ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
BOARD OF RETIREMENT
2223 E. WELLINGTON AVENUE, SUITE 100
SANTA ANA, CALIFORNIA

REGULAR MEETING
Monday, June 15, 2020
9:30 A.M.

Pursuant to Executive Order N-29-20, certain provisions of the Brown Act are suspended due to a State of Emergency in response to the COVID-19 pandemic. Consistent with the Executive Order, this meeting will be conducted by video/teleconference only. None of the locations from which the Board members will participate will be open to the public.

Members of the public who wish to observe and/or participate in the meeting may do so via the Zoom app or via telephone. Members of the public who wish to provide comment during the meeting may do so by "raising your hand" in the Zoom app, or if joining by telephone, by pressing * 9 on your telephone keypad.

OCERS Zoom Video/Teleconference information	
Join Using Zoom App (Video & Audio) https://ocers.zoom.us/j/91736415861 **Meeting ID: 917 3641 5861** **Password: 204534** Go to https://www.zoom.us/download to download Zoom app before meeting Go to https://zoom.us to connect online using any browser.	**Join by Telephone (Audio Only)** Dial by your location +1 669 900 6833 US (San Jose) +1 346 248 7799 US (Houston) +1 253 215 8782 US +1 301 715 8592 US +1 312 626 6799 US (Chicago) +1 929 436 2866 US (New York) **Meeting ID: 917 3641 5861** **Password: 204534**
A Zoom Meeting Participant Guide is available on OCERS website Board & Committee meetings page	

AGENDA

The Orange County Board of Retirement welcomes you to this meeting. This agenda contains a brief general description of each item to be considered. The Board of Retirement may take action on any item included in the following agenda; however, except as otherwise provided by law, no action shall be taken on any item not appearing on the agenda. The Board of Retirement may consider matters included on the agenda in any order, and not necessarily in the order listed.

CALL MEETING TO ORDER AND ROLL CALL

PUBLIC COMMENTS

At this time, members of the public may comment on (1) matters not included on the agenda, provided that the matter is within the subject matter jurisdiction of the Board; and (2) any matter appearing on the Consent Agenda**.** Members of the public who wish to provide comment at this time may do so by "raising your hand" in the Zoom app, or if joining by telephone, by pressing * 9 on your telephone keypad. When addressing the Board, please state your name for the record prior to providing your comments. Speakers will be limited to three (3) minutes.

In addition, public comment on matters listed on this agenda will be taken at the time the item is addressed.

CONSENT AGENDA

All matters on the Consent Agenda are to be approved by one action unless a Board Member requests separate action on a specific item.

BENEFITS

C-1 OPTION 4 RETIREMENT ELECTION

Recommendation: Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

- MICHAEL BLAWN

ADMINISTRATION

C-2 BOARD MEETING MINUTES

Regular Board Meeting Minutes May 18, 2020

Recommendation: Approve minutes.

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CONSENT ITEMS: DISABILITY/MEMBER BENEFITS AGENDA

9:30 AM

AGENDA

NOTE: WHEN CONSIDERING DISABILITY RETIREMENT APPLICATIONS OR MEMBER APPEALS OF BENEFIT OR DISABILITY RETIREMENT DETERMINATIONS, THE BOARD MAY ADJOURN TO CLOSED SESSION TO DISCUSS MATTERS RELATING TO THE MEMBER'S APPLICATION OR APPEAL, PURSUANT TO

GOVERNMENT CODE SECTIONS 54957 OR 54956.9. IF THE MATTER IS A DISABILITY APPLICATION UNDER SECTION 54957, THE MEMBER MAY REQUEST THAT THE DISCUSSION BE IN PUBLIC.

OPEN SESSION

CONSENT ITEMS

All matters on the Consent Agenda are to be approved by one action unless a Board member requires separate action on a specific item. If separate action is requested, the item will be discussed during agenda item DA-1.

