversification of assets in an effort to maximize the investment return of the System consistent with market conditions. Asset allocation modeling identifies the asset classes the System will utilize and the percentage that each class represents of the total plan assets. Due to the fluctuation of market values, positioning within a specified range is acceptable and constitutes compliance with the policy. It is anticipated that an extended period of time may be required to fully implement the Asset Allocation Policy and that periodic revisions will occur. The Board will monitor and assess the actual asset allocation versus policy and will rebalance as appropriate.

The Board will implement the Asset Allocation Policy using investment managers to invest the assets of the System's portfolio components subject to investment guidelines. Equity managers may not hold more than 10% of the market value of their portfolios in cash without Board approval, unless otherwise specified in their manager guidelines. The long-term asset allocation targets and ranges for the investments of the System's assets are presented in the latest Board-approved Asset Liability Study and Asset Allocation Policy.

The Board will allocate segments of the System's assets to each investment manager and specify guidelines, objectives and standards of performance, which are to apply to each manager's portfolio. These decisions will encompass allocating segments of the System assets, and segments of individual asset classes, between active and passive investment management, the active risk of the portfolio and to provide broad market exposure.

### V. INVESTMENT POLICY

The Board will retain external investment managers to manage the System's assets using a specific style and methodology. Public external investment managers have been delegated authority for determining investment strategy, security selection, and timing. Public external investment managers are subject to the Board's policy and individual investment manager guidelines, legal restrictions, and other Board direction. Performance objectives will also be developed for each manager. The performance of each portfolio will be monitored and evaluated on a regular basis relative to each portfolio component's benchmark return and, if available, relative to a peer group of managers following similar investment styles. Private market investment managers shall manage the System's assets pursuant to the respective asset class policy and the partnership fund's limited partnership agreement or other applicable legal documents.

## Section 1 INVESTMENT POLICY

Investment actions are expected to comply with "prudent person" standards. Each investment manager will be expected to know the rules of the Board and comply with those rules. It is each manager's responsibility to identify policies that have an adverse impact on performance and to initiate discussion toward possible improvement of the rules of the Board.

The Board will also review each investment manager's adherence to its investment policy and any material changes in the manager's organization (e.g., personnel changes, new business developments, etc.). The investment managers retained by the Board will be responsible for informing the Board of such material changes within a reasonable timeframe as articulated within their respective investment guidelines.

Investment managers under contract to the Board shall have discretion to establish and execute transactions with securities broker/dealer(s). The investment managers will attempt to obtain best execution with respect to every portfolio transaction. The following transactions will be prohibited: net short sales; selling on margin; writing options other than covered options; "prohibited transactions" as defined under the Employee Retirement Income Security Act (ERISA); and, transactions that involve a broker acting as a "principal," where such broker is also the investment manager making the transaction. The investments of the Board's assets will be subject to the following general policies.

### A. **Manager Selection**

The selection of investment managers is accomplished in accordance with all applicable local, state, and federal laws and regulations. Each investment manager, consultant, and custodian functions under a formal contract that delineates responsibilities and appropriate performance expectations. Section VII describes LACERS' Manager Search and Selection Policy which articulates the process that will be employed for each public markets manager search.

### B. **Manager Authority**

The Board's investment managers shall direct and manage the investment and reinvestment of assets allocated to their accounts in accordance with this document; Board rules or direction, applicable local, state, and federal statutes and regulations and individual management investment plans and executed contracts.

### C. **Brokerage Policy**

The Board directs all investment managers trading public securities to utilize brokers who shall fulfill brokerage transactions for System assets in accordance with best execution. Subsequently, all LACERS public equity managers are to utilize commission recapture brokers on a best efforts basis. Commission recapture is a program designed to reduce fund expenses and increase cash flow by returning a portion of the commissions that external investment managers pay to brokers. Staff will provide to the Board an annual report summarizing commission and recapture activity for the fiscal year. The report will be presented within four months following the end of the fiscal year.

### D. **Proxy Voting**

Proxy voting rights will be managed with the same care, skill, diligence, and prudence as is exercised in managing other assets. Proxy voting rights will be exercised in the sole interest of the System's members and beneficiaries in accordance with all applicable statutes consistent with the Board Proxy Voting Policy, which is found in Section XIV of this policy statement.

### E. **Securities Lending**

The Board has authorized the execution of a "Securities Lending Program," which may be managed by the Board's custodian or delegated to a third-party provider. The Board will monitor and review the program. This program is described in the Securities Lending Policy (Section XV of this document) and in the Securities Lending Agreement of the securities lending provider. The initial collateral levels will not be less than 102% of the market value of the borrowed securities, or not less than 105% if the borrowed securities and collateral are denominated in different currencies. Marking to market is performed every business day, and the borrower is required to deliver additional collateral when necessary. Stringent cash and non-cash collateral guidelines specify eligible investments, credit quality standards, and diversification, maturity and liquidity requirements.

### F. **Derivatives**

The Board's investment managers may be permitted, under the terms of individual investment guidelines, to use derivative instruments as set forth in each manager's investment guidelines to control portfolio risk. Derivatives are contracts or securities whose returns are derived from the movement of the pricing of other securities. The returns are to be consistent with the manager's mandate from the returns of other securities, indices, or allowable derivative instruments that include, but are not limited to, futures and forwards. Examples of appropriate applications of derivative strategies include hedging interest rates and currency risks, maintaining exposure to a desired asset class while effecting asset allocation changes, and adjusting portfolio duration for fixed income. In no circumstances can managers borrow funds to purchase derivatives. Managers must ascertain and carefully monitor the creditworthiness of any counterparties involved in derivative transactions.

### G. **Rebalancing**

The investment portfolio shall, on an ongoing basis in accordance with market fluctuations, be rebalanced to remain within the range of targeted allocations and distributions among investment advisors. The Board has a long-term investment horizon and utilizes an asset allocation that encompasses a strategic, long-run perspective of capital markets. It is recognized that a strategic long-run asset allocation plan implemented in a consistent and disciplined manner will be the major determinant of the System's investment performance.

Rebalancing is not primarily intended to be used for tactical asset allocation. The Board will not attempt to time the rise or fall of the investment markets by moving away from long-term targets because (1) market timing may result in lower returns than buy-and-hold strategies; (2) there is little or no evidence that one can consistently and accurately predict market timing opportunities; and (3) rebalancing too often may result in excessive transaction costs. However, the Board may authorize staff to rebalance assets within or among asset classes without breaching Board-established asset allocation policy threshold bands. Such rebalancing would be subject to an annually approved Tactical Asset Allocation Plan (TAAP) in order to enhance incremental performance during periods of market dislocations. The Board will consider the approval of a new TAAP or renewal of an existing TAAP within three months prior to the start of each fiscal year. The approved TAAP will be effective on July 1 of each year. Should the Board choose not to renew a TAAP, the existing TAAP may continue to be implemented; however, new TAA positions may not be introduced until a new TAAP is approved by the Board.

The Board delegates the responsibility of rebalancing to the Chief Investment Officer, who will seek the concurrence of the General Fund Consultant. Rebalancing generally will occur when the market values of asset classes (e.g., equities, fixed income, etc.) or sub-asset classes (e.g., large cap value, emerging markets, etc.) exceed their respective thresholds as established by the Board's approved asset allocation and asset class risk budgets.

The portfolio will be monitored daily, but reviewed by senior investment staff (i.e., Chief Investment Officer or Chief Operating Officer) at the beginning of each month to determine the need to rebalance asset classes or sub-asset classes within approved policy bands. Rebalancing will be conducted in a timely manner, taking into consideration associated costs and operational circumstances and market conditions. Rebalancing will be accomplished by using routine cash flows, such as contributions and benefit payments, by reallocating assets across asset classes, investment mandates, and investment managers.

Asset classes temporarily may remain outside of their ranges due to operational and implementation circumstances to include, but not limited to, illiquidity that prevents immediate rebalancing of certain asset classes such as private equity and private real estate; potential asset shifts pending in the portfolio over the next 12 months such as hiring/termination of a manager(s); an asset allocation review of the entire portfolio; or a structural review of a given asset class.

The Chief Investment Officer shall inform the Board in a timely manner of all rebalancing activity.

H. **Evaluation of Policy**

The Investment Policy Statement shall be reviewed by the Board at least annually, with the assistance of the Staff and investment consultant(s), and revised as necessary.

## VI. GENERAL INVESTMENT OBJECTIVES AND GUIDELINES

The general investment objective is to outperform the overall policy portfolio benchmark. The overall policy portfolio benchmark consists of weighted asset class benchmarks for each asset class as determined by the Board. The long term policy benchmarks are listed below:

| Asset Class | Benchmark |
|---|---|
| Domestic Equity | Russell 3000 |
| Non-U.S. Equity | MSCI ACWI ex-U.S. |

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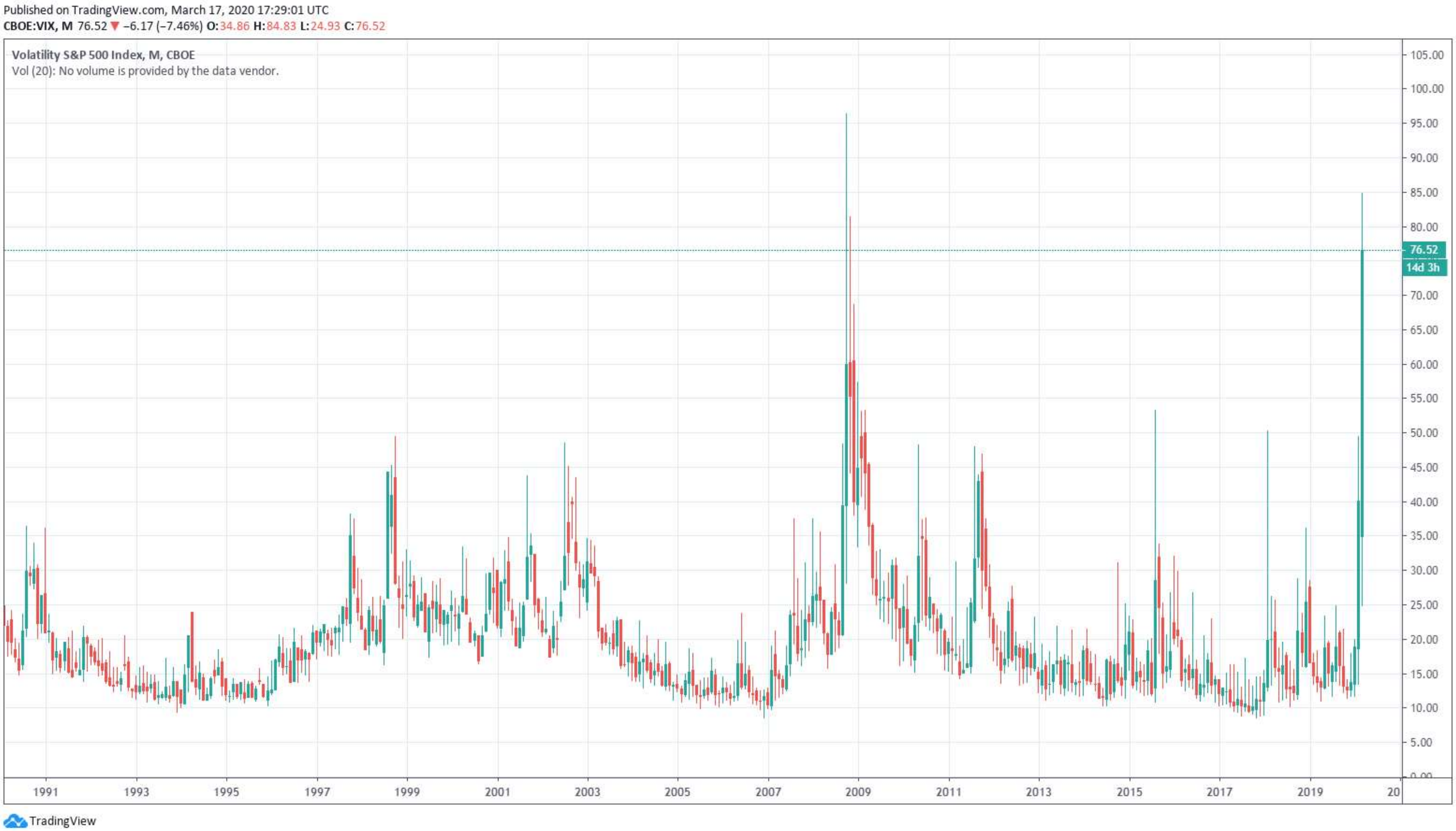
## ASSET ALLOCATION

| CLASS | STYLE | BENCHMARK | CURRENT MKT VALUE $ | CURRENT MKT VALUE % | POLICY TARGET % | POLICY TARGET $ | TARGET $ mm diff | Lower threshhold % | Upper threshold % | EFFECTIVE FEES (in bps) |
|---|---|---|---|---|---|---|---|---|---|---|
| **U.S. EQUITY** | | **Russell 3000** | **3,356.6** | **21.3%** | **19.0%** | **2,990.0** | **(366.5)** | **12.0%** | **26.0%** | |
| Rhumbline | Index | S&P 500 | 2,700.7 | 17.2% | | | | | | 0.58 |
| Rhumbline | Index | Russell 1000 Growth | 0.0 | 0.0% | | | | | | |
| Principal Global | Mid Cap | Russell Mid Cap | 153.2 | 1.0% | | | | | | 38.26 |
| Rhumbline | Index | Russell 2000 | 175.1 | 1.1% | | | | | | 0.58 |
| Rhumbline | Index | Russell 2000 Growth | 96.8 | 0.6% | | | | | | 0.58 |
| EAM Investors | Small Cap Growth | Russelll 2000 Growth | 93.7 | 0.6% | | | | | | 73.01 |
| Rhumbline | Index | Russell 2000 Value | 137.2 | 0.9% | | | | | | 0.58 |
| **NON-U.S. EQUITY** | | **MSCI All Country World Index** | **4,038.6** | **25.7%** | **27.0%** | **4,249.0** | **210.4** | **18.0%** | **36.0%** | |
| State Street | Index | MSCI World Ex-US | 1,301.9 | 8.3% | | | | | | 2.38 |
| Lazard | Dev Mkts Core | MSCI EAFE | 451.4 | 2.9% | | | | | | 53.86 |
| MFS | Dev Mkts Growth | MSCI World Ex-US Growth | 509.4 | 3.2% | | | | | | 42.45 |
| Barrow Hanley | Dev Mkts Value | MSCI EAFE Value | 367.5 | 2.3% | | | | | | 49.78 |
| Oberweis | Dev Mkts Small Cap | MSCI EAFE Small Cap | 172.7 | 1.1% | | | | | | 88.68 |
| AQR Capital | Dev Mkts Small Cap | MSCI EAFE Small Cap | 198.5 | 1.3% | | | | | | 68.82 |
| QMA | Emg Mkts Core | MSCI Emerging Markets | 351.2 | 2.2% | | | | | | 37.12 |
| Axiom International | Emg Mkts Growth | MSCI EM Growth | 365.5 | 2.3% | | | | | | 62.74 |
| DFA | Emg Mkts Value | MSCI Emg Mkts Value | 320.3 | 2.0% | | | | | | 51.56 |
| **CORE FIXED INCOME** | | **BBG BC US Aggregate** | **3,295.3** | **20.9%** | **13.8%** | **2,163.8** | **(1,131.5)** | **10.8%** | **16.8%** | |
| State Street | Index | BBG BC US Aggregate | 955.0 | 6.1% | | | | | | 4.16 |
| Baird | Active Core | BBG BC Gvt/Crdt Intermediate | 350.3 | 2.2% | | | | | | 11.71 |
| Loomis | Active Core | BBG BC US Aggregate | 838.6 | 5.3% | | | | | | 12.38 |
| LM Capital | Active Core | BBG BC US Aggregate | 332.1 | 2.1% | | | | | | 11.55 |
| Neuberger Berman | Active Core | BBG BC US Aggregate | 819.3 | 5.2% | | | | | | 13.39 |
| **CREDIT OPPORTUNITIES** | | **65% BBG BC US HY/35% JPM EMBI GD** | **928.2** | **5.9%** | **12.3%** | **1,927.8** | **999.5** | **8.3%** | **16.3%** | |
| AEGON | High Yield Bonds | BBG BC U.S. High Yield 2% Capped | 333.2 | 2.1% | | | | | | 40.75 |
| Prudential | Emerging Mkt Bonds | JPM EMBI Global Diversified | 379.1 | 2.4% | | | | | | 39.62 |
| Bain | Bank Loans | CSFB Leveraged Loan Index | 215.9 | 1.4% | | | | | | 42.20 |
| **PRIVATE EQUITY** | | **Russell 3000 + 300 bps** | **2,063.3** | **13.1%** | **14.0%** | **2,203.2** | **139.8** | **N/A** | **N/A** | |
| **PUBLIC REAL ASSETS** | | | **1,105.7** | **7.0%** | **6.0%** | **944.2** | **(161.5)** | **4.0%** | **8.0%** | |
| DFA | TIPS | BBG BC U.S. TIPS Index | 754.1 | 4.8% | | | | | | 5.33 |
| CoreCommodities | Commodities | Bloomberg Commodities Index | 180.8 | 1.1% | | | | | | 60.00 |
| Centersquare | REITS | FTSE NAREIT All Equity REIT Index | 170.9 | 1.1% | | | | | | 44.39 |
| **REAL ESTATE** | | **NFI + 80 bps** | **814.2** | **5.2%** | **7.0%** | **1,101.6** | **287.4** | **N/A** | **N/A** | |
| **TRANSITION ACCOUNT** | | | **0.1** | **0.0%** | | | | | | |
| **CASH** | | | **134.9** | **0.9%** | **1.0%** | **157.4** | **22.4** | **0.0%** | **2.0%** | |
| **TOTAL PORTFOLIO** | | | **15,737.0** | **100.0%** | **100.0%** | | | | | |
| ***Holdings as of*** | ***March 16, 2020*** | | | | Securities Lending | **2,198.4** | Util Rate | **17%** | | |

# CBOE Volatility Index (VIX)
# 1991-March 17, 2020



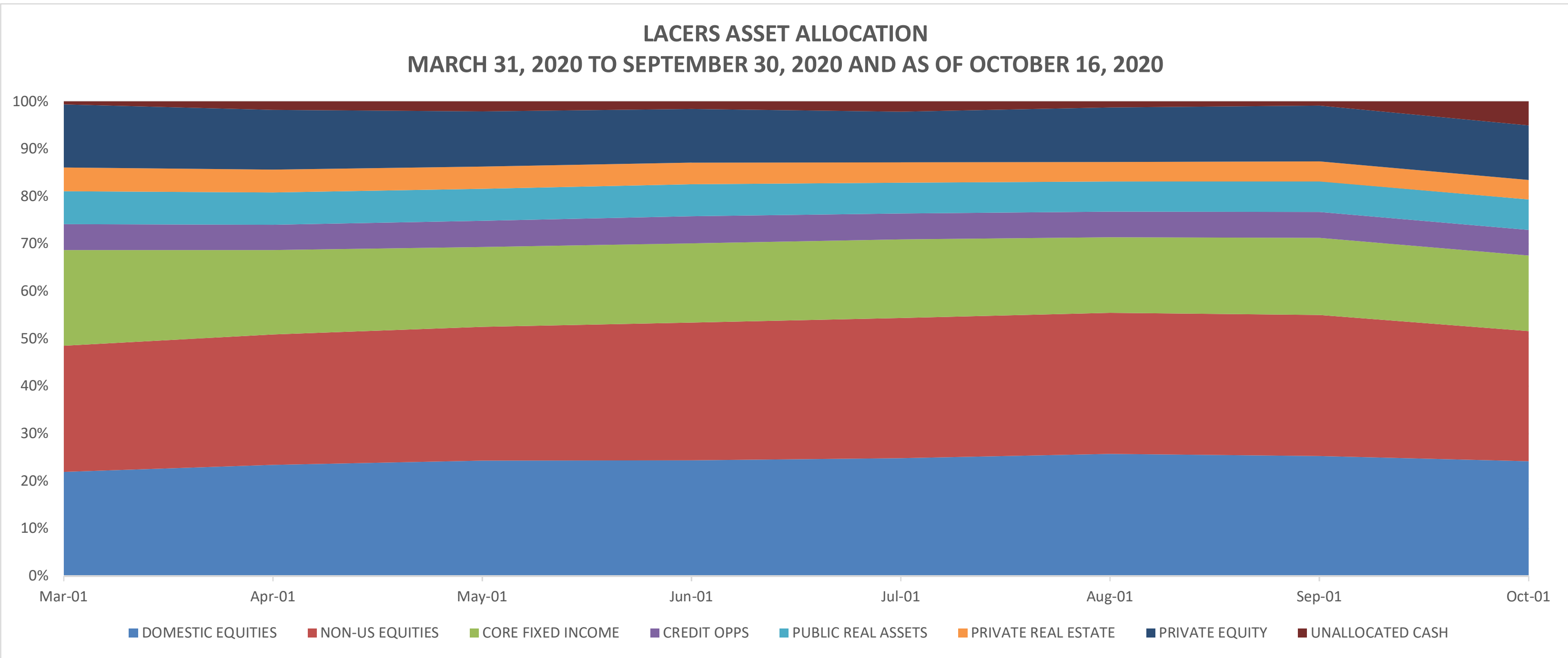
BOARD Meeting: 10/27/20
Item VII-E
Attachment 1

Board Meeting: 03/24/20
Item IX-B
Attachment 3

CBOE Volatility Index (VIX)
May 2019-March 17, 2020

## LACERS ASSET ALLOCATION
## MARCH 31, 2020 TO SEPTEMBER 30, 2020 AND AS OF OCTOBER 16, 2020

| | Actual (%) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ASSET CLASS | Mar-31 | Apr-30 | May-31 | Jun-30 | Jul-31 | Aug-31 | Sep-30 | Oct-16 | Target | Min | Max |
| DOMESTIC EQUITIES | 21.93% | 23.45% | 24.29% | 24.40% | 24.81% | 25.72% | 25.29% | 24.18% | 19.00% | 12.00% | 26.00% |
| NON-US EQUITIES | 26.57% | 27.45% | 28.19% | 28.98% | 29.55% | 29.75% | 29.75% | 27.43% | 27.00% | 18.00% | 36.00% |
| CORE FIXED INCOME | 20.2% | 17.8% | 16.9% | 16.7% | 16.6% | 15.9% | 16.2% | 15.9% | 13.75% | 10.80% | 16.80% |
| CREDIT OPPS | 5.42% | 5.32% | 5.52% | 5.70% | 5.48% | 5.38% | 5.44% | 5.44% | 12.25% | 8.30% | 16.30% |
| PUBLIC REAL ASSETS | 6.9% | 6.8% | 6.8% | 6.8% | 6.5% | 6.4% | 6.5% | 6.4% | 6.00% | 4.00% | 8.00% |
| PRIVATE REAL ESTATE | 5.0% | 4.8% | 4.7% | 4.6% | 4.3% | 4.1% | 4.2% | 4.1% | 7.00% | NA | NA |
| PRIVATE EQUITY | 13.3% | 12.6% | 11.5% | 11.2% | 10.7% | 11.5% | 11.8% | 11.5% | 14.00% | NA | NA |
| UNALLOCATED CASH | 0.6% | 1.7% | 2.1% | 1.6% | 2.2% | 1.2% | 0.9% | 5.0% | 1.00% | 0.00% | 5.00% |
| | | | | | | | | | | | |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | | |



LACERS
LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

**REPORT TO BOARD OF ADMINISTRATION** **MEETING: OCTOBER 27, 2020**
**From: Neil M. Guglielmo, General Manager** **ITEM: IX- B**

SUBJECT: **RECEIVE AND FILE - GASB 68 AND GASB 75 ACTUARIAL VALUATIONS BASED ON JUNE 30, 2019 MEASUREMENT DATE FOR EMPLOYER REPORTING AS OF JUNE 30, 2020**

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

## Recommendation

That the Board receive and file the attached GASB 68 and GASB 75 Actuarial Valuation Reports For Employer Reporting as of June 30, 2020 (Attachments 1 and 2).

## Executive Summary

The Governmental Accounting Standards Board (GASB) requires pension plan sponsors to report certain pension information in their financial statements for fiscal periods beginning on or after June 2014. The attached valuation reports prepared by LACERS' independent actuary, Segal Consulting (Segal), based on June 30, 2019 LACERS actuarial valuations, provide proportionate share of necessary pension information needed by the City, Department of the Airports, and Harbor Department for their financial statements as of June 30, 2020. LACERS' external auditor, Moss Adams, has conducted audit procedures and issued unmodified opinions on the allocation schedules presented in the GASB 68 and GASB 75 valuation reports (Attachment 3).

## Discussion

Accounting standards in financial reporting on pension liabilities of governmental pension plans and their sponsors were issued in 2012 and 2015 by GASB, an accounting standard setting body. GASB Statement No. 67 (GASB 67) and GASB Statement No. 74 (GASB 74) are financial reporting requirements of the plan (LACERS) for its pension benefits and other post-employment benefits (OPEB), while GASB Statement No. 68 (GASB 68) and GASB Statement No. 75 (GASB 75) are financial reporting requirements of the plan sponsor (the City) for the LACERS pension benefits and OPEB. Segal presented the GASB 67 and GASB 74 valuations to the Board on November 12, 2019 together with the annual retirement and health actuarial valuations as of June 30, 2019.

The attached valuations for GASB 68 and GASB 75 were prepared by Segal to provide the proportional share of net pension liability and net OPEB liability along with other information required to report in the June 30, 2020 financial statements for the City, Department of Airports, and Harbor Department.

Key findings from the Segal valuation reports based on the June 30, 2019 measurement date include:

- The Net Pension Liability (NPL) is the difference between the Total Pension Liability (TPL) and the Retirement Plan Fiduciary Net Position. Similarly, the Net OPEB Liability (NOL) is the difference between the Total OPEB Liability (TOL) and the OPEB Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of plan assets and therefore, the NPL/NOL measure is very similar to the Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The NPL/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.

- NPL increased from $5.71 billion to $5.98 billion, mainly due to the returns on market plan assets of 5.57% that was less than assumption of 7.25% used in previous year's valuation. However, NOL decreased from $580.5 million to $522.2 million due to favorable premium renewal experience, offset to some degree by updated trend for future Medicare Part B premiums, investment loss (on market value basis), and miscellaneous demographic and other losses.

  The detail of these changes are presented in Exhibit 5 of the GASB 68 and GASB 75 valuation reports. The NPL/NOL represents a pension/OPEB-related liability measured at June 30, 2019, which will be reflected in the Statement of Net Position/balance sheet of the plan sponsor. These amounts were reported in LACERS June 30, 2019 financial statements as a note disclosure, pursuant to the GASB 67 and GASB 74.

Staff and Andy Yeung, of Segal Consulting will be available for any questions the Board may have.

Prepared By: Rahoof "Wally" Oyewole, Departmental Chief Accountant

NG:TB:RO

Attachments: 1) GASB 68 Actuarial Valuation for June 30, 2020 Employer Reporting Issued by Segal
2) GASB 75 Actuarial Valuation for June 30, 2020 Employer Reporting Issued by Segal
3) Moss Adams Independent Auditor's Reports

**BOARD** Meeting: 10/27/20
Item IX – B
Attachment 1

# Los Angeles City Employees' Retirement System (LACERS)

Governmental Accounting Standards (GAS) 68
Actuarial Valuation Based on June 30, 2019
Measurement Date for Employer Reporting
as of June 30, 2020



Segal

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*July 23, 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) 68 Actuarial Valuation based on a June 30, 2019 measurement date for employer reporting as of June 30, 2020. It contains various information that will need to be disclosed in order for the three employer categories in LACERS (i.e., the City, Airports, and Harbor) to comply with GAS 68.*

*This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the sponsors in preparing their financial report for their liabilities associated with the LACERS pension plan. The census and financial information on which our calculations were based was provided 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 LACERS.*

*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*

*DNA/jl*

## SECTION 1

### VALUATION SUMMARY



## SECTION 2

### GAS 68 INFORMATION



## SECTION 2 (CONTINUED)



## SECTION 3

### ACTUARIAL ASSUMPTIONS AND METHODS AND APPENDICES



Segal

## Purpose

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards (GAS) 68 for employer reporting as of June 30, 2020. The results used in preparing this GAS 68 report are comparable to those used in preparing the Governmental Accounting Standards (GAS) 67 report for the Plan based on a reporting date and a measurement date as of June 30, 2019. 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, 2019, provided by LACERS;
- The assets of the Plan as of June 30, 2019, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2019 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the June 30, 2019 valuation.

## General Observations on GAS 68 Actuarial Valuation

The following points should be considered when reviewing this GAS 68 report:

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

- For this report, the reporting dates for the employer are June 30, 2020 and 2019. The NPL was measured as of June 30, 2019 and 2018 and determined based upon the results of the actuarial valuations as of June 30, 2019 and 2018, respectively. The Plan's Fiduciary Net Position (plan assets) and the TPL were valued as of the measurement dates. Consistent with the provisions of GAS 68, the assets and liabilities measured as of June 30, 2019 and 2018 were not adjusted or rolled forward to the June 30, 2020 and 2019 reporting dates, respectively.

**Significant Issues in Valuation Year**

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

- The NPL increased from $5.71 billion as of June 30, 2018 to $5.98 billion as of June 30, 2019 mainly due to the return on the market value of retirement plan assets of 5.57%[1] during 2018/2019 that was less than the assumption of 7.25% used in the June 30, 2018 valuation (that loss was about $0.24 billion), and other miscellaneous gains. Changes in these values during the last two fiscal years ending June 30, 2018 and June 30, 2019 can be found in Exhibit 5.
- There was an increase in the total employer pension expense from $627.7 million calculated last year to $846.4 million calculated this year. The primary cause of the increase was due to the full recognition of the remaining $203.6 million in credit from an asset gain that was identified in the June 30, 2014 valuation in developing last year's pension expense.
- The discount rate used to measure the TPL and NPL as of June 30, 2019 and 2018 was 7.25%, following the same assumption used by the System in the pension funding valuations as of the same dates. The detailed calculations used in the derivation of the discount rate of 7.25% used in the calculation of the TPL and NPL as of June 30, 2019 can be found in Appendix A of Section 3. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 13 in Section 2.
- The NPLs for the three employer categories in LACERS (i.e., the City, Airports, and Harbor) as of June 30, 2018 and June 30, 2019 are allocated based on the actual employer contributions made during 2017/2018 and 2018/2019, respectively. The steps we used for the allocation are as follows:
    - First calculate the ratio of the employer category's contributions to the total contributions.
    - Then multiply this ratio by the NPL to determine the employer category's proportionate share of the NPL. The NPL allocation can be found in Exhibit 7 in Section 2.
- Results shown in this report exclude any employer contributions made after the measurement date of June 30, 2019. The employer should consult with their auditor to determine the deferred outflow that should be created for these contributions.

[1] *Net of investment expenses only.*

## Summary of Key Valuation Results

| Reporting Date for Employer under GAS 68 | 6/30/2020(1) | 6/30/2019(2) |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **6/30/2019** | **6/30/2018** |
| **Disclosure elements for fiscal year ending June 30:** | | |
| 1. Service cost(3) | $370,409,073 | $352,282,612 |
| 2. Total Pension Liability | 20,793,421,143 | 19,944,579,058 |
| 3. Plan's Fiduciary Net Position | 14,815,592,841 | 14,235,230,528 |
| 4. Net Pension Liability | 5,977,828,302 | 5,709,348,530 |
| 5. Pension expense | 846,434,692 | 627,667,477 |
| **Schedule of contributions for fiscal year ending June 30:** | | |
| 6. Actuarially determined contributions | $478,716,953 | $450,195,254 |
| 7. Actual contributions | 478,716,953 | 450,195,254 |
| 8. Contribution deficiency/(excess): (6) – (7) | 0 | 0 |
| **Demographic data for plan year ending June 30:** | | |
| 9. Number of retired members and beneficiaries | 20,034 | 19,379 |
| 10. Number of vested terminated members(4) | 8,588 | 8,028 |
| 11. Number of active members | 26,632 | 26,042 |
| **Key assumptions as of June 30:** | | |
| 12. Investment rate of return | 7.25% | 7.25% |
| 13. Inflation rate | 3.00% | 3.00% |
| 14. Projected salary increases(5) | Ranges from 10.00% to 3.90%, based on years of service | Ranges from 10.00% to 3.90%, based on years of service |

(1) *The reporting date and measurement date for the Plan are June 30, 2019.*

(2) *The reporting date and measurement date for the Plan are June 30, 2018.*

(3) *The service cost is based on the previous year's valuation, meaning the June 30, 2019 and June 30, 2018 measurement date values are based on the valuations as of June 30, 2018 and June 30, 2017, respectively. Both service costs have been calculated using the economic actuarial assumptions shown in the June 30, 2018 measurement date column since there had been no changes in the economic actuarial assumptions between the June 30, 2017 and June 30, 2018 valuations.*

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

(5) *Includes inflation at 3.00% plus real across the board salary increase of 0.50% plus merit and promotion increases that vary by service.*

### Important Information about Actuarial Valuations

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

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

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

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

- The actuarial valuation is prepared at the request of the Board to assist the sponsors of the Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.

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

As Segal 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 LACERS.

## EXHIBIT 1

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

**Plan Description**

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

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

*Plan membership.* At June 30, 2019, pension plan membership consisted of the following:

| | |
|---|---|
| Retired members or beneficiaries currently receiving benefits | 20,034 |
| Vested terminated members entitled to, but not yet receiving benefits[1] | 8,588 |
| Active members | 26,632 |
| Total | 55,254 |

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

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

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

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

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

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

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

LACERS provides annual cost-of-living adjustments (COLAs) to all retirees. The cost-of-living adjustments are made each July 1 based on the percentage change in the average of the Consumer Price Index for the Los Angeles-Long Beach-Anaheim Area[2]--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, 2019 was 22.71% of compensation.[3]

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

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[2] *Formerly the Los Angeles-Riverside-Orange County Area.*

[3] *Based on the June 30, 2017 funding valuation (which established funding requirements for fiscal year 2018/2019). Exhibit 6 in Section 2 of this report provides details on how this rate was calculated.*

**EXHIBIT 2**

**Net Pension Liability**

| **Reporting Date for Employer under GAS 68** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| The components of the Net Pension Liability are as follows: | | |
| Total Pension Liability | $20,793,421,143 | $19,944,579,058 |
| Plan's Fiduciary Net Position | -14,815,592,841 | -14,235,230,528 |
| Net Pension Liability | $5,977,828,302 | $5,709,348,530 |
| Plan's Fiduciary Net Position as a percentage of the Total Pension Liability | 71.25% | 71.37% |

The NPL was measured as of June 30, 2019 and 2018. 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, 2019 and 2018, respectively.

*Plan provisions.* The plan provisions used in the measurement of the NPL as of June 30, 2019 and 2018 are the same as those used in the LACERS funding valuations as of June 30, 2019 and 2018, respectively.

*Actuarial assumptions.* The TPL as of June 30, 2019 was determined by an actuarial valuation as of June 30, 2019. The actuarial assumptions 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. The assumptions are outlined in Section 3 of this report. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

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

The TPL as of June 30, 2018 was determined by an actuarial valuation as of June 30, 2018. The actuarial assumptions in the June 30, 2018 valuation were based on the results of an experience study for the period from July 1, 2014 through June 30, 2017 and the June 30, 2017 review of economic actuarial assumptions. They are the same as the assumptions used in the June 30, 2018 funding actuarial valuation for LACERS.

In particular, the following actuarial assumptions were applied to all periods included in the measurement:

| | |
|---|---|
| Inflation | 3.00% |
| Salary increases | Ranges from 10.00% to 3.90% based on years of service, including inflation |
| Investment rate of return | 7.25%, net of pension plan investment expense, including inflation |
| Other assumptions | Same as those used in the June 30, 2018 actuarial valuation |

## EXHIBIT 3

### Target Asset Allocation

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses are summarized in the following table. These values were used in the derivation of the long-term expected investment rate of return assumption for the actuarial valuations as of June 30, 2019 and 2018. This information is subject to change every three years based on an actuarial experience study.

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

*Discount rate:* The discount rate used to measure the Total Pension Liability was 7.25% as of June 30, 2019 and June 30, 2018. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employee and employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both June 30, 2019 and June 30, 2018.

## EXHIBIT 4

### 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, 2019, which is allocated to all employer categories, calculated using the discount rate of 7.25%, as well as what LACERS' NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

| | Net Pension Liability | | |
|---|---|---|---|
| **Employer Category** | **1% Decrease (6.25%)** | **Current Discount Rate (7.25%)** | **1% Increase (8.25%)** |
| City | $7,265,673,521 | $4,937,107,456 | $3,016,872,470 |
| Airports | 1,206,743,990 | 819,996,210 | 501,067,480 |
| Harbor | 324,828,487 | 220,724,636 | 134,876,157 |
| Total for all Employer Categories | $8,797,245,998 | $5,977,828,302 | $3,652,816,107 |

## EXHIBIT 5

### Schedule of Changes in Net Pension Liability – Last Two Fiscal Years

| Reporting Date for Employer under GAS 68<br>Measurement Date for Employer under GAS 68 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Total Pension Liability** | | |
| 1. Service cost[(1)] | $370,409,073 | $352,282,612 |
| 2. Interest | 1,439,660,906 | 1,332,878,299 |
| 3. Change of benefit terms | 0 | 25,173,222 |
| 4. Differences between expected and actual experience | -46,035,243 | 144,224,403 |
| 5. Changes of assumptions or other inputs | 0 | 483,717,164 |
| 6. Benefit payments, including refunds of member contributions | -915,192,651 | -851,884,595 |
| 7. Net change in Total Pension Liability | $848,842,085 | $1,486,391,105 |
| 8. Total Pension Liability – beginning | 19,944,579,058 | 18,458,187,953 |
| 9. Total Pension Liability – ending | $20,793,421,143 | $19,944,579,058 |
| **Plan's Fiduciary Net Position** | | |
| 10. Contributions – employer | $478,716,953 | $450,195,254 |
| 11. Contributions – employee | 237,087,419 | 230,756,920 |
| 12. Net investment income | 799,350,708 | 1,243,817,173 |
| 13. Benefit payments, including refunds of member contributions | -915,192,651 | -851,884,595 |
| 14. Administrative expense | -19,600,116 | -17,698,803 |
| 15. Other | 0 | -471,146[(2)] |
| 16. Net change in Plan's Fiduciary Net Position | $580,362,313 | $1,054,714,803 |
| 17. Plan's Fiduciary Net Position – beginning | 14,235,230,528 | 13,180,515,725 |
| 18. Plan's Fiduciary Net Position – ending | $14,815,592,841 | $14,235,230,528 |
| 19. Net Pension Liability – ending: (9) – (18) | $5,977,828,302 | $5,709,348,530 |
| 20. Plan's Fiduciary Net Position as a percentage of the Total Pension Liability | 71.25% | 71.37% |
| 21. Covered payroll[(3)] | $2,108,171,088 | $2,057,565,478 |
| 22. Plan Net Pension Liability as percentage of covered payroll | 283.56% | 277.48% |

(1) *The service cost is based on the previous year's valuation, meaning the June 30, 2019 and June 30, 2018 measurement date values are based on the valuations as of June 30, 2018 and June 30, 2017, respectively. Both service costs have been calculated using the economic actuarial assumptions shown in the June 30, 2018 measurement date column on page iv as there had been no changes in the economic actuarial assumptions between the June 30, 2017 and June 30, 2018 valuations.*

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

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

**EXHIBIT 6**

**Schedule of Employer Contributions – Last Ten Fiscal Years**

| Year Ended June 30, | Actuarially Determined Contributions | Contributions in Relation to the Actuarially Determined Contributions | Contribution Deficiency/(Excess) | Covered Payroll[1] | Contributions as a Percentage of Covered Payroll |
|---|---|---|---|---|---|
| 2010 | $258,642,795 | $258,642,795 | $0 | $1,827,864,283 | 14.15% |
| 2011 | 303,560,953 | 303,560,953 | 0 | 1,678,059,440 | 18.09% |
| 2012 | 308,539,905 | 308,539,905 | 0 | 1,715,197,133 | 17.99% |
| 2013 | 346,180,852 | 346,180,852 | 0 | 1,736,112,598 | 19.94% |
| 2014 | 357,649,232 | 357,649,232 | 0 | 1,802,931,195 | 19.84% |
| 2015 | 381,140,923 | 381,140,923 | 0 | 1,835,637,409 | 20.76% |
| 2016 | 440,546,011 | 440,546,011 | 0 | 1,876,946,179 | 23.47% |
| 2017 | 453,356,059 | 453,356,059 | 0 | 1,973,048,633 | 22.98% |
| 2018 | 450,195,254 | 450,195,254 | 0 | 2,057,565,478 | 21.88% |
| 2019 | 478,716,953 | 478,716,953 | 0 | 2,108,171,088 | 22.71% |

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

## Notes to Exhibit 6

| | |
|---|---|
| **Methods and assumptions used to establish "actuarially determined contribution" (ADC) rates:** | |
| **Valuation date** | Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported |
| **Actuarial cost method** | Entry Age Cost Method (individual basis) |
| **Amortization method** | Level percent of payroll |
| **Amortization period** | Multiple layers, closed amortization periods. Actuarial gains/losses are amortized over 15 years. Assumption or method changes are amortized over 20 years. Plan changes, including the 2009 ERIP, are amortized over 15 years. Future ERIPs will be amortized over 5 years. Actuarial surplus is amortized over 30 years. The existing layers on June 30, 2012, except those arising from the 2009 ERIP and the two (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. |
| **Actuarial assumptions**: | June 30, 2019 valuation date |
| Investment rate of return | 7.25% |
| Inflation rate | 3.00% |
| Real across the board salary increase | 0.50% |
| Projected salary increases[1] | Ranges from 10.00% to 3.90%, based on years of service |
| Cost of living adjustments | 3.00% for Tier 1; 2.00% for Tier 3 (actual increases are contingent upon CPI increases with a 3.00% maximum for Tier 1 and a 2.00% maximum for Tier 3) |
| Mortality (Post-Retirement) | Healthy: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Tables (separate tables for males and females) projected generationally with the two-dimensional mortality improvement Scale MP-2017. |
| Other assumptions | Same as those used in the June 30, 2019 funding actuarial valuation |

[1] *Includes inflation at 3.00% plus across the board salary increases of 0.50% plus merit and promotion increases.*

## EXHIBIT 7

### Determination of Proportionate Share

**Actual Employer Contributions by Employer Category**
**July 1, 2017 to June 30, 2018**

| Employer Category | Contributions | Percentage[1] |
|---|---|---|
| City | $371,287,189 | 82.473% |
| Airports | 61,920,522 | 13.754% |
| Harbor | 16,987,543 | 3.773% |
| Total for all Employer Categories | $450,195,254 | 100.000% |

[1] The unrounded percentages are used in the allocation of the NPL amongst employer categories.