DC-1: TABETHA BLACK
Deputy Sheriff I, Orange County Sheriff's Department

Recommendation: The Disability Committee recommends that the Board deny service connected disability retirement due to insufficient evidence of job causation. (Safety Member)

DC-2: DEBORAH BORBOA
Deputy Sheriff I, Orange County Sheriff's Department

Recommendation: The Disability Committee recommends that the Board deny service and non-service connected disability retirement due to the member's failure to cooperate. (Safety Member)

DC-3: CHRISTOPHER EMERSON
Deputy Sheriff II, Orange County Sheriff's Department

Recommendation: The Disability Committee recommends that the Board grant service connected disability retirement with an effective date of the day after the last day of regular compensation. (Safety Member)

DC-4: BRENT HALE
Coach Operator, Orange County Transportation Authority

Recommendation: The Disability Committee recommends that the Board grant service connected disability retirement with an effective date of June 24, 2018. (General Member)

DC-5: JOSEPH LEOS
Firefighter, Orange County Fire Authority

Recommendation: The Disability Committee recommends that the Board grant service connected disability retirement with an effective date of July 17, 2019. (Safety Member)

DC-6: WILLIAM LEVERENZ
Fire Captain, Orange County Fire Authority

Recommendation: The Disability Committee recommends that the Board grant service connected disability retirement with an effective date of December 31, 2017. (Safety Member)

CLOSED SESSION

(Government Code sections 54957 and 54956.9)

The Board will adjourn to Closed Session pursuant to Government Code sections 54957 or 54956.9 to discuss matters relating to member applications or appeals. The member may request that the discussion relating to his or her application or appeal take place in Open Session.

ACTION ITEMS

DA-1: INDIVIDUAL ACTION ON ANY ITEM TRAILED FROM THE CONSENT AGENDA

DISABILITY/MEMBER BENEFITS AGENDA

DA-2: DISABILITY APPEAL – KIMBERLY CORMANY

Recommendation: Approve and adopt the findings and recommendations of the Referee/Hearing Officer as set forth in the Summary of Evidence, Findings of Fact, Conclusions of Law, and Recommendations dated April 20, 2020 (Recommendations), and deny the Applicant's application for both service and non-service connected disability retirement.

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OPEN SESSION

Report out of actions taken in Closed Session.

ACTION ITEMS

NOTE: Public comment on matters listed in this agenda will be taken at the time the item is addressed, prior to the Board's discussion of the item. **Members of the public who wish to provide comment in connection with any matter listed in this agenda may do so by "raising your hand" in the Zoom app, or if joining by telephone, by pressing * 9, at the time the item is called.**

A-1 INDIVIDUAL ACTION ON ANY ITEM TRAILED FROM THE CONSENT AGENDA

A-2 DECEMBER 31, 2019 ACTUARIAL VALUATION
Presentation by Andy Yeung, Segal Consulting

Recommendation: Approve the Actuarial Valuation and Review as of December 31, 2019 and adopt contribution rates for Fiscal Year 2021 – 2022 as recommended by Segal Consulting.

A-3 2019 AUDITED FINANCIAL STATEMENTS AND COMPREHENSIVE ANNUAL FINANCIAL REPORTS
Presentation by Brenda Shott, Assistant Chief Executive Officer, Internal Operations, and Tracy Bowman, Director of Finance, OCERS

Recommendation: Approve the following recommendations presented to the Audit Committee during a meeting held on June 4, 2020:

1. Approve OCERS' audited financial statements for the year ended December 31, 2019
2. Direct staff to finalize OCERS' 2019 Comprehensive Annual Financial Report (CAFR)
3. Approve the Governmental Accounting Standards Board (GASB) Statement 67 Actuarial Valuation as of December 31, 2019
4. Receive and file Macias, Gini & O'Connell LLP's (MGO) "OCERS' Report to the Audit Committee for the Year Ended December 31, 2019" and their "Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*"

A-4 GASB 68 VALUATION AND AUDIT REPORT
Presentation by Brenda Shott, Assistant Chief Executive Officer, Internal Operations, and Tracy Bowman, Director of Finance, OCERS

Recommendation: Approve the following recommendations from the Audit Committee during a meeting held on June 4, 2020:

1. Approve OCERS' audited Schedule of Allocated Pension Amounts by Employer as of and for the Year Ended December 31, 2019.
2. Approve the Governmental Accounting Standards Board (GASB) Statement 68 Actuarial Valuation as of December 31, 2019 for distribution to employers.

A-5 SUSPENSION OF ADMINISTRATIVE HEARINGS INVOLVING THE ISSUE OF THE APPLICATION OF THE DISABILITY OFFSET UNDER GOVERNMENT CODE SECTION 31838.5
Presentation by Gina M. Ratto, General Counsel, OCERS

Recommendation: Pursuant to the Board's retained authority under the Board's Adjudication Policy and Administrative Hearing Rules, ***order*** that all pending administrative hearings and administrative hearings requested in the future involving the issue of the application of the disability offset under Government Code section 31838.5 be suspended pending a final decision in pending litigation captioned, Nicholas Casson v. OCERS, Orange County Superior Court, Case No. 30-2020-01140757-CU-WM-CJC.