**Allocation of June 30, 2018 Net Pension Liability**

| Employer Category | NPL | Percentage |
|---|---|---|
| City | $4,708,641,301 | 82.473% |
| Airports | 785,272,253 | 13.754% |
| Harbor | 215,434,976 | 3.773% |
| Total for all Employer Categories | $5,709,348,530 | 100.000% |

**Notes:**

1. Based on the July 1, 2017 through June 30, 2018 employer contributions as provided by LACERS.
2. The Net Pension Liability is the Total Pension Liability minus the Plan's Fiduciary Net Position (plan assets).
3. The NPL is allocated based on the actual contributions from each employer category. The steps used for the allocation are as follows:
   - First calculate the ratio of the contributions from the employer category to the total contributions.
   - Then multiply this ratio by the NPL to determine the employer category's proportionate share of the NPL.

## EXHIBIT 7 (continued)

### Determination of Proportionate Share

**Actual Employer Contributions by Employer Category**
**July 1, 2018 to June 30, 2019**

| Employer Category | Contributions | Percentage[1] |
|---|---|---|
| City | $395,373,858 | 82.591% |
| Airports | 65,667,006 | 13.717% |
| Harbor | 17,676,089 | 3.692% |
| Total for all Employer Categories | $478,716,953 | 100.000% |

[1] The unrounded percentages are used in the allocation of the NPL amongst employer categories.

**Allocation of June 30, 2019 Net Pension Liability**

| Employer Category | NPL | Percentage |
|---|---|---|
| City | $4,937,107,456 | 82.591% |
| Airports | 819,996,210 | 13.717% |
| Harbor | 220,724,636 | 3.692% |
| Total for all Employer Categories | $5,977,828,302 | 100.000% |

**Notes:**

1. Based on the July 1, 2018 through June 30, 2019 employer contributions as provided by LACERS.
2. The Net Pension Liability is the Total Pension Liability minus the Plan's Fiduciary Net Position (plan assets).
3. The NPL is allocated based on the actual contributions from each employer category. The steps used for the allocation are as follows:
   - First calculate the ratio of the contributions from the employer category to the total contributions.
   - Then multiply this ratio by the NPL to determine the employer category's proportionate share of the NPL.

## EXHIBIT 7 (continued)

## Determination of Proportionate Share

**Notes:**

For purposes of the above results, the reporting date for the employer under GAS 68 is June 30, 2020 The reporting date and measurement date for the Plan under GAS 67 are June 30, 2019. Consistent with the provisions of GAS 68, the assets and liabilities measured as of June 30, 2019 are not adjusted or rolled forward to the June 30, 2020 reporting date. Other results, such as the total deferred inflows and outflows would also be allocated based on the same proportionate shares determined above.

The following items are allocated based on the corresponding proportionate share:

1) Net Pension Liability
2) Service cost
3) Interest on the Total Pension Liability
4) Expensed portion of current-period benefit changes
5) Expensed portion of current-period difference between actual and expected experience in the Total Pension Liability
6) Expensed portion of current-period changes of assumptions or other inputs
7) Member contributions
8) Projected earnings on plan investments
9) Expensed portion of current-period differences between projected and actual earnings on plan investments
10) Administrative expense
11) Recognition of beginning of year deferred outflows of resources as pension expense
12) Recognition of beginning of year deferred inflows of resources as pension expense

## EXHIBIT 8

### Pension Expense – Total for all Employer Categories

| **Reporting Date for Employer under GAS 68** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Components of Pension Expense** | | |
| 1. Service cost | $370,409,073 | $352,282,612 |
| 2. Interest on the Total Pension Liability | 1,439,660,906 | 1,332,878,299 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | 0 | 0 |
| 4. Expensed portion of current-period benefit changes | 0 | 25,173,222 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total Pension Liability | -9,262,624 | 27,523,741 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 0 | 92,312,436 |
| 7. Actual member contributions | -237,087,419 | -230,756,920 |
| 8. Projected earnings on plan investments | -1,040,023,249 | -963,674,963 |
| 9. Expensed portion of current-period differences between projected and actual earnings on plan investments | 48,134,508 | -56,028,442 |
| 10. Administrative expense | 19,600,116 | 17,698,803 |
| 11. Other | 0 | 471,146 |
| 12. Recognition of beginning of year deferred outflows of resources as pension expense | 564,037,096 | 497,308,901 |
| 13. Recognition of beginning of year deferred inflows of resources as pension expense | -309,033,715 | -467,521,358 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | 0 | 0 |
| **Pension Expense** | $846,434,692 | $627,667,477 |

## EXHIBIT 8 (continued)

### Pension Expense – City

| Reporting Date for Employer under GAS 68<br>Measurement Date for Employer under GAS 68<br>Components of Pension Expense | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| 1. Service cost | $305,922,035 | $290,536,202 |
| 2. Interest on the Total Pension Liability | 1,189,020,533 | 1,099,257,784 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | 1,258,565 | 487,113 |
| 4. Expensed portion of current-period benefit changes | 0 | 20,760,981 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total Pension Liability | -7,650,031 | 22,699,512 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 0 | 76,132,355 |
| 7. Actual member contributions | -195,811,256 | -190,310,953 |
| 8. Projected earnings on plan investments | -858,958,518 | -794,766,637 |
| 9. Expensed portion of current-period differences between projected and actual earnings on plan investments | 39,754,444 | -46,208,045 |
| 10. Administrative expense | 16,187,799 | 14,596,641 |
| 11. Other | 0 | 388,566 |
| 12. Recognition of beginning of year deferred outflows of resources as pension expense | 465,840,036 | 410,142,982 |
| 13. Recognition of beginning of year deferred inflows of resources as pension expense | -255,231,931 | -385,576,457 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | 7,475,418 | 8,647,295 |
| **Pension Expense** | $707,807,094 | $526,787,339 |

## EXHIBIT 8 (continued)

## Pension Expense – Airports

| Reporting Date for Employer under GAS 68<br>Measurement Date for Employer under GAS 68<br>Components of Pension Expense | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| 1. Service cost | $50,810,097 | $48,453,474 |
| 2. Interest on the Total Pension Liability | 197,482,501 | 183,326,055 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | -393,628 | 526,278 |
| 4. Expensed portion of current-period benefit changes | 0 | 3,462,362 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total Pension Liability | -1,270,581 | 3,785,656 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 0 | 12,696,789 |
| 7. Actual member contributions | -32,521,975 | -31,738,649 |
| 8. Projected earnings on plan investments | -142,663,034 | -132,545,282 |
| 9. Expensed portion of current-period differences between projected and actual earnings on plan investments | 6,602,751 | -7,706,235 |
| 10. Administrative expense | 2,688,605 | 2,434,320 |
| 11. Other | 0 | 64,802 |
| 12. Recognition of beginning of year deferred outflows of resources as pension expense | 77,370,620 | 68,400,603 |
| 13. Recognition of beginning of year deferred inflows of resources as pension expense | -42,391,059 | -64,303,580 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | -3,134,350 | -5,243,766 |
| **Pension Expense** | $112,579,947 | $81,612,827 |

## EXHIBIT 8 (continued)

## Pension Expense – Harbor

| Reporting Date for Employer under GAS 68 | June 30, 2020 | June 30, 2019 |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Components of Pension Expense** | | |
| 1. Service cost | $13,676,941 | $13,292,936 |
| 2. Interest on the Total Pension Liability | 53,157,872 | 50,294,460 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | -864,937 | -1,013,391 |
| 4. Expensed portion of current-period benefit changes | 0 | 949,879 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total Pension Liability | -342,012 | 1,038,573 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 0 | 3,483,292 |
| 7. Actual member contributions | -8,754,188 | -8,707,318 |
| 8. Projected earnings on plan investments | -38,401,697 | -36,363,044 |
| 9. Expensed portion of current-period differences between projected and actual earnings on plan investments | 1,777,313 | -2,114,162 |
| 10. Administrative expense | 723,712 | 667,842 |
| 11. Other | 0 | 17,778 |
| 12. Recognition of beginning of year deferred outflows of resources as pension expense | 20,826,440 | 18,765,316 |
| 13. Recognition of beginning of year deferred inflows of resources as pension expense | -11,410,725 | -17,641,321 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | -4,341,068 | -3,403,529 |
| **Pension Expense** | $26,047,651 | $19,267,311 |

## EXHIBIT 9

### Deferred Outflows of Resources and Deferred Inflows of Resources – Total for all Employer Categories

| Reporting Date for Employer under GAS 68 | June 30, 2020 | June 30, 2019 |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $16,730,873 | $22,180,649 |
| 2. Changes of assumptions or other inputs | 442,101,522 | 686,966,699 |
| 3. Net excess of projected over actual earnings on pension plan investments (if any) | N/A | N/A |
| 4. Differences between actual and expected experience in the Total Pension Liability | 89,176,921 | 116,700,662 |
| 5. Total deferred outflows of resources | $548,009,316 | $825,848,010 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $16,730,873 | $22,180,649 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on pension plan investments (if any) | 49,339,029 | 130,607,120 |
| 9. Differences between expected and actual experience in the Total Pension Liability | 179,961,637 | 271,844,497 |
| 10. Total deferred inflows of resources | $246,031,539 | $424,632,266 |

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

| Reporting Date for Employer under GAS 68, Year Ended June 30: | | |
|---|---|---|
| 2020 | N/A | $255,003,381 |
| 2021 | $122,877,112 | 84,005,228 |
| 2022 | 2,123,476 | -36,748,408 |
| 2023 | 109,066,745 | 70,194,861 |
| 2024 | 67,910,444 | 28,760,682 |
| 2025 | 0 | 0 |
| Thereafter | 0 | 0 |

[1] *Calculated in accordance with Paragraphs 54 and 55 of GAS 68.*

## EXHIBIT 9

### Deferred Outflows of Resources and Deferred Inflows of Resources – City

| Reporting Date for Employer under GAS 68 | June 30, 2020 | June 30, 2019 |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $14,379,350 | $17,763,839 |
| 2. Changes of assumptions or other inputs | 365,133,057 | 566,558,471 |
| 3. Net excess of projected over actual earnings on pension plan investments (if any) | N/A | N/A |
| 4. Differences between actual and expected experience in the Total Pension Liability | 73,651,504 | 96,245,930 |
| 5. Total deferred outflows of resources | $453,163,911 | $680,568,240 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $380,339 | $1,285,910 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on pension plan investments (if any) | 40,749,261 | 107,714,930 |
| 9. Differences between expected and actual experience in the Total Pension Liability | 148,630,889 | 224,196,897 |
| 10. Total deferred inflows of resources | $189,760,489 | $333,197,737 |

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

| Reporting Date for Employer under GAS 68, Year Ended June 30: | | |
|---|---|---|
| 2020 | N/A | $217,783,029 |
| 2021 | $108,037,045 | 74,575,076 |
| 2022 | 5,866,051 | -27,453,624 |
| 2023 | 92,075,156 | 58,629,462 |
| 2024 | 57,425,170 | 23,836,560 |
| 2025 | 0 | 0 |
| Thereafter | 0 | 0 |

[1] *Calculated in accordance with Paragraphs 54 and 55 of GAS 68.*

## EXHIBIT 9

## Deferred Outflows of Resources and Deferred Inflows of Resources – Airports

| Reporting Date for Employer under GAS 68 | June 30, 2020 | June 30, 2019 |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[(1)] | $2,351,523 | $4,416,810 |
| 2. Changes of assumptions or other inputs | 60,644,360 | 94,486,417 |
| 3. Net excess of projected over actual earnings on pension plan investments (if any) | N/A | N/A |
| 4. Differences between actual and expected experience in the Total Pension Liability | 12,232,659 | 16,051,182 |
| 5. Total deferred outflows of resources | $75,228,542 | $114,954,409 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[(1)] | $5,607,931 | $9,244,866 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on pension plan investments (if any) | 6,767,979 | 17,963,897 |
| 9. Differences between expected and actual experience in the Total Pension Liability | 24,685,865 | 37,389,895 |
| 10. Total deferred inflows of resources | $37,061,775 | $64,598,658 |

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

| Reporting Date for Employer under GAS 68, Year Ended June 30: | | |
|---|---|---|
| 2020 | N/A | $31,939,193 |
| 2021 | $15,017,825 | 10,110,243 |
| 2022 | -858,322 | -5,810,407 |
| 2023 | 14,947,303 | 10,034,631 |
| 2024 | 9,059,961 | 4,082,091 |
| 2025 | 0 | 0 |
| Thereafter | 0 | 0 |

[(1)] *Calculated in accordance with Paragraphs 54 and 55 of GAS 68.*

## EXHIBIT 9

## Deferred Outflows of Resources and Deferred Inflows of Resources – Harbor

| **Reporting Date for Employer under GAS 68** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $0 | $0 |
| 2. Changes of assumptions or other inputs | 16,324,105 | 25,921,811 |
| 3. Net excess of projected over actual earnings on pension plan investments (if any) | N/A | N/A |
| 4. Differences between actual and expected experience in the Total Pension Liability | 3,292,758 | 4,403,550 |
| 5. Total deferred outflows of resources | $19,616,863 | $30,325,361 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $10,742,603 | $11,649,873 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on pension plan investments (if any) | 1,821,789 | 4,928,293 |
| 9. Differences between expected and actual experience in the Total Pension Liability | 6,644,883 | 10,257,705 |
| 10. Total deferred inflows of resources | $19,209,275 | $26,835,871 |

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

| **Reporting Date for Employer under GAS 68, Year Ended June 30:** | | |
|---|---|---|
| 2020 | N/A | $5,281,159 |
| 2021 | -$177,758 | -680,091 |
| 2022 | -2,884,253 | -3,484,377 |
| 2023 | 2,044,286 | 1,530,768 |
| 2024 | 1,425,313 | 842,031 |
| 2025 | 0 | 0 |
| Thereafter | 0 | 0 |

[1] *Calculated in accordance with Paragraphs 54 and 55 of GAS 68.*

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources**

There are changes in each employer category's proportionate share of the total Net Pension Liability during the measurement period ended June 30, 2019. The net effect of the change on the employer category's proportionate share of the collective Net Pension Liability and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through LACERS which is 4.97 years determined as of June 30, 2018 (the beginning of the measurement period ending June 30, 2019).

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2019 is recognized over the same period.

The average of the expected service lives of all employees is determined by:

- Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

## EXHIBIT 10

### Schedule of Proportionate Share of the Net Pension Liability – Total for all Employer Categories

| Reporting Date for Employer under GAS 68 as of June 30 | Proportion of the Net Pension Liability | Proportionate share of Net Pension Liability | Covered payroll[1] | Proportionate share of the Net Pension Liability as a percentage of its covered payroll | Plan's Fiduciary Net Position as a percentage of the Total Pension Liability |
|---|---|---|---|---|---|
| 2014 | 100.000% | $4,727,177,064 | $1,736,112,598 | 272.29% | 68.23% |
| 2015 | 100.000% | 4,457,773,626 | 1,802,931,195 | 247.25% | 72.57% |
| 2016 | 100.000% | 4,989,426,361 | 1,835,637,409 | 271.81% | 70.49% |
| 2017 | 100.000% | 5,615,666,914 | 1,876,946,179 | 299.19% | 67.77% |
| 2018 | 100.000% | 5,277,672,228 | 1,973,048,633 | 267.49% | 71.41% |
| 2019 | 100.000% | 5,709,348,530 | 2,057,565,478 | 277.48% | 71.37% |
| 2020 | 100.000% | 5,977,828,302 | 2,108,171,088 | 283.56% | 71.25% |

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

## EXHIBIT 10 (continued)

### Schedule of Proportionate Share of the Net Pension Liability – City

| Reporting Date for Employer under GAS 68 as of June 30 | Proportion of the Net Pension Liability | Proportionate share of Net Pension Liability | Covered payroll[1] | Proportionate share of the Net Pension Liability as a percentage of its covered payroll | Plan's Fiduciary Net Position as a percentage of the Total Pension Liability |
|---|---|---|---|---|---|
| 2014 | 81.453% | $3,850,425,590 | $1,414,115,080 | 272.29% | 68.23% |
| 2015 | 81.972% | 3,654,125,793 | 1,477,663,755 | 247.29% | 72.57% |
| 2016 | 81.869% | 4,084,786,762 | 1,504,659,940 | 271.48% | 70.49% |
| 2017 | 82.271% | 4,620,035,451 | 1,540,925,299 | 299.82% | 67.77% |
| 2018 | 82.423% | 4,350,001,537 | 1,625,808,930 | 267.56% | 71.41% |
| 2019 | 82.473% | 4,708,641,301 | 1,701,304,099 | 276.77% | 71.37% |
| 2020 | 82.591% | 4,937,107,456 | 1,749,621,444 | 282.18% | 71.25% |

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

## EXHIBIT 10 (continued)

### Schedule of Proportionate Share of the Net Pension Liability – Airports

| Reporting Date for Employer under GAS 68 as of June 30 | Proportion of the Net Pension Liability | Proportionate share of Net Pension Liability | Covered payroll[1] | Proportionate share of the Net Pension Liability as a percentage of its covered payroll | Plan's Fiduciary Net Position as a percentage of the Total Pension Liability |
|---|---|---|---|---|---|
| 2014 | 14.299% | $675,950,764 | $248,251,046 | 272.29% | 68.23% |
| 2015 | 13.804% | 615,348,678 | 249,227,877 | 246.90% | 72.57% |
| 2016 | 13.979% | 697,482,231 | 255,014,220 | 273.51% | 70.49% |
| 2017 | 13.789% | 774,356,211 | 260,929,145 | 296.77% | 67.77% |
| 2018 | 13.700% | 723,062,142 | 271,035,342 | 266.78% | 71.41% |
| 2019 | 13.754% | 785,272,253 | 278,681,843 | 281.78% | 71.37% |
| 2020 | 13.717% | 819,996,210 | 280,595,646 | 292.23% | 71.25% |

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

## EXHIBIT 10 (continued)

### Schedule of Proportionate Share of the Net Pension Liability – Harbor

| Reporting Date for Employer under GAS 68 as of June 30 | Proportion of the Net Pension Liability | Proportionate share of Net Pension Liability | Covered payroll[1] | Proportionate share of the Net Pension Liability as a percentage of its covered payroll | Plan's Fiduciary Net Position as a percentage of the Total Pension Liability |
|---|---|---|---|---|---|
| 2014 | 4.248% | $200,800,710 | $73,746,472 | 272.29% | 68.23% |
| 2015 | 4.224% | 188,299,155 | 76,039,563 | 247.63% | 72.57% |
| 2016 | 4.152% | 207,157,368 | 75,963,249 | 272.71% | 70.49% |
| 2017 | 3.940% | 221,275,252 | 75,091,735 | 294.67% | 67.77% |
| 2018 | 3.877% | 204,608,549 | 76,204,361 | 268.50% | 71.41% |
| 2019 | 3.773% | 215,434,976 | 77,579,536 | 277.70% | 71.37% |
| 2020 | 3.692% | 220,724,636 | 77,953,998 | 283.15% | 71.25% |

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

## EXHIBIT 11

## Schedule of Reconciliation of Net Pension Liability – Total for all Employer Categories

| **Reporting Date for Employer under GAS 68** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Reconciliation of Net Pension Liability** | | |
| 1. Beginning Net Pension Liability | $5,709,348,530 | $5,277,672,228 |
| 2. Pension Expense | 846,434,692 | 627,667,477 |
| 3. Employer Contributions | -478,716,953 | -450,195,254 |
| 4. New Net Deferred Inflows/Outflows | 155,765,414 | 283,991,622 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | 0 | 0 |
| 6. New Net Deferred Flows Due to Change in Proportion | 0 | 0 |
| 7. Recognition of Prior Deferred Inflows/Outflows | -255,003,381 | -29,787,543 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | 0 | 0 |
| 9. Ending Net Pension Liability | $5,977,828,302 | $5,709,348,530 |

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability – City**

| **Reporting Date for Employer under GAS 68**<br>**Measurement Date for Employer under GAS 68**<br>**Reconciliation of Net Pension Liability** | **June 30, 2020**<br>**June 30, 2019** | **June 30, 2019**<br>**June 30, 2018** |
|---|---|---|
| 1. Beginning Net Pension Liability | $4,708,641,301 | $4,350,001,537 |
| 2. Pension Expense | 707,807,094 | 526,787,339 |
| 3. Employer Contributions | -395,373,858 | -371,287,189 |
| 4. New Net Deferred Inflows/Outflows | 128,647,151 | 234,214,933 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | 472,791 | 73,138 |
| 6. New Net Deferred Flows Due to Change in Proportion | 4,996,500 | 2,065,363 |
| 7. Recognition of Prior Deferred Inflows/Outflows | -210,608,105 | -24,566,525 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | -7,475,418 | -8,647,295 |
| 9. Ending Net Pension Liability | $4,937,107,456 | $4,708,641,301 |

## EXHIBIT 11 (continued)

### Schedule of Reconciliation of Net Pension Liability – Airports

| **Reporting Date for Employer under GAS 68** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Reconciliation of Net Pension Liability** | | |
| 1. Beginning Net Pension Liability | $785,272,253 | $723,062,142 |
| 2. Pension Expense | 112,579,947 | 81,612,827 |
| 3. Employer Contributions | -65,667,006 | -61,920,522 |
| 4. New Net Deferred Inflows/Outflows | 21,366,799 | 39,060,628 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | -147,870 | 79,018 |
| 6. New Net Deferred Flows Due to Change in Proportion | -1,562,702 | 2,231,417 |
| 7. Recognition of Prior Deferred Inflows/Outflows | -34,979,561 | -4,097,023 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | 3,134,350 | 5,243,766 |
| 9. Ending Net Pension Liability | $819,996,210 | $785,272,253 |

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability – Harbor**

| **Reporting Date for Employer under GAS 68** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 68** | **June 30, 2019** | **June 30, 2018** |
| **Reconciliation of Net Pension Liability** | | |
| 1. Beginning Net Pension Liability | $215,434,976 | $204,608,549 |
| 2. Pension Expense | 26,047,651 | 19,267,311 |
| 3. Employer Contributions | -17,676,089 | -16,987,543 |
| 4. New Net Deferred Inflows/Outflows | 5,751,464 | 10,716,061 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | -324,921 | -152,156 |
| 6. New Net Deferred Flows Due to Change in Proportion | -3,433,798 | -4,296,780 |
| 7. Recognition of Prior Deferred Inflows/Outflows | -9,415,715 | -1,123,995 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | 4,341,068 | 3,403,529 |
| 9. Ending Net Pension Liability | $220,724,636 | $215,434,976 |

## EXHIBIT 12

### Schedule of Recognition of Changes in Total Net Pension Liability

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Actual and Expected Experience on Total Pension Liability**

| Reporting Date for Employer under GAS 68, Year Ended June 30 | Differences between Actual and Expected Experience | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|---|
| 2015 | -$161,871,265 | 5.62 | -$28,802,716 | -$17,857,685 | $0 | $0 | $0 | $0 | $0 | $0 |
| 2016 | -135,821,076 | 5.42 | -25,059,239 | -25,059,239 | -10,524,881 | 0 | 0 | 0 | 0 | 0 |
| 2017 | -300,812,751 | 5.24 | -57,407,014 | -57,407,014 | -57,407,014 | -13,777,681 | 0 | 0 | 0 | 0 |
| 2018 | -146,474,065 | 5.17 | -28,331,541 | -28,331,541 | -28,331,541 | -28,331,541 | -4,816,360 | 0 | 0 | 0 |
| 2019 | 144,224,403 | 5.24 | 27,523,741 | 27,523,741 | 27,523,741 | 27,523,741 | 27,523,741 | 6,605,698 | 0 | 0 |
| 2020 | -46,035,243 | 4.97 | N/A | -9,262,624 | -9,262,624 | -9,262,624 | -9,262,624 | -8,984,747 | 0 | 0 |
| Net increase (decrease) in pension expense | | | -$112,076,769 | -$110,394,362 | -$78,002,319 | -$23,848,105 | $13,444,757 | -$2,379,049 | $0 | $0 |

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Assumption Changes**

| Reporting Date for Employer under GAS 68, Year Ended June 30 | Effects of Assumption Changes | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|---|
| 2015 | $785,439,114 | 5.62 | $139,757,849 | $86,649,869 | $0 | $0 | $0 | $0 | $0 | $0 |
| 2016 | 0 | 5.42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 0 | 5.24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 340,717,846 | 5.17 | 65,902,872 | 65,902,872 | 65,902,872 | 65,902,872 | 11,203,486 | 0 | 0 | 0 |
| 2019 | 483,717,164 | 5.24 | 92,312,436 | 92,312,436 | 92,312,436 | 92,312,436 | 92,312,436 | 22,154,984 | 0 | 0 |
| 2020 | 0 | 4.97 | N/A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net increase (decrease) in pension expense | | | $297,973,157 | $244,865,177 | $158,215,308 | $158,215,308 | $103,515,922 | $22,154,985 | $0 | $0 |

As described in Exhibit 9, the average of the expected remaining service lives of all employees that are provided with pensions through LACERS (active and inactive employees) determined as of June 30, 2018 (the beginning of the measurement period ending June 30, 2019) is 4.97 years.

## EXHIBIT 12 (continued)

### Schedule of Recognition of Changes in Total Net Pension Liability

**Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Pension Plan Investments**

| Reporting Date for Employer under GAS 68, Year Ended June 30 | Differences between Projected and Actual Earnings | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|---|
| 2015 | -$1,017,855,266 | 5.00 | -$203,571,054 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| 2016 | 583,701,643 | 5.00 | 116,740,329 | 116,740,327 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 874,539,255 | 5.00 | 174,907,851 | 174,907,851 | 174,907,851 | 0 | 0 | 0 | 0 | 0 |
| 2018 | -621,748,969 | 5.00 | -124,349,794 | -124,349,794 | -124,349,794 | -124,349,793 | 0 | 0 | 0 | 0 |
| 2019 | -280,142,210 | 5.00 | -56,028,442 | -56,028,442 | -56,028,442 | -56,028,442 | -56,028,442 | 0 | 0 | 0 |
| 2020 | 240,672,541 | 5.00 | N/A | 48,134,508 | 48,134,508 | 48,134,508 | 48,134,508 | 48,134,509 | 0 | 0 |
| Net increase (decrease) in pension expense | | | -$92,301,110 | $159,404,450 | $42,664,123 | -$132,243,727 | -$7,893,934 | $48,134,509 | $0 | $0 |

The differences between projected and actual earnings on pension plan investments are recognized over a five-year period per Paragraph 33b of GASB 68.

**Increase (Decrease) in Pension Expense**

| Reporting Date for Employer under GAS 68, Year Ended June 30 | Total Differences and Changes | Reporting Date for Employer under GAS 68, Year Ended June 30: 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| 2015 | -$394,287,417 | -$92,615,921 | $68,792,184 | $0 | $0 | $0 | $0 | $0 | $0 |
| 2016 | 447,880,567 | 91,681,090 | 91,681,088 | -10,524,881 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 573,726,504 | 117,500,837 | 117,500,837 | 117,500,837 | -13,777,681 | 0 | 0 | 0 | 0 |
| 2018 | -427,505,188 | -86,778,463 | -86,778,463 | -86,778,463 | -86,778,462 | 6,387,126 | 0 | 0 | 0 |
| 2019 | 347,799,357 | 63,807,735 | 63,807,735 | 63,807,735 | 63,807,735 | 63,807,735 | 28,760,682 | 0 | 0 |
| 2020 | 194,637,298 | N/A | 38,871,884 | 38,871,884 | 38,871,884 | 38,871,884 | 39,149,762 | 0 | 0 |
| Net increase (decrease) in pension expense | | $93,595,278 | $293,875,265 | $122,877,112 | $2,123,476 | $109,066,745 | $67,910,444 | $0 | $0 |

Amortization amounts prior to June 30, 2019 have been omitted from this exhibit. These amounts can be found in prior years' GAS 68 reports.

## EXHIBIT 13

### Allocation of Changes in Total Net Pension Liability

In addition to the amounts shown in Exhibit 12, there are changes in each employer's proportionate share of the total Net Pension Liability during the measurement period ending on June 30, 2019. The net effect of the change on the employer's proportionate share of the collective Net Pension Liability and collective deferred outflows of resources and deferred inflows of resources is also recognized over the average of the expected remaining service lives of all employees shown above. The difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ending on June 30, 2019 is recognized over the same periods. These amounts are shown below. While these amounts are different for each employer, they sum to zero over the entire LACERS.

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Date for Employer under GAS 68, Year Ended June 30, 2020**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| City | $6,255,065 | 4.97 | $1,258,565 | $1,258,565 | $1,258,565 | $1,258,565 | $1,220,805 | $0 | $0 |
| Airports | -1,956,330 | 4.97 | -393,628 | -393,628 | -393,628 | -393,628 | -381,818 | 0 | 0 |
| Harbor | -4,298,735 | 4.97 | -864,937 | -864,937 | -864,937 | -864,937 | -838,987 | 0 | 0 |
| Total for all Employer Categories | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

**EXHIBIT 13 (continued)**

**Allocation of Changes in Total Net Pension Liability**

The corresponding amounts for the measurement period ending on June 30, 2018 are shown below:

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Date for Employer under GAS 68, Year Ended June 30, 2019**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| City | $2,552,476 | 5.24 | $487,113 | $487,113 | $487,113 | $487,113 | $487,113 | $116,911 | $0 |
| Airports | 2,757,695 | 5.24 | 526,278 | 526,278 | 526,278 | 526,278 | 526,278 | 126,305 | 0 |
| Harbor | -5,310,171 | 5.24 | -1,013,391 | -1,013,391 | -1,013,391 | -1,013,391 | -1,013,391 | -243,216 | 0 |
| Total for all Employer Categories | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## EXHIBIT 13 (continued)

### Allocation of Changes in Total Net Pension Liability

The corresponding amounts for the measurement period ending on June 30, 2017 are shown below:

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Date for Employer under GAS 68, Year Ended June 30, 2018**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| City | $7,630,406 | 5.17 | $1,475,900 | $1,475,900 | $1,475,900 | $1,475,900 | $1,475,900 | $250,906 | $0 |
| Airports | -4,450,747 | 5.17 | -860,879 | -860,879 | -860,879 | -860,879 | -860,879 | -146,352 | 0 |
| Harbor | -3,179,659 | 5.17 | -615,021 | -615,021 | -615,021 | -615,021 | -615,021 | -104,554 | 0 |
| Total for all Employer Categories | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

**EXHIBIT 13 (continued)**

**Allocation of Changes in Total Net Pension Liability**

The corresponding amounts for the measurement period ending on June 30, 2016 are shown below:

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Date for Employer under GAS 68, Year Ended June 30, 2017**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| City | $19,446,722 | 5.24 | $3,711,207 | $3,711,207 | $3,711,207 | $3,711,207 | $3,711,207 | $890,687 | $0 |
| Airports | -9,200,091 | 5.24 | -1,755,743 | -1,755,743 | -1,755,743 | -1,755,743 | -1,755,743 | -421,376 | 0 |
| Harbor | -10,246,631 | 5.24 | -1,955,464 | -1,955,464 | -1,955,464 | -1,955,464 | -1,955,464 | -469,311 | 0 |
| Total for all Employer Categories | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

**EXHIBIT 13 (continued)**

**Allocation of Changes in Total Net Pension Liability**

The corresponding amounts for the measurement period ending on June 30, 2015 are shown below:

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Date for Employer under GAS 68, Year Ended June 30, 2016**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| City | -$4,908,194 | 5.42 | -$905,571 | -$905,571 | -$905,571 | -$905,571 | -$905,571 | -$380,339 | $0 |
| Airports | 8,341,429 | 5.42 | 1,539,009 | 1,539,009 | 1,539,009 | 1,539,009 | 1,539,009 | 646,384 | 0 |
| Harbor | -3,433,235 | 5.42 | -633,438 | -633,438 | -633,438 | -633,438 | -633,438 | -266,045 | 0 |
| Total for all Employer Categories | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

**EXHIBIT 13 (continued)**

**Allocation of Changes in Total Net Pension Liability**

The corresponding amounts for the measurement period ending on June 30, 2014 are shown below:

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Date for Employer under GAS 68, Year Ended June 30, 2015**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 68, Year Ended June 30: 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Thereafter |
|---|---|---|---|---|---|---|---|---|---|
| City | $24,535,564 | 5.62 | $4,365,759 | $4,365,759 | $4,365,759 | $4,365,759 | $4,365,759 | $2,706,769 | $0 |
| Airports | -23,413,780 | 5.62 | -4,166,153 | -4,166,153 | -4,166,153 | -4,166,153 | -4,166,153 | -2,583,015 | 0 |
| Harbor | -1,121,784 | 5.62 | -199,606 | -199,606 | -199,606 | -199,606 | -199,606 | -123,754 | 0 |
| Total for all Employer Categories | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## Actuarial Assumptions and Methods

### For June 30, 2019 Measurement Date and Employer Reporting as of June 30, 2020

| | |
|---|---|
| **Rationale for Assumptions:** | The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2014 through June 30, 2017 Actuarial Experience Study dated June 29, 2018 and the June 30, 2017 Review of Economic Actuarial Assumptions dated June 30, 2017 (which was subsequently updated by our supplemental information letter dated August 10, 2017). Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 3 members. These assumptions were adopted by the Board. |
| **Economic Assumptions:** | |
| **Net Investment Return:** | 7.25%, net of investment expenses |
| **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:** Inflation: 3.00%; plus additional 0.50% "across the board" salary increases (other than inflation); plus the following merit and promotion increases:

| Service | Percentage Increase |
|---|---|
| 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% |

**Demographic Assumptions:**

**Post-Retirement Mortality Rates:**

*Healthy Members and All Beneficiaries:* Headcount-Weighted RP-2014 Healthy Annuitant Mortality Tables (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.

*Disabled Members:* Headcount-Weighted RP-2014 Disabled Retiree Mortality Tables (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.

The RP-2014 mortality tables and adjustments as shown above reflect the morality 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) times 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.

**Disability Incidence:**

| | 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 |

**Disability Incidence: (continued)**

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:**

| Termination (< 5 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 |

| Termination (5+ 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).

**Retirement Rates:**

| | Rate (%) | | | | | |
|---|---|---|---|---|---|---|
| | 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.*

| | |
|---|---|
| **Retirement Age and Benefit for Inactive Vested Participants:** | Pension benefit paid at the later of age 59 or the current attained age. For reciprocals, 3.90% compensation increases per annum. |
| **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:** | 76% of male participants; 50% of female participants. |
| **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 Methods:**

| | |
|---|---|
| **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 determined under the Entry Age cost method and 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. |

**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.

**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 earnings rate. The contribution rate is expressed 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 earnings 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 3.50% (i.e., 3.00% inflation plus 0.50% across-the-board salary increase).

The amortization policy is described above.

**Expected Remaining Service Lives:** The average of the expected service lives of all employees is determined by:

- Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

## APPENDIX A

### Calculation of Discount Rate of 7.25% as of June 30, 2019
### Projection of Pension Plan's Fiduciary Net Position ($ in millions)

| Year Beginning July 1, | Projected Beginning Plan Fiduciary Net Position (a) | Projected Total Contributions (b) | Projected Benefit Payments (c) | Projected Administrative Expenses (d) | Projected Investment Earnings (e) | Projected Ending Plan Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e) |
|---|---|---|---|---|---|---|
| 2018 | $14,235 | $716 | $915 | $20 | $799 | $14,816 |
| 2019 | 14,816 | 771 | 1,075 | 20 | 1,058 | 15,549 |
| 2020 | 15,549 | 773 | 1,099 | 21 | 1,110 | 16,312 |
| 2021 | 16,312 | 777 | 1,161 | 22 | 1,163 | 17,068 |
| 2022 | 17,068 | 783 | 1,224 | 24 | 1,216 | 17,819 |
| 2023 | 17,819 | 788 | 1,288 | 25 | 1,268 | 18,562 |
| 2024 | 18,562 | 749 | 1,350 | 26 | 1,317 | 19,253 |
| 2025 | 19,253 | 759 | 1,415 | 27 | 1,365 | 19,935 |
| 2026 | 19,935 | 766 | 1,481 | 27 | 1,412 | 20,605 |
| 2045 | 27,789 | 124 * | 2,441 | 38 | 1,919 | 27,353 |
| 2046 | 27,353 | 118 * | 2,452 | 38 | 1,887 | 26,869 |
| 2047 | 26,869 | 112 * | 2,461 | 37 | 1,851 | 26,334 |
| 2048 | 26,334 | 105 * | 2,468 | 36 | 1,812 | 25,747 |
| 2049 | 25,747 | 99 * | 2,474 | 35 | 1,769 | 25,105 |
| 2082 | 2,656 | 17 * | 524 | 4 | 172 | 2,318 |
| 2083 | 2,318 | 16 * | 471 | 3 | 149 | 2,009 |
| 2084 | 2,009 | 14 * | 420 | 3 | 129 | 1,729 |
| 2085 | 1,729 | 13 * | 373 | 2 | 111 | 1,477 |
| 2086 | 1,477 | 12 * | 329 | 2 | 94 | 1,252 |
| 2102 | 29 | 1 * | 11 | 0 | 2 | 21 |
| 2103 | 21 | 1 * | 8 | 0 | 1 | 15 |
| 2104 | 15 | 1 * | 6 | 0 | 1 | 11 |
| 2105 | 11 | 1 * | 4 | 0 | 1 | 8 |
| 2106 | 8 | 0 *,** | 3 | 0 | 0 | 6 |
| 2107 | 6 | 0 *,** | 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 |

* 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.

## APPENDIX A (continued)

### Calculation of Discount Rate of 7.25% as of June 30, 2019
### Projection of Pension Plan's Fiduciary Net Position ($ in millions)

Notes:

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

(2) Amounts shown for the year beginning July 1, 2018 row are actual amounts, based on the unaudited financial statements provided by LACERS.

(3) Years 2027-2044, 2050-2081, and 2087-2101 have been omitted from this table.

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

(5) Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2019); plus employer contributions to the unfunded actuarial accrued liability; plus contributions to fund each year's annual administrative expenses reflecting a 15-year amortization schedule. Contributions are assumed to occur halfway through the year, on average.

(6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GAS Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2019. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2019 funding valuation report. Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 31.b.(1)(e) of GASB Statement No. 67, the long-term expected rate of return on Plan investments of 7.25% was applied to all periods of projected benefit payments to determine the discount rate.

(7) Column (d): Projected administrative expenses are calculated as approximately 0.14% of the projected beginning Plan Fiduciary Net Position amount. The 0.14% portion was based on the actual fiscal year 2018 - 2019 administrative expenses as a percentage of the beginning Plan Fiduciary Net Position amount as of July 1, 2018. Administrative expenses are assumed to occur halfway through the year, on average.

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

(9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected 'cross-over date' when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.25% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2019 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

## APPENDIX B

### Glossary of Terms

Definitions of certain terms *as they are used in Statement 68;*[4] the terms may have different meanings in other contexts.

**Active employees**
Individuals employed at the end of the reporting or measurement period, as applicable.

**Actual contributions**
Cash contributions recognized as additions to a pension plan's fiduciary net position.

**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.

**Agent employer**
An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.

---

[4] *The definition for covered payroll is provided in GASB Statement No. 82 (which is an amendment of GASB Statements No. 67 and No. 68).*

## APPENDIX B (continued)

## Glossary of Terms

**Agent multiple-employer defined benefit pension plan (agent pension plan)**
A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.

**Allocated insurance contract**
A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.

**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).

**Closed period**
A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.

**Collective deferred outflows of resources and deferred inflows of resources related to pensions**
Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective net pension liability.

**Collective net pension liability**
The net pension liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.

**Collective pension expense**
Pension expense arising from certain changes in the collective net pension liability.

**APPENDIX B (continued)**

**Glossary of Terms**

**Contributions**
Additions to a pension plan's fiduciary net position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.

**Cost-of-living adjustments**
Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

**Cost-sharing employer**
An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.

**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**
The payroll on which contributions to a pension plan are based.

**Deferred retirement option program (DROP)**
A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.

**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 68.)

## APPENDIX B (continued)

## Glossary of Terms

**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 68) 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.

**Measurement period**
The period between the prior and the current measurement dates.

APPENDIX B (continued)

Glossary of Terms

**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**
The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit pension plan.

**Nonemployer contributing entities**
Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement 68, employees are not considered nonemployer-contributing entities.

**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.

**APPENDIX B (continued)**

**Glossary of Terms**

**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**
An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.

**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.

**Special funding situations**
Circumstances in which a nonemployer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists:

1. The amount of contributions for which the nonemployer entity legally is responsible is *not* dependent upon one or more events or circumstances unrelated to the pensions.
2. The nonemployer entity is the only entity with a legal obligation to make contributions directly to a pension plan.

**APPENDIX B (continued)**

**Glossary of Terms**

**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**
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 68.

5626512v3/05806.008

**BOARD** Meeting: 10/27/20
Item IX – B
Attachment 2

# Los Angeles City Employees' Retirement System (LACERS)

Governmental Accounting Standards (GAS) 75
Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) Based on June 30, 2019 Measurement Date for Employer Reporting as of June 30, 2020

This report has been prepared at the request of the Board of Administration to assist the sponsors of the Fund in preparing their financial report for their liabilities associated with the retiree health plan. 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

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segalco.com

*July 16, 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) 75 Actuarial Valuation based on a June 30, 2019 measurement date for employer reporting as of June 30, 2020. It contains various information that will need to be disclosed in order for the three employer categories in LACERS (i.e., the City, Airports, and Harbor) to comply with GAS 75.*

*This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the sponsors in preparing their financial report for their liabilities associated with the LACERS OPEB plan. The census and financial information on which our calculations were based was provided 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 LACERS.*

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

*Sincerely,*

*Segal*

*By:*

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

*JAC/jl*

## SECTION 1

### VALUATION SUMMARY



## SECTION 2

### GAS 75 INFORMATION



## SECTION 2 (CONTINUED)



## SECTION 3

### ACTUARIAL ASSUMPTIONS AND METHODS



Segal

## Purpose

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards (GAS) 75 for employer reporting as of June 30, 2020. The results used in preparing this GAS 75 report are comparable to those used in preparing the Governmental Accounting Standards (GAS) 74 report for the Plan based on a measurement date and a reporting date as of June 30, 2019. 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, retired members and surviving spouses as of June 30, 2019, provided by LACERS;
- The assets of the Plan as of June 30, 2019, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2019 valuation; and
- Other (health and non-health) actuarial assumptions, regarding employee terminations, retirement, death, and healthcare trend and enrollment, etc. adopted by the Board for the June 30, 2019 valuation.

## General Observations on GAS 75 Actuarial Valuation

The following points should be considered when reviewing this GAS 75 report:

- The Government Accounting Standards Board (GASB) rules only define OPEB liability and expense for financial reporting purposes, and do not apply to contribution amounts for OPEB funding purposes. Employers and plans still develop and adopt funding policies under current practices.
- When measuring OPEB liability, GASB uses the same actuarial cost method (Entry Age) and, for benefits that are being fully funded on an actuarial basis, the same type of discount rate (expected return on assets) as LACERS uses 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 LACERS' Actuarial Accrued Liability (AAL) measure for funding. We note that the same is true for the Normal Cost component of the annual plan cost for funding and financial reporting.
- The Net 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.

- For this report, the reporting dates for the employer are June 30, 2020 and 2019. The NOL was measured as of June 30, 2019 and 2018, and determined based upon the results of the actuarial valuations as of June 30, 2019 and 2018, respectively. The Plan's Fiduciary Net Position (plan assets) and the TOL were valued as of the measurement dates. Consistent with the provisions of GAS 75, the assets and liabilities measured as of June 30, 2019 and 2018 were not adjusted or rolled forward to the June 30, 2020 and 2019 reporting dates, respectively.

**Significant Issues in Valuation Year**

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

- The NOL has decreased from $580.5 million as of June 30, 2018 to $522.2 million as of June 30, 2019. The main reason for the decrease in NOL was favorable premium renewal experience, offset to some degree by: (i) updated trend for projecting Medicare Part B premiums after 2019/2020, (ii) investment loss (on market value basis), and (iii) miscellaneous demographic and other losses.[1] Changes in these values during the last two fiscal years ending June 30, 2018 and June 30, 2019 can be found in Exhibit 5.

- The discount rate used in the valuation for financial disclosure purposes as of June 30, 2019 is the assumed investment return on Plan assets (e.g. 7.25% for the June 30, 2019 funding valuation). As contributions that are required to be made by the City to amortize the OPEB 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 75, are expected to be sufficient to make all benefit payments to current members. Various information that is required to be disclosed can be found throughout Exhibits 1 through 13 in Section 2.

- The NOLs for the three employer categories in LACERS (i.e., the City, Airports, and Harbor) as of June 30, 2018 and June 30, 2019 are allocated based on the actual employer contributions made during 2017/2018 and 2018/2019, respectively. The steps we used for the allocation are as follows:
  - First calculate the ratio of the employer category's contributions to the total contributions.

[1] *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.*

  - Then multiply this ratio by the NOL to determine the employer category's proportionate share of the NOL. The NOL allocation can be found in Exhibit 7 in Section 2.

- The OPEB expense decreased from $89.5 million as of June 30, 2018 to $79.2 million as of June 30, 2019 mainly due to the expensed portion of premium experience gains.
- Results shown in this report exclude any employer contributions made after the measurement date as of June 30, 2019. Employers should consult with their auditors to determine the deferred outflow that should be created for these contributions.
- The Coronavirus (COVID-19) pandemic is rapidly evolving and is having a significant impact on the US economy in 2020, including most OPEB plans, and will likely continue to have an impact in the future. Our results do not include the impact of the following:
  - Changes in the market value of plan assets since June 30, 2019
  - Changes in interest rates since June 30, 2019
  - Short-term or long-term impacts on mortality of the covered population
  - The potential for federal or state fiscal relief
  - Short-term increases in health plan costs related to the testing or treatment of COVID-19

  Each of the above factors could significantly impact these results. The above factors generally will not have an impact on the June 30, 2019 valuation, since that is based on a snapshot of assets and liabilities prior to recent events. Given the high level of uncertainty and fluidity of the current events, you may wish to consider updated estimates to monitor the plan's financial status. We will keep you updated on emerging developments.

## Summary of Key Valuation Results

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020[1]<br>June 30, 2019 | June 30, 2019[2]<br>June 30, 2018 |
|---|---|---|
| **Disclosure elements for fiscal year ending June 30:** | | |
| 1. Service cost[3] | $74,477,507 | $74,610,881 |
| 2. Total OPEB Liability | 3,334,298,548 | 3,256,827,847 |
| 3. Plan's Fiduciary Net Position | 2,812,097,867 | 2,676,371,615 |
| 4. Net OPEB Liability (2) – (3) | 522,200,681 | 580,456,232 |
| 5. OPEB expense | 79,246,882 | 89,544,723 |
| **Schedule of contributions for fiscal year ending June 30:** | | |
| 6. Actuarially determined contributions | $107,926,949 | $100,909,010 |
| 7. Actual contributions | 107,926,949 | 100,909,010 |
| 8. Contribution deficiency (excess) (6) – (7) | 0 | 0 |
| **Demographic data for plan year ending June 30:** | | |
| 9. Number of retired members and surviving spouses[4] | 15,791 | 15,144 |
| 10. Number of vested terminated members | 1,474 | 1,401 |
| 11. Number of active members | 26,632 | 26,042 |
| **Key assumptions as of June 30:** | | |
| 12. Discount Rate | 7.25% | 7.25% |
| 13. Medical cost trend rates | | |
| Non-Medicare medical plan | Graded from 6.62% to ultimate 4.50% over 9 years[5] | Graded from 6.87% to ultimate 4.50% over 10 years[5] |
| Medicare medical plan | Graded from 6.12% to ultimate 4.50% over 7 years[5] | Graded from 6.37% to ultimate 4.50% over 8 years[5] |
| Dental | 4.00% | 4.00% |
| Medicare Part B | 4.50% | 4.00% |

(1) *The reporting date and measurement date for the Plan are June 30, 2019.*

(2) *The reporting date and measurement date for the Plan are June 30, 2018.*

(3) *The service cost is based on the previous year's valuation, meaning the June 30, 2019 and June 30, 2018 measurement date values are based on the valuations as of June 30, 2018 and June 30, 2017, respectively. The June 30, 2019 measurement date service cost has been calculated using the assumptions shown in the June 30, 2018 measurement date column and the June 30, 2018 measurement date service cost has been calculated using the following assumptions:*

| ***Key assumptions as of June 30, 2017:*** | |
|---|---|
| *Discount rate* | *7.25%* |
| *Health care premium trend rates* | |
| *Non-Medicare medical plan* | *Graded from 6.87% to ultimate 4.50% over 10 years* |
| *Medicare medical plan* | *Graded from 6.37% to ultimate 4.50% over 8 years* |
| *Dental and Medicare Part B* | *4.50%* |

(4) *The total number of participants, including married dependents, receiving benefits is 21,115 as of June 30, 2019 and 20,288 as of June 30, 2018.*

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

## Important Information about Actuarial Valuations

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

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

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan 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 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, 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 cost 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.

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 Board to assist the sponsors of the Fund in preparing items related to the OPEB 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 the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to LACERS.

## EXHIBIT 1

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

### Plan Description

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

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

*Plan membership.* At June 30, 2019, OPEB plan membership consisted of the following:

| | |
|---|---|
| Retired members or surviving spouses currently receiving benefits[1] | 15,791 |
| Vested terminated members entitled to, but not yet receiving benefits | 1,474 |
| Active members | 26,632 |
| Total | 43,897 |

[1] *The total number of participants, including married dependents, receiving benefits is 21,115.*

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

**Membership Eligibility:**

| | |
|---|---|
| *Tier 1 (§4.1002(a))* | All employees who became members of LACERS before July 1, 2013, and certain employees who became members of LACERS on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees who became members of LACERS 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 LACERS 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, 2019, the maximum health subsidy is $1,790.80 per month, remaining unchanged in calendar year 2020. 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, 2019, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2020.

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

**Medicare Part B Reimbursement for Members:**

*Tier 1 (§4.1113) and Tier 3 (§4.1128)*

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

**Surviving Spouse Medical Subsidy**

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

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

*Under Age 65 or Over Age 65 Without Medicare Part A*

The maximum health subsidy available for survivors is the lowest cost plan available (currently Kaiser) single-party premium ($853.39 per month as of July 1, 2019; remaining unchanged in calendar year 2020).

*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% |

In compliance with the City Charter Sections 1158 and 1160, the City of Los Angeles contributes to the health 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, 2019 was 5.12% of compensation.[1]

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.

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[1] *Based on the June 30, 2017 funding valuation (which established funding requirements for fiscal year 2018/2019). Exhibit 6 in Section 2 of this report provides details on how this rate was calculated.*

**EXHIBIT 2**

**Net OPEB Liability**

| **Reporting Date for Employer under GAS 75** | **June 30, 2020** | **June 30, 2019** |
|---|---|---|
| **Measurement Date for Employer under GAS 75** | **June 30, 2019** | **June 30, 2018** |
| The components of the Net OPEB Liability are as follows: | | |
| Total OPEB Liability | $3,334,298,548 | $3,256,827,847 |
| Plan's Fiduciary Net Position | -2,812,097,867 | -2,676,371,615 |
| Net OPEB Liability | $522,200,681 | $580,456,232 |
| Plan's Fiduciary Net Position as a Percentage of the Total OPEB Liability | 84.34% | 82.18% |

The Net OPEB Liability (NOL) was measured as of June 30, 2019 and 2018. The Plan's Fiduciary Net Position (plan assets) and Total OPEB Liability (TOL) were valued as of the measurement date and were based on the actuarial valuations as of June 30, 2019 and 2018, respectively.

*Plan provisions*. The plan provisions used in the measurement of the NOL as of June 30, 2019 and 2018 are the same as those used in the LACERS funding valuations as of June 30, 2019 and 2018, respectively.

*Actuarial assumptions.* The Total OPEB Liabilities as of June 30, 2019 and June 30, 2018 were determined by actuarial valuations as of June 30, 2019 and June 30, 2018, respectively. The actuarial assumptions used in both the June 30, 2019 and June 30, 2018 valuations were based on the results of the July 1, 2014 through June 30, 2017 Actuarial Experience Study dated June 29, 2018, economic assumption review dated June 30, 2017 and retiree health assumptions letter dated September 17, 2019 and September 18, 2018, respectively. The assumptions used in the June 30, 2019 funding actuarial valuation for LACERS were applied to all periods included in the measurement:

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

## EXHIBIT 3
### Target Asset Allocation

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, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, are summarized in the following table. These values were used in the derivation of the long-term expected investment rate of return assumption for the actuarial valuation as of June 30, 2019. This information is subject to change every three years based on the actuarial experience study.

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

*Discount rate.* The discount rate used to measure the Total OPEB Liability (TOL) was 7.25% as of June 30, 2019 and June 30, 2018. The projection of cash flows used to determine the discount rate assumed that 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 Total OPEB Liability as of both June 30, 2019 and June 30, 2018.

## EXHIBIT 4

### Discount Rate and Healthcare Cost Trend Rate Sensitivity

*Sensitivity of the Net OPEB Liability to changes in the discount rate.* The following presents the Net OPEB Liability (NOL) of LACERS as of June 30, 2019, calculated using the discount rate of 7.25%, as well as what LACERS' NOL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

| Net OPEB Liability | 1% Decrease (6.25%) | Current Discount Rate (7.25%) | 1% Increase (8.25%) |
|---|---|---|---|
| City | $831,364,438 | $434,101,068 | $109,573,543 |
| Airports | 132,172,372 | 69,014,460 | 17,420,273 |
| Harbor | 36,550,745 | 19,085,153 | 4,817,375 |
| Total for all Employer Categories | $1,000,087,555 | $522,200,681 | $131,811,191 |

*Sensitivity of the Net OPEB Liability to changes in the health care cost trend rate.* The following presents the NOL of LACERS as of June 30, 2019, as well as what LACERS' NOL 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.

| Net OPEB Liability | 1% Decrease | Current Trend Rates* | 1% Increase |
|---|---|---|---|
| City | $67,214,401 | $434,101,068 | $915,507,160 |
| Airports | 10,685,912 | 69,014,460 | 145,549,590 |
| Harbor | 2,955,066 | 19,085,153 | 40,250,060 |
| Total for all Employer Categories | $80,855,379 | $522,200,681 | $1,101,306,810 |

* *Current trend rates: 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.*

## EXHIBIT 5

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

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Total OPEB Liability** | | |
| Service cost(1) | $74,477,507 | $74,610,881 |
| Interest | 236,677,675 | 218,687,305 |
| Change of benefit terms (retirement rates adjusted for Enhanced Tier 1) | 0 | 948,264 |
| Differences between expected and actual experience | -134,052,778 | -7,321,481(2) |
| Changes of assumptions | 33,939,702 | 92,177,641 |
| Benefit payments | -133,571,405 | -128,080,997 |
| **Net change in Total OPEB Liability** | $77,470,701 | $251,021,613 |
| **Total OPEB Liability – beginning** | 3,256,827,847 | 3,005,806,234 |
| **Total OPEB Liability – ending (a)** | $3,334,298,548 | $3,256,827,847 |
| **Plan Fiduciary Net Position** | | |
| Contributions – employer | $107,926,949 | $100,909,010 |
| Contributions – employee | 0 | 0 |
| Net investment income | 166,469,503 | 269,380,196 |
| Benefit payments | -133,571,405 | -128,080,997 |
| Administrative expense | -5,098,795 | -4,698,444 |
| Other | 0 | 0 |
| **Net change in Plan Fiduciary Net Position** | $135,726,252 | $237,509,765 |
| **Plan Fiduciary Net Position – beginning** | 2,676,371,615 | 2,438,861,850 |
| **Plan Fiduciary Net Position – ending (b)** | $2,812,097,867 | $2,676,371,615 |
| **Net OPEB Liability – ending (a) – (b)** | $522,200,681 | $580,456,232 |
| **Plan Fiduciary Net Position as a percentage of the Total OPEB Liability** | 84.34% | 82.18% |
| **Covered payroll(3)** | $2,108,171,088 | $2,057,565,478 |
| **Plan Net OPEB Liability as percentage of covered payroll** | 24.77% | 28.21% |

**EXHIBIT 5 (continued)**

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

(1) *The service cost is always based on the previous year's valuation, meaning the 2019 and 2018 values are based on the valuations as of June 30, 2018 and June 30, 2017, respectively. The 2019 service cost has been calculated using the assumptions shown in the 2018 column on page iv and the 2018 service cost has been calculated using the key assumptions as of June 30, 2017 shown in footnote (3) of page iv.*

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

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

## EXHIBIT 6

### Schedule of Employer Contributions – Last Ten Fiscal Years

| Year Ended June 30, | Actuarially Determined Contributions | Contributions in Relation to the Actuarially Determined Contributions | Contribution Deficiency (Excess) | Covered Payroll[1] | Contributions as a Percentage of Covered Payroll |
|---|---|---|---|---|---|
| 2010 | $96,511,234 | $96,511,234 | $0 | $1,827,864,283 | 5.28% |
| 2011 | 107,395,804 | 107,395,804 | 0 | 1,678,059,440 | 6.40% |
| 2012 | 115,208,835 | 115,208,835 | 0 | 1,715,197,133 | 6.72% |
| 2013 | 72,916,729 | 72,916,729 | 0 | 1,736,112,598 | 4.20% |
| 2014 | 97,840,554 | 97,840,554 | 0 | 1,802,931,195 | 5.43% |
| 2015 | 100,466,945 | 100,466,945 | 0 | 1,835,637,409 | 5.47% |
| 2016 | 105,983,112 | 105,983,112 | 0 | 1,876,946,179 | 5.65% |
| 2017 | 97,457,455 | 97,457,455 | 0 | 1,973,048,633 | 4.94% |
| 2018 | 100,909,010 | 100,909,010 | 0 | 2,057,565,478 | 4.90% |
| 2019 | 107,926,949 | 107,926,949 | 0 | 2,108,171,088 | 5.12% |

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

*See accompanying notes to this schedule on next page.*

## Notes to Exhibit 6

| | |
|---|---|
| **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 (level percent of payroll) |
| **Amortization method** | Level percent of payroll |
| **Amortization period** | Multiple layers, closed amortization periods. The costs associated with the 2009 ERIP have been amortized over 15 years beginning with the June 30, 2009 valuation date. The unfunded actuarial accrued liability as of June 30, 2012 is amortized over a fixed period of 30 years beginning July 1, 2012. Assumption changes resulting from the triennial experience study will be amortized over 20 years.<br>Health trend and premium assumption changes, plan changes, and gains and losses will be amortized over 15 years. |
| **Asset valuation method** | Market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets. |
| **Actuarial assumptions**: | June 30, 2019 valuation date |
| Investment rate of return | 7.25% |
| Inflation rate | 3.00% |
| Real across-the-board salary increase | 0.50% |
| Projected salary increases[1] | Ranges from 10.00% to 3.90%, based on years of service |
| Mortality | Healthy Post-Retirement: 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. |
| Other assumptions | Same as those used in the June 30, 2019 funding actuarial valuation |

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

## EXHIBIT 7

## Determination of Proportionate Share

### Actual Employer Contributions by Employer Category
### July 1, 2017 to June 30, 2018

| Employer Category | Contributions | Percentage[1] |
|---|---|---|
| City | $83,505,493 | 82.753% |
| Airports | 13,616,238 | 13.494% |
| Harbor | 3,787,279 | 3.753% |
| Total for all Employer Categories | $100,909,010 | 100.000% |

[1] The unrounded percentages are used in the allocation of the NOL amongst employer categories.

### Allocation of June 30, 2018 Net OPEB Liability

| Employer Category | NOL | Percentage |
|---|---|---|
| City | $480,346,441 | 82.753% |
| Airports | 78,324,326 | 13.494% |
| Harbor | 21,785,465 | 3.753% |
| Total for all Employer Categories | $580,456,232 | 100.000% |

**Notes:**

1. Based on the July 1, 2017 through June 30, 2018 employer contributions as provided by LACERS.
2. The Net OPEB Liability (NOL) is the Total OPEB Liability (TOL) minus the Plan's Fiduciary Net Position (plan assets).
3. The NOL is allocated based on the actual contributions from each employer category. The steps used for the allocation are as follows:
   - First calculate the ratio of the contributions from the employer category to the total contributions.
   - Then multiply this ratio by the NOL to determine the employer category's proportionate share of the NOL.

## EXHIBIT 7 (continued)

## Determination of Proportionate Share

### Actual Employer Contributions by Employer Category
### July 1, 2018 to June 30, 2019

| Employer Category | Contributions | Percentage[1] |
|---|---|---|
| City | $89,718,772 | 83.129% |
| Airports | 14,263,712 | 13.216% |
| Harbor | 3,944,465 | 3.655% |
| Total for all Employer Categories | $107,926,949 | 100.000% |

[1] The unrounded percentages are used in the allocation of the NOL amongst employer categories.

### Allocation of June 30, 2019 Net OPEB Liability

| Employer Category | NOL | Percentage |
|---|---|---|
| City | $434,101,068 | 83.129% |
| Airports | 69,014,460 | 13.216% |
| Harbor | 19,085,153 | 3.655% |
| Total for all Employer Categories | $522,200,681 | 100.000% |

**Notes:**

1. Based on the July 1, 2018 through June 30, 2019 employer contributions as provided by LACERS.
2. The Net OPEB Liability (NOL) is the Total OPEB Liability (TOL) minus the Plan's Fiduciary Net Position (plan assets).
3. The NOL is allocated based on the actual contributions from each employer category. The steps used for the allocation are as follows:
   - First calculate the ratio of the contributions from the employer category to the total contributions.
   - Then multiply this ratio by the NOL to determine the employer category's proportionate share of the NOL.

## EXHIBIT 7 (continued)

### Determination of Proportionate Share

**Notes:**

For purposes of the results in this exhibit, the reporting date for the employer under GAS 75 is June 30, 2020. The reporting date and measurement date for the Plan under GAS 74 are June 30, 2019. Consistent with the provisions of GAS 75, the assets and liabilities measured as of June 30, 2019 are not adjusted or rolled forward to the June 30, 2020 reporting date. Other results, such as the total deferred inflows and outflows would also be allocated based on the same proportionate shares determined above.

The following items are allocated based on the corresponding proportionate share:

1) Net OPEB Liability
2) Service Cost
3) Interest on the Total OPEB Liability
4) Expensed portion of current-period benefit changes
5) Expensed portion of current-period difference between actual and expected experience in the Total OPEB Liability
6) Expensed portion of current-period changes of assumptions or other inputs
7) Projected earnings on plan investments
8) Expensed portion of current-period differences between actual and projected earnings on plan investments
9) Administrative expense
10) Recognition of beginning of year deferred outflows of resources as OPEB expense
11) Recognition of beginning of year deferred inflows of resources as OPEB expense

**EXHIBIT 8**

**OPEB Expense – Total for all Employer Categories**

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Components of OPEB Expense** | | |
| 1. Service cost | $74,477,507 | $74,610,881 |
| 2. Interest on the Total OPEB Liability | 236,677,675 | 218,687,305 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | 0 | 0 |
| 4. Expensed portion of current-period benefit changes | 0 | 948,264 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total OPEB Liability | -21,586,599 | -1,122,927 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 5,465,330 | 14,137,675 |
| 7. Member contributions | 0 | 0 |
| 8. Projected earnings on plan investments | -196,508,822 | -179,015,303 |
| 9. Expensed portion of current-period differences between actual and projected earnings on plan investments | 6,007,864 | -18,072,979 |
| 10. Administrative expense | 5,098,795 | 4,698,444 |
| 11. Other | 0 | 0 |
| 12. Recognition of beginning of year deferred outflows of resources as OPEB expense | 22,459,803 | 8,322,128 |
| 13. Recognition of beginning of year deferred inflows of resources as OPEB expense | -52,844,671 | -33,648,765 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | 0 | 0 |
| **OPEB Expense** | $79,246,882 | $89,544,723 |

## EXHIBIT 8 (continued)

## OPEB Expense – City

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Components of OPEB Expense** | | |
| 1. Service cost | $61,912,531 | $61,742,933 |
| 2. Interest on the Total OPEB Liability | 196,748,176 | 180,970,869 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | 390,629 | 301,426 |
| 4. Expensed portion of current-period benefit changes | 0 | 784,719 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total OPEB Liability | -17,944,760 | -929,259 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 4,543,283 | 11,699,387 |
| 7. Member contributions | 0 | 0 |
| 8. Projected earnings on plan investments | -163,356,144 | -148,140,995 |
| 9. Expensed portion of current-period differences between actual and projected earnings on plan investments | 4,994,287 | -14,955,979 |
| 10. Administrative expense | 4,238,586 | 3,888,115 |
| 11. Other | 0 | 0 |
| 12. Recognition of beginning of year deferred outflows of resources as OPEB expense | 18,670,647 | 6,886,832 |
| 13. Recognition of beginning of year deferred inflows of resources as OPEB expense | -43,929,334 | -27,845,449 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | 535,436 | 234,010 |
| **OPEB Expense** | $66,803,337 | $74,636,609 |

## EXHIBIT 8 (continued)

## OPEB Expense – Airports

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Components of OPEB Expense** | | |
| 1. Service cost | $9,843,007 | $10,067,680 |
| 2. Interest on the Total OPEB Liability | 31,279,511 | 29,508,746 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | -288,367 | -189,259 |
| 4. Expensed portion of current-period benefit changes | 0 | 127,955 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total OPEB Liability | -2,852,902 | -151,523 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 722,302 | 1,907,678 |
| 7. Member contributions | 0 | 0 |
| 8. Projected earnings on plan investments | -25,970,763 | -24,155,573 |
| 9. Expensed portion of current-period differences between actual and projected earnings on plan investments | 794,004 | -2,438,692 |
| 10. Administrative expense | 673,861 | 633,988 |
| 11. Other | 0 | 0 |
| 12. Recognition of beginning of year deferred outflows of resources as OPEB expense | 2,968,306 | 1,122,953 |
| 13. Recognition of beginning of year deferred inflows of resources as OPEB expense | -6,983,994 | -4,540,423 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | -338,498 | -149,239 |
| **OPEB Expense** | $9,846,467 | $11,744,291 |

**EXHIBIT 8 (continued)**

**OPEB Expense – Harbor**

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Components of OPEB Expense** | | |
| 1. Service cost | $2,721,969 | $2,800,268 |
| 2. Interest on the Total OPEB Liability | 8,649,988 | 8,207,690 |
| 3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions | -102,262 | -112,167 |
| 4. Expensed portion of current-period benefit changes | 0 | 35,590 |
| 5. Expensed portion of current-period difference between actual and expected experience in the Total OPEB Liability | -788,937 | -42,145 |
| 6. Expensed portion of current-period changes of assumptions or other inputs | 199,745 | 530,610 |
| 7. Member contributions | 0 | 0 |
| 8. Projected earnings on plan investments | -7,181,915 | -6,718,735 |
| 9. Expensed portion of current-period differences between actual and projected earnings on plan investments | 219,573 | -678,308 |
| 10. Administrative expense | 186,348 | 176,341 |
| 11. Other | 0 | 0 |
| 12. Recognition of beginning of year deferred outflows of resources as OPEB expense | 820,850 | 312,343 |
| 13. Recognition of beginning of year deferred inflows of resources as OPEB expense | -1,931,343 | -1,262,893 |
| 14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions | -196,938 | -84,771 |
| **OPEB Expense** | $2,597,078 | $3,163,823 |

## EXHIBIT 9

### Deferred Outflows of Resources and Deferred Inflows of Resources – Total for all Employer Categories

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $4,190,912 | $2,691,173 |
| 2. Changes of assumptions or other inputs | 110,155,291 | 101,063,027 |
| 3. Net excess of projected over actual earnings on OPEB plan investments (if any) | 0 | 0 |
| 4. Difference between actual and expected experience in the Total OPEB Liability | 10,433,386 | 13,511,081 |
| 5. Total Deferred Outflows of Resources | $124,779,589 | $117,265,281 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $4,190,912 | $2,691,173 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on OPEB plan investments (if any) | 97,485,010 | 173,238,209 |
| 9. Difference between expected and actual experience in the Total OPEB Liability | 117,541,806 | 6,198,554 |
| 10. Total Deferred Inflows of Resources | $219,217,728 | $182,127,936 |

Deferred outflows of resources and deferred inflows of resources related to OPEB expense will be recognized as follows:

| Reporting Date for Employer under GAS 75 Year Ended June 30: | | |
|---|---|---|
| 2020 | N/A | -$30,384,868 |
| 2021 | -$40,498,273 | -30,384,868 |
| 2022 | -40,498,273 | -30,384,868 |
| 2023 | -6,849,506 | 3,263,899 |
| 2024 | 6,146,972 | 16,260,378 |
| 2025 | -9,353,597 | 6,767,672 |
| 2026 | -3,385,462 | 0 |
| Thereafter | 0 | 0 |

[1] *Calculated in accordance with Paragraphs 63 and 64 of GAS 75.*

## EXHIBIT 9 (continued)

### Deferred Outflows of Resources and Deferred Inflows of Resources – City

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[(1)] | $4,190,912 | $2,691,173 |
| 2. Changes of assumptions or other inputs | 91,571,174 | 83,632,947 |
| 3. Net excess of projected over actual earnings on OPEB plan investments (if any) | 0 | 0 |
| 4. Difference between actual and expected experience in the Total OPEB Liability | 8,673,187 | 11,180,860 |
| 5. Total Deferred Outflows of Resources | $104,435,273 | $97,504,980 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[(1)] | $0 | $0 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on OPEB plan investments (if any) | 81,038,475 | 143,360,261 |
| 9. Difference between expected and actual experience in the Total OPEB Liability | 97,711,522 | 5,129,505 |
| 10. Total Deferred Inflows of Resources | $178,749,997 | $148,489,766 |

Deferred outflows of resources and deferred inflows of resources related to OPEB expense will be recognized as follows:

| Reporting Date for Employer under GAS 75 Year Ended June 30: | | |
|---|---|---|
| 2020 | N/A | -$24,609,032 |
| 2021 | -$32,739,811 | -24,609,032 |
| 2022 | -32,739,811 | -24,609,032 |
| 2023 | -4,767,872 | 3,236,419 |
| 2024 | 5,893,245 | 13,848,681 |
| 2025 | -7,228,198 | 5,757,210 |
| 2026 | -2,732,277 | 0 |
| Thereafter | 0 | 0 |

(1) *Calculated in accordance with Paragraphs 63 and 64 of GAS 75.*

## EXHIBIT 9 (continued)

### Deferred Outflows of Resources and Deferred Inflows of Resources – Airports

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $0 | $0 |
| 2. Changes of assumptions or other inputs | 14,558,211 | 13,637,020 |
| 3. Net excess of projected over actual earnings on OPEB plan investments (if any) | 0 | 0 |
| 4. Difference between actual and expected experience in the Total OPEB Liability | 1,378,885 | 1,823,129 |
| 5. Total Deferred Outflows of Resources | $15,937,096 | $15,460,149 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $2,863,759 | $1,699,864 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on OPEB plan investments (if any) | 12,883,697 | 23,376,036 |
| 9. Difference between expected and actual experience in the Total OPEB Liability | 15,534,419 | 836,407 |
| 10. Total Deferred Inflows of Resources | $31,281,875 | $25,912,307 |

Deferred outflows of resources and deferred inflows of resources related to OPEB expense will be recognized as follows:

| Reporting Date for Employer under GAS 75 Year Ended June 30: | | |
|---|---|---|
| 2020 | N/A | -$4,438,504 |
| 2021 | -$5,979,149 | -4,438,504 |
| 2022 | -5,979,149 | -4,438,504 |
| 2023 | -1,532,101 | 101,919 |
| 2024 | 276,563 | 1,946,648 |
| 2025 | -1,622,959 | 814,787 |
| 2026 | -507,984 | 0 |
| Thereafter | 0 | 0 |

[1] *Calculated in accordance with Paragraphs 63 and 64 of GAS 75.*

## EXHIBIT 9 (continued)

### Deferred Outflows of Resources and Deferred Inflows of Resources – Harbor

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Deferred Outflows of Resources** | | |
| 1. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $0 | $0 |
| 2. Changes of assumptions or other inputs | 4,025,906 | 3,793,060 |
| 3. Net excess of projected over actual earnings on OPEB plan investments (if any) | 0 | 0 |
| 4. Difference between actual and expected experience in the Total OPEB Liability | 381,314 | 507,092 |
| 5. Total Deferred Outflows of Resources | $4,407,220 | $4,300,152 |
| **Deferred Inflows of Resources** | | |
| 6. Changes in proportion and differences between employer's contributions and proportionate share of contributions[1] | $1,327,153 | $991,309 |
| 7. Changes of assumptions or other inputs | 0 | 0 |
| 8. Net excess of actual over projected earnings on OPEB plan investments (if any) | 3,562,838 | 6,501,912 |
| 9. Difference between expected and actual experience in the Total OPEB Liability | 4,295,865 | 232,642 |
| 10. Total Deferred Inflows of Resources | $9,185,856 | $7,725,863 |

Deferred outflows of resources and deferred inflows of resources related to OPEB expense will be recognized as follows:

| **Reporting Date for Employer under GAS 75 Year Ended June 30:** | | |
|---|---|---|
| 2020 | N/A | -$1,337,332 |
| 2021 | -$1,779,313 | -1,337,332 |
| 2022 | -1,779,313 | -1,337,332 |
| 2023 | -549,533 | -74,439 |
| 2024 | -22,836 | 465,049 |
| 2025 | -502,440 | 195,675 |
| 2026 | -145,201 | 0 |
| Thereafter | 0 | 0 |

[1] *Calculated in accordance with Paragraphs 63 and 64 of GAS 75.*

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources**

There are changes in each employer's proportionate share of the total Net OPEB Liability (NOL) during the measurement period ended June 30, 2019. The net effect of the change on the employer category's proportionate share of the collective NOL and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with benefits through LACERS which is 6.21[(1)] years determined as of June 30, 2018 (the beginning of the measurement period ended June 30, 2019). This is described in Paragraph 64 of GAS 75.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2019 is recognized over the same period. This is zero because the proportionate share was determined using the actual employer contributions.

The average of the expected service lives of all employees is determined by:

- Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

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*(1) The remaining service lives of all employees of 6.21 years used here for GAS 75 is different from the 4.97 years used for GAS 68 because the number of payees and nonactive members (with 0 years of expected remaining service lives) receiving health benefits under the Plan is less than the number of payees and nonactive members receiving pension benefits.*

**EXHIBIT 10**

**Schedule of Proportionate Share of the Net OPEB Liability – Total for all Employer Categories**

| Reporting Date for Employer under GAS 75 as of June 30 | Measurement Date as of June 30 | Proportion of the Net OPEB Liability | Proportionate share of Net OPEB Liability | Employer Contribution | Covered-employee payroll[1] | Proportionate share of the Net OPEB Liability as a percentage of its covered-employee payroll | Plan's Fiduciary Net Position as a percentage of the Total OPEB Liability |
|---|---|---|---|---|---|---|---|
| 2017 | 2016 | 100.000% | $658,811,838 | $105,983,112 | $1,876,946,179 | 35.10% | 76.42% |
| 2018 | 2017 | 100.000% | 566,944,384 | 97,457,455 | 1,973,048,633 | 28.73% | 81.14% |
| 2019 | 2018 | 100.000% | 580,456,232 | 100,909,010 | 2,057,565,478 | 28.21% | 82.18% |
| 2020 | 2019 | 100.000% | 522,200,681 | 107,926,949 | 2,108,171,088 | 24.77% | 84.34% |

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

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net OPEB Liability – City**

| Reporting Date for Employer under GAS 75 as of June 30 | Measurement Date as of June 30 | Proportion of the Net OPEB Liability | Proportionate share of Net OPEB Liability | Employer Contribution | Covered-employee payroll[1] | Proportionate share of the Net OPEB Liability as a percentage of its covered-employee payroll | Plan's Fiduciary Net Position as a percentage of the Total OPEB Liability |
|---|---|---|---|---|---|---|---|
| 2017 | 2016 | 82.227% | $541,721,269 | $87,146,743 | $1,540,925,299 | 35.16% | 76.42% |
| 2018 | 2017 | 82.454% | 467,468,218 | 80,357,552 | 1,625,808,930 | 28.75% | 81.14% |
| 2019 | 2018 | 82.753% | 480,346,441 | 83,505,493 | 1,701,304,099 | 28.23% | 82.18% |
| 2020 | 2019 | 83.129% | 434,101,068 | 89,718,772 | 1,749,621,444 | 24.81% | 84.34% |

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

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net OPEB Liability – Airports**

| Reporting Date for Employer under GAS 75 as of June 30 | Measurement Date as of June 30 | Proportion of the Net OPEB Liability | Proportionate share of Net OPEB Liability | Employer Contribution | Covered-employee payroll[1] | Proportionate share of the Net OPEB Liability as a percentage of its covered-employee payroll | Plan's Fiduciary Net Position as a percentage of the Total OPEB Liability |
|---|---|---|---|---|---|---|---|
| 2017 | 2016 | 13.826% | $91,088,903 | $14,653,479 | $260,929,145 | 34.91% | 76.42% |
| 2018 | 2017 | 13.681% | 77,566,434 | 13,333,631 | 271,035,342 | 28.62% | 81.14% |
| 2019 | 2018 | 13.494% | 78,324,326 | 13,616,238 | 278,681,843 | 28.11% | 82.18% |
| 2020 | 2019 | 13.216% | 69,014,460 | 14,263,712 | 280,595,646 | 24.60% | 84.34% |

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

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net OPEB Liability – Harbor**

| Reporting Date for Employer under GAS 75 as of June 30 | Measurement Date as of June 30 | Proportion of the Net OPEB Liability | Proportionate share of Net OPEB Liability | Employer Contribution | Covered-employee payroll[1] | Proportionate share of the Net OPEB Liability as a percentage of its covered-employee payroll | Plan's Fiduciary Net Position as a percentage of the Total OPEB Liability |
|---|---|---|---|---|---|---|---|
| 2017 | 2016 | 3.947% | $26,001,666 | $4,182,890 | $75,091,735 | 34.63% | 76.42% |
| 2018 | 2017 | 3.865% | 21,909,732 | 3,766,272 | 76,204,361 | 28.75% | 81.14% |
| 2019 | 2018 | 3.753% | 21,785,465 | 3,787,279 | 77,579,536 | 28.08% | 82.18% |
| 2020 | 2019 | 3.655% | 19,085,153 | 3,944,465 | 77,953,998 | 24.48% | 84.34% |

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

**EXHIBIT 11**

**Schedule of Reconciliation of Net OPEB Liability – Total for all Employer Categories**

| **Reporting Date for Employer under GAS 75**<br>**Measurement Date for Employer under GAS 75** | **June 30, 2020**<br>**June 30, 2019** | **June 30, 2019**<br>**June 30, 2018** |
|---|---|---|
| **Reconciliation of Net OPEB Liability** | | |
| 1. Beginning Net OPEB Liability | $580,456,232 | $566,944,384 |
| 2. OPEB Expense | 79,246,882 | 89,544,723 |
| 3. Employer Contributions | -107,926,949 | -100,909,010 |
| 4. New Net Deferred Inflows/Outflows | -59,960,352 | -450,502 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | 0 | 0 |
| 6. New Net Deferred Flows Due to Change in Proportion | 0 | 0 |
| 7. Recognition of Prior Deferred Inflows/Outflows | 30,384,868 | 25,326,637 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | 0 | 0 |
| 9. Ending Net OPEB Liability | $522,200,681 | $580,456,232 |

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net OPEB Liability – City**

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Reconciliation of Net OPEB Liability** | | |
| 1. Beginning Net OPEB Liability | $480,346,441 | $467,468,218 |
| 2. OPEB Expense | 66,803,337 | 74,636,609 |
| 3. Employer Contributions | -89,718,772 | -83,505,493 |
| 4. New Net Deferred Inflows/Outflows | -49,844,540 | -372,803 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | -243,824 | -268,567 |
| 6. New Net Deferred Flows Due to Change in Proportion | 2,035,175 | 1,663,870 |
| 7. Recognition of Prior Deferred Inflows/Outflows | 25,258,687 | 20,958,617 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | -535,436 | -234,010 |
| 9. Ending Net OPEB Liability | $434,101,068 | $480,346,441 |

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net OPEB Liability – Airports**

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Reconciliation of Net OPEB Liability** | | |
| 1. Beginning Net OPEB Liability | $78,324,326 | $77,566,434 |
| 2. OPEB Expense | 9,846,467 | 11,744,291 |
| 3. Employer Contributions | -14,263,712 | -13,616,238 |
| 4. New Net Deferred Inflows/Outflows | -7,924,408 | -60,789 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | 179,994 | 168,627 |
| 6. New Net Deferred Flows Due to Change in Proportion | -1,502,393 | -1,044,708 |
| 7. Recognition of Prior Deferred Inflows/Outflows | 4,015,688 | 3,417,470 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | 338,498 | 149,239 |
| 9. Ending Net OPEB Liability | $69,014,460 | $78,324,326 |

**EXHIBIT 11 (continued)**
**Schedule of Reconciliation of Net OPEB Liability – Harbor**

| Reporting Date for Employer under GAS 75<br>Measurement Date for Employer under GAS 75 | June 30, 2020<br>June 30, 2019 | June 30, 2019<br>June 30, 2018 |
|---|---|---|
| **Reconciliation of Net OPEB Liability** | | |
| 1. Beginning Net OPEB Liability | $21,785,465 | $21,909,732 |
| 2. OPEB Expense | 2,597,078 | 3,163,823 |
| 3. Employer Contributions | -3,944,465 | -3,787,279 |
| 4. New Net Deferred Inflows/Outflows | -2,191,404 | -16,910 |
| 5. Change in Allocation of Prior Deferred Inflows/Outflows | 63,830 | 99,940 |
| 6. New Net Deferred Flows Due to Change in Proportion | -532,782 | -619,162 |
| 7. Recognition of Prior Deferred Inflows/Outflows | 1,110,493 | 950,550 |
| 8. Recognition of Prior Deferred Flows Due to Change in Proportion | 196,938 | 84,771 |
| 9. Ending Net OPEB Liability | $19,085,153 | $21,785,465 |

## EXHIBIT 12

### Schedule of Recognition of Changes in Total Net OPEB Liability

**Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Differences between Actual and Expected Experience on Total OPEB Liability**

| Reporting Date for Employer under GAS 75 Year Ended June 30 | Differences Between Actual and Expected Experience | Recognition Period (Years) | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| 2018 | $19,666,471 | 6.39 | $3,077,695 | $3,077,695 | $3,077,695 | $3,077,695 | $3,077,695 | $1,200,301 | $0 | $0 |
| 2019 | -7,321,481 | 6.52 | -1,122,927 | -1,122,927 | -1,122,927 | -1,122,927 | -1,122,927 | -1,122,927 | -583,919 | 0 |
| 2020 | -134,052,778 | 6.21 | N/A | -21,586,599 | -21,586,599 | -21,586,599 | -21,586,599 | -21,586,599 | -21,586,599 | -4,533,184 |
| Net increase (decrease) in OPEB expense | | | $1,954,768 | -$19,631,831 | -$19,631,831 | -$19,631,831 | -$19,631,831 | -$21,509,225 | -$22,170,518 | -$4,533,184 |

**Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Assumption Changes**

| Reporting Date for Employer under GAS 75 Year Ended June 30 | Effect of Assumption Changes | Recognition Period (Years) | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| 2018 | $33,511,927 | 6.39 | $5,244,433 | $5,244,433 | $5,244,433 | $5,244,433 | $5,244,433 | $2,045,329 | $0 | $0 |
| 2019 | 92,177,641 | 6.52 | 14,137,675 | 14,137,675 | 14,137,675 | 14,137,675 | 14,137,675 | 14,137,675 | 7,351,591 | 0 |
| 2020 | 33,939,702 | 6.21 | N/A | 5,465,330 | 5,465,330 | 5,465,330 | 5,465,330 | 5,465,330 | 5,465,330 | 1,147,722 |
| Net increase (decrease) in OPEB expense | | | $19,382,108 | $24,847,438 | $24,847,438 | $24,847,438 | $24,847,438 | $21,648,334 | $12,816,921 | $1,147,722 |

As described in Exhibit 9, the average of the expected remaining service lives of all employees that are provided with benefits through LACERS (active and inactive employees) determined as of June 30, 2018 (the beginning of the measurement period ending June 30, 2019 ) is 6.21 years.

**EXHIBIT 12 (continued)**

**Schedule of Recognition of Changes in Total Net OPEB Liability**

**Increase (Decrease) in OPEB Expense Arising from the Recognition of Differences between Projected and Actual Earnings on OPEB Plan Investments**

| Reporting Date for Employer under GAS 75 Year Ended June 30 | Differences between Projected and Actual Earnings | Recognition Period (Years) | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| 2018 | -$168,243,825 | 5.00 | -$33,648,765 | -$33,648,765 | -$33,648,765 | -$33,648,765 | $0 | $0 |
| 2019 | -90,364,893 | 5.00 | -18,072,979 | -18,072,979 | -18,072,979 | -18,072,979 | -18,072,977 | 0 |
| 2020 | 30,039,319 | 5.00 | N/A | 6,007,864 | 6,007,864 | 6,007,864 | 6,007,864 | 6,007,863 |
| Net increase (decrease) in OPEB expense | | | -$51,721,744 | -$45,713,880 | -$45,713,880 | -$45,713,880 | -$12,065,113 | $6,007,863 |

The differences between projected and actual earnings on OPEB plan investments are recognized over a five-year period per Paragraph 43b. of GAS 75.

**Total Increase (Decrease) in OPEB Expense**

| Reporting Date for Employer under GAS 75 Year Ended June 30 | Total Differences | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| 2018 | -$115,065,427 | -$25,326,637 | -$25,326,637 | -$25,326,637 | -$25,326,637 | $8,322,128 | $3,245,630 | $0 | $0 |
| 2019 | -5,508,733 | -5,058,231 | -5,058,231 | -5,058,231 | -5,058,231 | -5,058,229 | 13,014,748 | 6,767,672 | 0 |
| 2020 | -70,073,757 | N/A | -10,113,405 | -10,113,405 | -10,113,405 | -10,113,405 | -10,113,406 | -16,121,269 | -3,385,462 |
| Net increase (decrease) in OPEB expense | | -$30,384,868 | -$40,498,273 | -$40,498,273 | -$40,498,273 | -$6,849,506 | $6,146,972 | -$9,353,597 | -$3,385,462 |

Amortization amounts prior to June 30, 2019 have been omitted from this exhibit. These amounts can be found in prior years' GAS 75 reports.

## EXHIBIT 13

### Allocation of Changes in Total Net OPEB Liability

In addition to the amounts shown in Exhibit 12, there are changes in each employer's proportionate share of the total Net OPEB Liability (NOL) during the measurement period ending on June 30, 2019. The net effect of the change on the employer's proportionate share of the collective NOL and collective deferred outflows of resources and deferred inflows of resources is also recognized over the average of the expected remaining service lives of all employees shown previously. The differences between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ending on June 30, 2019 is recognized over the same period. These amounts are shown below. While these amounts are different for each employer, they sum to zero for the entire LACERS.

**Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Year Ended June 30, 2020**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| City | $2,425,804 | 6.21 | $390,629 | $390,629 | $390,629 | $390,629 | $390,629 | $390,629 | $82,030 |
| Airports | -1,790,760 | 6.21 | -288,367 | -288,367 | -288,367 | -288,367 | -288,367 | -288,367 | -60,558 |
| Harbor | -635,044 | 6.21 | -102,262 | -102,262 | -102,262 | -102,262 | -102,262 | -102,262 | -21,472 |
| **Total for all Employer Categories** | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

The corresponding amounts for the measurement period ending on June 30, 2018 are shown below:

**Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Year Ended June 30, 2019**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| City | $1,965,296 | 6.52 | $301,426 | $301,426 | $301,426 | $301,426 | $301,426 | $301,426 | $156,740 |
| Airports | -1,233,967 | 6.52 | -189,259 | -189,259 | -189,259 | -189,259 | -189,259 | -189,259 | -98,413 |
| Harbor | -731,329 | 6.52 | -112,167 | -112,167 | -112,167 | -112,167 | -112,167 | -112,167 | -58,327 |
| **Total for all Employer Categories** | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

The corresponding amounts for the measurement period ending on June 30, 2017 are shown below:

**Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Reporting Year Ended June 30, 2018**

| | Total Change to be Recognized | Recognition Period (Years) | Reporting Date for Employer under GAS 75 Year Ended June 30 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| City | $1,495,323 | 6.39 | $234,010 | $234,010 | $234,010 | $234,010 | $234,010 | $234,010 | $91,263 |
| Airports | -953,634 | 6.39 | -149,239 | -149,239 | -149,239 | -149,239 | -149,239 | -149,239 | -58,200 |
| Harbor | -541,689 | 6.39 | -84,771 | -84,771 | -84,771 | -84,771 | -84,771 | -84,771 | -33,063 |
| **Total for all Employer Categories** | $0 | | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

**Actuarial Assumptions and Methods**

**For June 30, 2019 Measurement Date and Employer Reporting as of June 30, 2020**

**Rationale for Assumptions:** The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2014 through June 30, 2017 Actuarial Experience Study dated June 29, 2018, economic assumption review dated June 30, 2017 and retiree health assumptions letter dated September 17, 2019. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 3 members. These assumptions have been adopted by the Board.

**Economic Assumptions:**

**Net Investment Return:** 7.25%, net of investment expenses

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

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

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

**Demographic Assumptions:**

**Post-Retirement Mortality Rates:**

*Healthy Members and All Beneficiaries:* Headcount-Weighted RP-2014 Healthy Annuitant Mortality Tables (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.

*Disabled Members:* Headcount-Weighted RP-2014 Disabled Retiree Mortality Tables (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017.

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

**Termination Rates Before Retirement:**

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

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

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

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

| | Rate (%) |
|---|---|
| **Service** | **Termination (Based on Service)** |
| 0 | 12.00 |
| 1 | 10.00 |
| 2 | 9.00 |
| 3 | 8.25 |
| 4 | 7.75 |

**Retirement Rates:**

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

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

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

| | |
|---|---|
| **Retirement Age and Benefit for Inactive Vested Participants:** | Assume retiree health benefit will be paid at the later of age 59 or the current attained age. |
| **Exclusion of Inactive Vested:** | Inactive vested with less than 10 years of service are excluded. |
| **Unknown Data for Members:** | Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male. |
| **Service:** | Employment service is used for eligibility determination purposes. Benefit service is used for benefit calculation purposes. |
| **Future Benefit Accruals:** | 1.0 year of service per year. |

**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.

**Maximum Dental Subsidy**

| Carrier | Election Percent | Monthly 2019-2020 Fiscal Year Subsidy |
|---|---|---|
| Delta Dental PPO | 79.4% | $44.60 |
| DeltaCare USA | 20.6% | $13.98 |

**Medicare Part B Premium Subsidy***

| | |
|---|---|
| Actual monthly premium for calendar year 2019 | $135.50 |
| Projected monthly premium for calendar year 2020 | $141.60 |
| Projected average monthly premium for plan year 2019/2020 | $138.55 |

**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 does not reflect Medicare Part B reimbursement for any spouse/domestic partners enrolled in Medicare Parts A and B.*

**Per Capita Cost Development – Tier 1, Not Subject to Medical Subsidy Cap and Tier 3:**
**Participant Under Age 65 or Not Eligible for Medicare A & B**

| **2019-2020 Fiscal Year** | | **Single Party** | | | **Married/With Domestic Partner** | | | **Eligible Survivor** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CARRIER** | Observed and Assumed Election Percent | Monthly Premium* | Maximum Subsidy | **Subsidy** | Monthly Premium* | Maximum Subsidy | **Subsidy** | Monthly Premium* | Maximum Subsidy | **Subsidy** |
| Kaiser HMO | **61.9%** | $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 | **21.5%** | $1,271.19 | $1,790.80 | **$1,271.19** | $2,537.56 | $1,790.80 | **$1,790.80** | $1,271.19 | $853.39 | **$853.39** |
| Anthem Blue Cross HMO | **16.6%** | $996.03 | $1,790.80 | **$996.03** | $1,987.24 | $1,790.80 | **$1,790.80** | $996.03 | $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**

| **2019-2020 Fiscal Year** | | **Single Party** | | | **Married/With Domestic Partner** | | | **Eligible Survivor** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CARRIER** | Observed and Assumed Election Percent | Monthly Premium* | Maximum Subsidy | **Subsidy** | Monthly Premium* | Maximum Subsidy | **Subsidy** | Monthly Premium* | Maximum Subsidy | **Subsidy** |
| Kaiser Senior Advantage HMO | **57.6%** | $262.47 | $262.47 | **$262.47** | $524.94 | $524.94 | **$524.94** | $262.47 | $262.47 | **$262.47** |
| Anthem Blue Cross Medicare Supplement | **31.4%** | $546.54 | $546.54 | **$546.54** | $1,088.27 | $1,066.16 | **$1,066.16** | $546.54 | $546.54 | **$546.54** |
| UHC Medicare Advantage Plan** | **11.0%** | $275.98 | $275.98 | **$275.98** | $547.14 | $547.14 | **$547.14** | $275.98 | $275.98 | **$275.98** |

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

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

| | Single Party | Married/With Domestic Partner | Eligible Survivor |
|---|---|---|---|
| **Under 65** – All Plans | $1,190.00 | $1,190.00 | $593.62 |
| **<u>Over 65</u>** | | | |
| Kaiser HMO | $203.27 | $406.54 | $203.27 |
| Blue Cross Medicare Supplement | $478.43 | $478.43 | $478.43 |
| UHC Medicare Advantage Plan | $219.09 | $433.93 | $219.09 |

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

Adjustments to per-capita costs (as shown on page 42) based on age, gender, and status, are as follows:

| | Retiree | | Spouse | |
|---|---|---|---|---|
| Age | Male | Female | Male | Female |
| 55 | 0.9019 | 0.9312 | 0.7098 | 0.8040 |
| 60 | 1.0711 | 1.0037 | 0.9503 | 0.9324 |
| 64 | 1.2288 | 1.0647 | 1.1996 | 1.0495 |
| 65 | 0.9187 | 0.7809 | 0.9187 | 0.7809 |
| 70 | 1.0648 | 0.8415 | 1.0648 | 0.8415 |
| 75 | 1.1475 | 0.9058 | 1.1475 | 0.9058 |
| 80+ | 1.2357 | 0.9766 | 1.2357 | 0.9766 |

**Spouse/Domestic Partner Coverage:** 60% of male and 35% of female retirees who receive a subsidy are assumed to be married or have a qualified domestic partner and elect dependent coverage. Of these covered spouses/domestic partners, 100% are assumed to continue coverage if the retiree predeceases the spouse/domestic partner.

**Spouse Age Difference:** Male retirees are assumed to be 4 years older than their female spouses/domestic partners. Female retirees are assumed to be 2 years younger than their male spouses/domestic partners.

**Participation:** Retiree Medical and Dental Coverage Participation:

| Service Range | Percent Covered* |
|---|---|
| 10 – 14 | 60% |
| 15 – 19 | 80% |
| 20 – 24 | 90% |
| 25 and Over | 95% |

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

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

**Health Care Cost Subsidy Trend Rates:**

**MEDICAL TRENDS FOR THE JUNE 30, 2019 VALUATION**

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

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

First Fiscal Year (July 1, 2019 through June 30, 2020)

| Plan | Anthem Blue Cross PPO, Under Age 65 | Anthem Blue Cross Medicare Supplement | Kaiser HMO, Under Age 65 | Kaiser Senior Advantage | Anthem Blue Cross HMO, Under 65 | UHC Medicare Advantage Plan |
|---|---|---|---|---|---|---|
| Trend to be applied to 2019-2020 Fiscal Year premium | 3.40% | 3.88% | 3.37% | 3.12% | 7.89% | 3.96% |

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

| | Trend (Approx.) | | | Trend (applied to calculate following year premium) | |
|---|---|---|---|---|---|
| Fiscal Year | Non-Medicare | Medicare | Calendar Year | Non-Medicare | Medicare |
| 2020-2021 | 6.62% | 6.12% | 2020 | 6.75%* | 6.25% |
| 2021-2022 | 6.37% | 5.87% | 2021 | 6.50% | 6.00% |
| 2022-2023 | 6.12% | 5.62% | 2022 | 6.25% | 5.75% |
| 2023-2024 | 5.87% | 5.37% | 2023 | 6.00% | 5.50% |
| 2024-2025 | 5.62% | 5.12% | 2024 | 5.75% | 5.25% |
| 2025-2026 | 5.37% | 4.87% | 2025 | 5.50% | 5.00% |
| 2026-2027 | 5.12% | 4.62% | 2026 | 5.25% | 4.75% |
| 2027-2028 | 4.87% | 4.50% | 2027 | 5.00% | 4.50% |
| 2028-2029 | 4.62% | 4.50% | 2028 | 4.75% | 4.50% |
| 2029 and later | 4.50% | 4.50% | 2029 | 4.50% | 4.50% |

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

** For example, the 6.75% assumption when applied to the 2020 non-Medicare medical premiums would provide the projected 2021 non-Medicare medical premiums. This trend would also be applied to the maximum medical subsidy, based on the non-Medicare Kaiser premium.*



Segal

| | |
|---|---|
| **Health Care Reform:** | As directed by LACERS, we have reflected in the current valuation the impact of potential excise tax imposed on high-cost health care plans by the Affordable Care Act (ACA) and related statutes on certain health plans in calculating the contribution rates for the employer. We understand that Statements No. 74 and No. 75 by the Governmental Accounting Standards Board (GASB) for financial reporting purposes require the inclusion of the excise tax in the liability. We have allocated the potential tax liability to the Plan and member in the same proportion as the proportion of the total medical premium paid by the Plan and member. |
| **Administrative Expenses:** | No administrative expenses were valued separately from the premium costs. |
| **Actuarial Methods:** | |
| **Actuarial Cost Method**: | Entry Age Cost Method, level percent of salary. |
| **Expected Remaining Service Lives:** | The average of the expected service lives of all employees is determined by:<br>• Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at zero percent interest.<br>• Setting the remaining service life to zero for each nonactive or retired member.<br>• Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members. |
| **Assumption Changes Since Prior Valuation:** | The trend used to project future Medicare Part B premiums was increased from 4.00% to 4.50%.<br>Starting premium costs and first year trends were updated to reflect 2020 calendar year premium data. |

5644097v5/05806.010

**BOARD** Meeting: 10/27/20
Item IX – B
Attachment 3

REPORT OF INDEPENDENT AUDITORS AND
SCHEDULES OF EMPLOYER ALLOCATIONS
AND PENSION AMOUNTS BY EMPLOYER

# LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
# RETIREMENT PLAN

June 30, 2019
(For employer reporting as of June 30, 2020)

MOSSADAMS

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MOSSADAMS

# Report of Independent Auditors

To the Audit Committee and Board of Administration
Los Angeles City Employees' Retirement System Retirement Plan
Los Angeles, California

## Report on the Schedules

We have audited the accompanying schedule of employer allocations and the total for all employers of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of Los Angeles City Employees' Retirement System Retirement Plan (the Plan) as of and for the year ended June 30, 2019, and the related notes.

### *Management's Responsibility for the Financial Statements*

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

### *Auditor's Responsibility*

Our responsibility is to express an opinion on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### *Opinion*

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating employers for the Plan as of and for the year ended June 30, 2019, in accordance with accounting principles generally accepted in the United States of America.

### *Other Matter*

The financial statements of Los Angeles City Employees' Retirement System (LACERS) as of and for the year ended June 30, 2019 were audited by other auditors. Their report, dated November 25, 2019, expressed an unmodified opinion on those financial statements.

### *Restriction on Use*

Our report is intended solely for the information and use of the Plan's management, LACERS Audit Committee, LACERS Board of Administration, and the Plan's sponsoring employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Moss Adams LLP

Los Angeles, California
October 9, 2020

# Los Angeles City Employees’ Retirement System
## Retirement Plan
### Schedule of Employer Allocations
### Year Ended June 30, 2019

| Employer | Total Employer Contributions | Employer Allocation Percentage |
|---|---|---|
| City | $ 395,373,858 | 82.591% |
| Airports | 65,667,006 | 13.717% |
| Harbor | 17,676,089 | 3.692% |
| | $ 478,716,953 | 100.000% |

See accompanying notes.

# Los Angeles City Employees' Retirement System
# Retirement Plan
## Schedule of Pension Amounts by Employer
## Year Ended June 30, 2019

| Employer | Net Pension Liability | Deferred Outflows of Resources: Difference Between Expected and Actual Experience | Deferred Outflows of Resources: Changes of Assumptions | Deferred Outflows of Resources: Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Deferred Outflows of Resources: Total Deferred Outflows of Resources | Deferred Inflows of Resources: Difference Between Expected and Actual Experience | Deferred Inflows of Resources: Net Difference Between Expected and Actual Investment Experience | Deferred Inflows of Resources: Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Deferred Inflows of Resources: Total Deferred Inflows of Resources | Pension Expense: Proportionate Share of Plan Pension Expense | Pension Expense: Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between employer contribution and Proportionate Share of Contributions | Pension Expense: Net Pension Expense |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City | $ 4,937,107,456 | $ 73,651,504 | $ 365,133,057 | $ 14,379,350 | $ 453,163,911 | $ 148,630,889 | $ 40,749,261 | $ 380,339 | $ 189,760,489 | $ 699,073,111 | $ 8,733,983 | $ 707,807,094 |
| Airports | 819,996,210 | 12,232,659 | 60,644,360 | 2,351,523 | 75,228,542 | 24,685,865 | 6,767,979 | 5,607,931 | 37,061,775 | 116,107,925 | (3,527,978) | 112,579,947 |
| Harbor | 220,724,636 | 3,292,758 | 16,324,105 | - | 19,616,863 | 6,644,883 | 1,821,789 | 10,742,603 | 19,209,275 | 31,253,656 | (5,206,005) | 26,047,651 |
| | $ 5,977,828,302 | $ 89,176,921 | $ 442,101,522 | $ 16,730,873 | $ 548,009,316 | $ 179,961,637 | $ 49,339,029 | $ 16,730,873 | $ 246,031,539 | $ 846,434,692 | $ - | $ 846,434,692 |

See accompanying notes.

**Note 1 – Plan Description**

The Los Angeles City Employees' Retirement System (LACERS) is under the exclusive management and control of its Board of Administration (the Board), whose authority is granted by statute in Article XVI, Section 17 of the California State Constitution, and Article XI of the Los Angeles City Charter. LACERS is a department of the Municipality of the City of Los Angeles (the City). LACERS financial statements are included in the City's comprehensive annual financial report as a pension trust fund.

The Los Angeles City Employees' Retirement System Retirement Plan (the Plan) is a single-employer defined benefit retirement plan administered by LACERS that provides for service and disability retirement benefits, as well as death benefits. Changes to the benefit terms require approval by the City Council.

The Plan covers all full-time personnel and department-certified part-time employees of the City, except for sworn employees of the fire and police departments, Department of Water and Power employees, elected officials who elected to participate in an alternative defined contribution plan, certain port police officers of the Harbor Department, and certain airport peace officers who elected to opt out of the Plan.

As of June 30, 2019, the Plan's membership consisted of the following:

| | |
|---|---|
| Retirees and beneficiaries currently receiving benefits | 20,034 |
| Terminated vested members not receiving benefits | 8,588 |
| Active members | 26,632 |
| Total | 55,254 |

**Note 2 – Summary of Significant Accounting Policies**

**Basis of Accounting**

The schedules are presented in accordance with the standards issued by the Governmental Accounting Standards Board (GASB), which is the standard setting body for establishing accounting principles generally accepted in the United States of America for governmental entities. As prescribed by GASB, the schedules are reported using the economic resources measurement focus and the accrual basis of accounting.

Employer and member contributions are recognized as revenues when due, pursuant to formal commitments, as well as statutory and contractual requirements that coincide with the period in which employee services are performed. Deductions from the Plan's assets are recorded when corresponding liabilities are incurred, regardless of when paid. Benefits and refunds are recognized when due and are payable in accordance with LACERS policy.

**Note 2 – Summary of Significant Accounting Policies (continued)**

For purposes of measuring net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense, information about the fiduciary net position of the Plan and additions to and deductions from the Plan's fiduciary net position have been determined on the same basis as they are reported by the Plan. For this purpose, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

**Employer Contributions**

LACERS funding policy under Article XI Sections 1158 and 1160 of the City Charter provides for periodic employer contributions at actuarially-determined rates that, expressed as percentages of annual covered payroll, are sufficient to accumulate the required assets to pay benefits when due. Based on actual payroll, the effective rate for the Plan was 22.71% during the year ended June 30, 2019.

**Employer Allocations**

For the presentation of the schedule of employer allocations and schedule of pension amounts by employer (collectively, the Schedules), the City has requested the allocation of pension amounts among three individual entities: City, Airports, and Harbor (the Employers). The Schedules present amounts that are elements of the financial statements of the Plan or of the Employers. The Schedules do not purport to be a complete presentation of the financial position or changes in financial position of LACERS or the Employers.

The Employers are required to recognize their proportionate share of the collective net pension liability, collective deferred outflows of resources, collective deferred inflows of resources and collective pension expense. The employer allocation percentages presented in the schedule of employer allocations and applied to amounts presented in the schedule of pension amounts by employer are based on the ratio of each employer's contribution to the LACERS total employer contributions during the measurement period from July 1, 2018 through June 30, 2019.

**Use of Estimates**

The preparation of the Schedules in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain amounts and disclosures. Actual results could differ from those estimates.

**Note 3 – Net Pension Liability**

The actuarial valuation and measurement of the net pension liability and other pension amounts was performed by the Plan's independent actuary as of June 30, 2019. The components of the Plan's net pension liability are summarized as follows:

| | |
|---|---|
| Total pension liability | $ 20,793,421,143 |
| Plan fiduciary net position | (14,815,592,841) |
| Employers' net pension liability | $ 5,977,828,302 |
| Plan fiduciary net position as a percentage of the total pension liability | 71.25% |

**Note 4 – Actuarial Assumptions**

The total pension liability was determined based on the June 30, 2019 actuarial valuation using the following actuarial assumptions:

| | |
|---|---|
| Valuation Date | June 30, 2019 |
| Investment Rate of Return | 7.25% |
| Projected Salary Increases | 3.90% to 10.00% based on years of service, including inflation |
| Inflation | 3.00% |
| Cost-of-Living Adjustments | Tier 1: 3.00%, Tier 3: 2.00%, actual increases are contingent upon Consumer Price Index (CPI) increases with a 3.00% maximum for Tier 1 and a 2.00% maximum for Tier 3. |
| Mortality | Active members: 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. |
| | Healthy retirees and beneficiaries: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) projected generationally with two-dimensional mortality improvement scale MP-2017. |
| | Disabled retirees: Headcount-Weighted RP-2014 Disabled Retiree Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017. |

For pre-retirement mortality, withdrawal rates, disability rates, and service retirement rates, the rates vary by age, gender, and/or service.

**Note 4 – Actuarial Assumptions (continued)**

**Long-Term Expected Rate of Return by Asset Class**

The long-term expected rate of return on the Plan's 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, used in the derivation of the long-term expected investment rate of return assumption are summarized as follows:

| Investment Asset Class | Target Allocation | Long-Term Expected Real Rate of Return |
|---|---|---|
| U.S. large cap equity | 14.00% | 5.32% |
| U.S. small cap equity | 5.00% | 6.07% |
| Developed international large cap equity | 17.00% | 6.67% |
| Developed international small cap equity | 3.00% | 7.14% |
| Emerging market equity | 7.00% | 8.87% |
| Core bond | 13.75% | 1.04% |
| High yield bond | 2.00% | 3.09% |
| Bank loan | 2.00% | 3.00% |
| TIPS | 3.50% | 0.97% |
| Emerging market debt (external) | 4.50% | 3.44% |
| Real estate | 7.00% | 4.68% |
| Cash | 1.00% | 0.01% |
| Commodities | 1.00% | 3.36% |
| Additional public real assets | 1.00% | 4.76% |
| Real estate investment trust (REIT) | 0.50% | 5.91% |
| Private debt | 3.75% | 5.50% |
| Private equity | 14.00% | 8.97% |
| | 100.00% | |

**Note 4 – Actuarial Assumptions (continued)**

**Discount Rate**

The discount rate used to measure the total pension liability was 7.25% as of June 30, 2019. The projection of cash flows used to determine the discount rate assumed that 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 members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future members and their beneficiaries, as well as projected contributions from future members, are not included. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current members. Therefore, the long-term expected rate of return on the Plan’s investments was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2019.

**Sensitivity of the Net Pension Liability**

The following presents the net pension liability, calculated using the discount rate of 7.25%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1% point lower (6.25%) or 1% point higher (8.25%) than the current rate:

| 1% Decrease (6.25%) | Current Discount Rate (7.25%) | 1% Increase (8.25%) |
|---|---|---|
| $ 8,797,245,998 | $ 5,977,828,302 | $ 3,652,816,107 |

The Employers should multiply their employer allocation percentage by these amounts to calculate their portion of the sensitivity amounts.

**Note 5 – Pension Expense**

The collective pension expense includes changes in the collective net pension liability, projected earnings on pension plan investments, and the amortization of deferred outflows of resources for the current period. Components of pension expense for the year ended June 30, 2019 are summarized as follows:

| | |
|---|---|
| Service cost | $ 370,409,073 |
| Interest on the total pension liability | 1,439,660,906 |
| Expensed portion of current period difference between actual and expected experience | (9,262,624) |
| Member contributions | (237,087,419) |
| Expected return on investments | (1,040,023,249) |
| Expensed portion of current period difference between actual and expected return on investments | 48,134,508 |
| Administrative expenses | 19,600,116 |
| Recognition of beginning of year deferred balances | 255,003,381 |
| Net pension expense | $ 846,434,692 |

**Note 6 – Average Remaining Service Life**

Changes arising from differences between expected and actual experience and from changes in actual assumptions are recognized in net pension expense over the average remaining service life of all employees provided with benefits through the pension plan (active and inactive). These differences are considered on a pooled basis, rather than an individual basis, in order to reflect the expected remaining service life of the entire pool of employees, with the understanding that inactive employees have no remaining service period. As of June 30, 2019, the average of the expected remaining service lives of all employees as calculated by the Plan's independent actuaries was 4.97 years.

**Note 7 – Subsequent Event**

During March 2020, the World Health Organization classified a new strain of coronavirus that was spreading globally (COVID-19) as a pandemic, triggering volatility in financial markets and a negative impact on the global economy. The LACERS Board of Administration and the Plan's management are monitoring the duration and potential impact of COVID-19 on the Plan's investment values and the actuarial assumptions used in the measurement of the Plan's net pension liability and other pension amounts. The full impact of the COVID-19 outbreak continues to evolve as of the date of this report.

**BOARD** Meeting: 10/27/20
Item IX – B
Attachment 3

REPORT OF INDEPENDENT AUDITORS AND
SCHEDULES OF EMPLOYER ALLOCATIONS
AND OPEB AMOUNTS BY EMPLOYER

# LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM POSTEMPLOYMENT HEALTH CARE PLAN

June 30, 2019
(For employer reporting as of June 30, 2020)

MOSSADAMS

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MOSSADAMS

# Report of Independent Auditors

To the Audit Committee and Board of Administration
Los Angeles City Employees' Retirement System Postemployment Health Care Plan
Los Angeles, California

## Report on the Schedules

We have audited the accompanying schedule of employer allocations and the total for all employers of the columns titled net OPEB liability, total deferred outflows of resources, total deferred inflows of resources, and total OPEB expense (specified column totals) included in the accompanying schedule of OPEB amounts by employer of the Los Angeles City Employees' Retirement System Postemployment Health Care Plan (the Plan) as of and for the year ended June 30, 2019, and the related notes.

### *Management's Responsibility for the Schedules*

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of schedules that are free from material misstatement, whether due to fraud or error.

### *Auditor's Responsibility*

Our responsibility is to express an opinion on the schedule of employer allocations and the specified column totals included in the schedule of OPEB amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of OPEB amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of OPEB amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified column totals included in the schedule of OPEB amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and specified column totals included in the schedule of OPEB amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule of OPEB amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### *Opinion*

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net OPEB liability, total deferred outflows of resources, total deferred inflows of resources, and total OPEB expense for the total of all participating employers for the Plan as of and for the year ended June 30, 2019, in accordance with accounting principles generally accepted in the United States of America.

### *Other Matter*

The financial statements of Los Angeles City Employees' Retirement System (LACERS) as of and for the year ended June 30, 2019 were audited by other auditors. Their report, dated November 25, 2019, expressed an unmodified opinion on those financial statements.

### *Restriction on Use*

Our report is intended solely for the information and use of the Plan's management, LACERS Audit Committee, LACERS Board of Administration, and the Plan's sponsoring employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Moss Adams LLP

Los Angeles, California
October 9, 2020

# Los Angeles City Employees' Retirement System
## Postemployment Health Care Plan
### Schedule of Employer Allocations
### Year Ended June 30, 2019

| Employer | | Total Employer Contributions | Employer Allocation Percentage |
|---|---|---|---|
| City | $ | 89,718,772 | 83.129% |
| Airports | | 14,263,712 | 13.216% |
| Harbor | | 3,944,465 | 3.655% |
| | $ | 107,926,949 | 100.000% |

See accompanying notes.

# Los Angeles City Employees' Retirement System
# Postemployment Health Care Plan
## Schedule of OPEB Amounts by Employer
## Year Ended June 30, 2019

| | | Deferred Outflows of Resources | | | | Deferred Inflows of Resources | | | | OPEB Expense | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Employer | Net OPEB Liability | Differences Between Expected and Actual Experience | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proprtionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on OPEB Plan Investments | Changes in Proportion and Differences Between Employer Contributions and Proprtionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Plan OPEB Expenses | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer's Contribution and Proportionate Share of Contributions | Net OPEB Expense |
| City | $ 434,101,068 | $ 8,673,187 | $ 91,571,174 | $ 4,190,912 | $ 104,435,273 | $ 97,711,522 | $ 81,038,475 | $ - | $ 178,749,997 | $ 65,877,272 | $ 926,065 | $ 66,803,337 |
| Airports | 69,014,460 | 1,378,885 | 14,558,211 | - | 15,937,096 | 15,534,419 | 12,883,697 | 2,863,759 | 31,281,875 | 10,473,332 | (626,865) | 9,846,467 |
| Harbor | 19,085,153 | 381,314 | 4,025,906 | - | 4,407,220 | 4,295,865 | 3,562,838 | 1,327,153 | 9,185,856 | 2,896,278 | (299,200) | 2,597,078 |
| | $ 522,200,681 | $ 10,433,386 | $ 110,155,291 | $ 4,190,912 | $ 124,779,589 | $ 117,541,806 | $ 97,485,010 | $ 4,190,912 | $ 219,217,728 | $ 79,246,882 | $ - | $ 79,246,882 |

See accompanying notes.

**Note 1** – **Plan Description**

The Los Angeles City Employees' Retirement System (LACERS) is under the exclusive management and control of its Board of Administration (the Board), whose authority is granted by statute in Article XVI, Section 17 of the California State Constitution, and Article XI of the Los Angeles City Charter. LACERS is a department of the Municipality of the City of Los Angeles (the City). LACERS financial statements are included in the City's comprehensive annual financial report as a pension trust fund.

The Los Angeles City Employees’ Retirement System Postemployment Health Care Plan (the Plan) is a plan within the single-employer defined benefit retirement plan administered by LACERS. The Plan provides other postemployment health care benefits (OPEB) to eligible retirees and their eligible spouses or domestic partners. Changes to the benefit terms require approval by the City Council.

The Plan covers all personnel who participate in the LACERS defined benefit retirement plan regardless of their membership tier. Eligibility in the Plan requires the member 1) be at least age 55; 2) have at least 10 complete years of service with LACERS; and 3) be enrolled in a system-sponsored medical or dental plan or be a participant in the Medical Premium Reimbursement Program (MPRP). The health care plans available include medical, dental, and vision benefits, or participation in the MPRP if the member resides in an area not covered by the available medical plans.

As of June 30, 2019, the Plan’s membership consisted of the following:

| | |
|---|---|
| Retirees or surviving spouses currently receiving benefits | 15,791 |
| Terminated vested members not receiving benefits | 1,474 |
| Active members | 26,632 |
| Total | 43,897 |

**Note 2** – **Summary of Significant Accounting Policies**

**Basis of Accounting**

The schedules are presented in accordance with the standards issued by the Governmental Accounting Standards Board (GASB), which is the standard setting body for establishing accounting principles generally accepted in the United States of America for governmental entities. As prescribed by GASB, the schedules are reported using the economic resources measurement focus and the accrual basis of accounting.

Employer contributions are recognized as revenues when due, pursuant to formal commitments, as well as statutory and contractual requirements that coincide with the period in which employee services are performed. Deductions from the Plan’s assets are recorded when corresponding liabilities are incurred, regardless of when paid. Benefits are recognized when due and are payable in accordance with LACERS policy.

**Note 2** – **Summary of Significant Accounting Policies (continued)**

For purposes of measuring net OPEB liability, deferred outflows of resources, deferred inflows of resources, and OPEB expense, information about the fiduciary net position of the Plan and additions to and deductions from the Plan's fiduciary net position have been determined on the same basis as they are reported by the Plan. For this purpose, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

**Employer Contributions**

LACERS funding policy under Article XI Sections 1158 and 1160 of the City Charter provides for periodic employer contributions at actuarially-determined rates that, expressed as percentages of annual covered payroll, are sufficient to accumulate the required assets to pay benefits when due. Based on actual payroll, the effective rate for the Plan was 5.12% during the year ended June 30, 2019.

**Employer Allocations**

For the presentation of the schedule of employer allocations and schedule of OPEB amounts by employer (collectively, the Schedules), the City has requested the allocation of pension amounts among three individual entities: City, Airports, and Harbor (the Employers). The Schedules present amounts that are elements of the financial statements of the Plan or of the Employers. The Schedules do not purport to be a complete presentation of the financial position or changes in financial position of LACERS or the Employers.

The Employers are required to recognize their proportionate share of the collective net OPEB liability, collective deferred outflows of resources, collective deferred inflows of resources and collective OPEB expense. The employer allocation percentages presented in the schedule of employer allocations and applied to amounts presented in the schedule of OPEB amounts by employer are based on the ratio of each employer's contribution to the LACERS total employer contributions during the measurement period from July 1, 2018 through June 30, 2019.

**Use of Estimates**

The preparation of the Schedules in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain amounts and disclosures. Actual results could differ from those estimates.

### Note 3 – Net OPEB Liability

The actuarial measurement of the net OPEB liability and other OPEB amounts was performed by LACERS' independent actuary as of June 30, 2019. The components of the Plan's net OPEB liability at June 30, 2019 are summarized as follows:

| | |
|---|---|
| Total OPEB liability | $ 3,334,298,548 |
| Plan fiduciary net position | (2,812,097,867) |
| Employers' net OPEB liability | $ 522,200,681 |
| Plan fiduciary net position as a percentage of the total OPEB liability | 84.34% |

### Note 4 – Actuarial Assumptions

The total OPEB liability was determined based on the June 30, 2019 actuarial valuation using the following actuarial assumptions:

| | |
|---|---|
| Valuation date | June 30, 2019 |
| Investment rate of return | 7.25% |
| Projected salary increases | 3.90% to 10.00% based on years of service, including inflation |
| Inflation | 3.00% |
| Cost-of-living adjustments | Tier 1: 3.00%, Tier 3: 2.00%, actual increases are contingent upon Consumer Price Index (CPI) increases with a 3.00% maximum for Tier 1 and a 2.00% maximum for Tier 3. |
| Medical cost trend rates | 6.62% graded down to 4.5% over 9 years for Non-Medicare Medical Plan; 6.12% graded down to 4.5% over 7 years for Medicare Medical Plan; and 4.5% for Medicare Part B. |
| Mortality | Healthy retirees and beneficiaries: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) projected generationally with two-dimensional mortality improvement scale MP-2017. |
| | Disabled retirees: Headcount-Weighted RP-2014 Disabled Retiree Mortality Table (separate tables for males and females) projected generationally with the two-dimensional mortality improvement scale MP-2017. |

**Note 4 – Actuarial Assumptions (continued)**

For pre-retirement mortality, withdrawal rates, disability rates, and service retirement rates, the rates vary by age, gender, and/or service.

**Long-Term Expected Rate of Return by Asset Class**

The long-term expected rate of return on the Plan's 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, used in the derivation of the long-term expected investment rate of return assumption are summarized in the table below:

| Investment Asset Class | Target Allocation | Long-Term Expected Real Rate of Return |
|---|---|---|
| U.S. large cap equity | 14.00% | 5.32% |
| U.S. small cap equity | 5.00% | 6.07% |
| Developed international large cap equity | 17.00% | 6.67% |
| Developed international small cap equity | 3.00% | 7.14% |
| Emerging market equity | 7.00% | 8.87% |
| Core bond | 13.75% | 1.04% |
| High yield bond | 2.00% | 3.09% |
| Bank loan | 2.00% | 3.00% |
| TIPS | 3.50% | 0.97% |
| Emerging market debt (external) | 4.50% | 3.44% |
| Real estate | 7.00% | 4.68% |
| Cash | 1.00% | 0.10% |
| Commodities | 1.00% | 3.36% |
| Additional public real assets | 1.00% | 4.76% |
| Real estate investment trust (REIT) | 0.50% | 5.91% |
| Private debt | 3.75% | 5.50% |
| Private equity | 14.00% | 8.97% |
| | 100.00% | |

**Discount Rate**

The discount rate used to measure the total OPEB liability was 7.25% as of June 30, 2019. 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 GASB Statement No. 74, are expected to be sufficient to make all benefit payments to current members. Therefore, the long-term expected rate of return on the Plan's investments was applied to all periods of projected benefit payments to determine the total OPEB liability as of June 30, 2019.

**Note 4 – Actuarial Assumptions (continued)**

**Sensitivity of the Net OPEB Liability**
The following presents the net OPEB liability, calculated using the discount rate of 7.25%, as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1-percent lower (6.25%) or 1-percent higher (8.25%) than the current rate:

| 1% Decrease (6.25%) | Current Discount Rate (7.25%) | 1% Increase (8.25%) |
|---|---|---|
| $ 1,000,087,555 | $ 522,200,681 | $ 131,811,191 |

The following presents the net OPEB liability, calculated using the current health trend rates as of June 30, 2019, as well as what the net OPEB liability would be if it were calculated using a health cost trend rate that is 1-percentage-point lower or 1-percentage-point higher than the health cost trend rates used:

| 1% Decrease | Current Trend Rate | 1% Increase |
|---|---|---|
| $ 80,855,379 | $ 522,200,681 | $ 1,101,306,810 |

The Employers should multiply their employer allocation percentage by the amounts to calculate their portion of the sensitivity amounts.

**Note 5 – OPEB Expense**

The collective OPEB expense includes changes in the collective net OPEB liability, projected earnings on the Plan's investments, and the amortization of deferred outflows of resources for the current period. Components of OPEB expense for the year ended June 30, 2019 are summarized as follows:

| | |
|---|---|
| Service cost | $ 74,477,507 |
| Interest on the total pension liability | 236,677,675 |
| Expensed portion of current period changes of assumptions | 5,465,330 |
| Expensed portion of current period difference between actual and expected experience | (21,586,599) |
| Expected return on investments | (196,508,822) |
| Expensed portion of current period difference between actual and expected return on investments | 6,007,864 |
| Administrative expenses | 5,098,795 |
| Recognition of beginning of year deferred balances | (30,384,868) |
| Net OPEB expense | $ 79,246,882 |

**Note 6 – Average Remaining Service Life**

Changes arising from differences between expected and actual experience and from changes in actual assumptions are recognized in net OPEB expense over the average remaining service life of all employees provided with benefits through the Plan. These differences are considered on a pooled basis, rather than an individual basis, in order to reflect the expected remaining service life of the entire pool of employees, with the understanding that inactive employees have no remaining service period. As of June 30, 2019, the average of the expected remaining service lives of all employees as calculated by the Plan's independent actuaries was 6.21 years.

**Note 7 – Subsequent Event**

During March 2020, the World Health Organization classified a new strain of coronavirus that was spreading globally (COVID-19) as a pandemic, triggering volatility in financial markets and a negative impact on the global economy. The LACERS Board of Administration and the Plan's management are monitoring the duration and potential impact of COVID-19 on the Plan's investment values and the actuarial assumptions used in the measurement of the Plan's net OPEB liability and other OPEB amounts. The full impact of the COVID-19 outbreak continues to evolve as of the date of this report.