INFORMATION ITEMS

I-1 MEMBER MATERIALS DISTRIBUTED
Written Report

Application Notices	June 15, 2020
Death Notices	June 15, 2020

I-2 **COMMITTEE MEETING MINUTES**
- April 20, 2020 Audit Committee Minutes

I-3 **CEO FUTURE AGENDAS AND 2020 OCERS BOARD WORK PLAN**
Written Report

I-4 **QUIET PERIOD – NON-INVESTMENT CONTRACTS**
Written Report

I-5 **BOARD COMMUNICATIONS**
Written Report

I-6 **STATE AND FEDERAL LEGISLATIVE UPDATE**
Written Report

I-7 **2020 ANNUAL BUSINESS PLAN PROGRESS – MID YEAR REIVEW**
Written Report

I-8 **OCERS 2020-2022 STRATEGIC PLAN PROGRESS – MID YEAR REVIEW**
Written Report

I-9 **UPDATE ON OCERS' APPLICATION TO SERVICEMARK OCERS' NAME AND LOGO**
Presentation by Manuel Serpa, Staff Attorney, OCERS

I-10 **2020 STRATEGIC PLANNING WORKSHOP – PROPOSED FORMAT AND AGENDA TOPICS**
Presentation by Steve Delaney, Chief Executive Officer, OCERS

I-11 **COVID-19 UPDATE**
Presentation by Steve Delaney, Chief Executive Officer, OCERS

I-12 **DISCUSSION OF SENSITIVITY ANALYSIS OF ALTERNATIVE ECONOMIC ASSUMPTIONS**
Presentation by Andy Yeung, Segal Consulting

*** * * * * END OF INFORMATION ITEMS AGENDA * * * * ***

CLOSED SESSION

E-1 **CONFERENCE REGARDING LITIGATION THAT HAS BEEN INITIATED**
(GOVERNMENT CODE SECTION 54956.9(d)(1))
Nicholas Casson v. OCERS, California Superior Court, Orange County (Case No. 30-2020-01140757-CU-WM-CJC)

Adjourn pursuant to Government Code section 54956.9(d)(1)

Recommendation: Take appropriate action.

BOARD MEMBER COMMENTS

CHIEF EXECUTIVE OFFICER/STAFF COMMENTS

COUNSEL COMMENTS

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ADJOURNMENT: (IN MEMORY OF THE ACTIVE MEMBERS, RETIRED MEMBERS, AND SURVIVING SPOUSES WHO PASSED AWAY THIS PAST MONTH)

NOTICE OF NEXT MEETINGS

INVESTMENT COMMITTEE MEETING
June 24, 2020
9:30 A.M.

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
2223 E. WELLINGTON AVENUE, SUITE 100
SANTA ANA, CA 92701

DISABILITY COMMITTEE MEETING
July 20, 2020
8:30 A.M.

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
2223 E. WELLINGTON AVENUE, SUITE 100
SANTA ANA, CA 92701

REGULAR BOARD MEETING
July 20, 2020
9:30 A.M.

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
2223 E. WELLINGTON AVENUE, SUITE 100
SANTA ANA, CA 92701

All supporting documentation is available for public review in the retirement office during regular business hours, 8:00 a.m. – 5:00 p.m., Monday through Thursday and 8:00 a.m. – 4:30 p.m. on Friday.

It is OCERS' intention to comply with the Americans with Disabilities Act ("ADA") in all respects. If, as an attendee or participant at this meeting, you will need any special assistance beyond that normally provided, OCERS will attempt to accommodate your needs in a reasonable manner. Please contact OCERS via email at adminsupport@ocers.org or call 714-558-6200 as soon as possible prior to the meeting to tell us about your needs and to determine if accommodation is feasible. We would appreciate at least 48 hours' notice, if possible. Please also advise us if you plan to attend meetings on a regular basis.

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Adina Bercaru, Member Services Manager

SUBJECT: **OPTION 4 RETIREMENT ELECTION – MICHAEL BLAWN**

Recommendation

Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

Background/Discussion

This member elected Option 4 as the benefit payment option for his service retirement allowance as required by his Domestic Relations Order (DRO), effective March 30, 2020. The Orange County Employees Retirement System (OCERS) was joined in the member's dissolution of marriage and under the terms of the DRO, the member's ex-spouse was awarded a lifetime continuance as a percentage of the member's allowance.

The approval of Option 4 will not increase OCERS liability because the cost of this Option 4 benefit is proportional to the cost of the other benefit plans. Segal Consulting has calculated the member's monthly allowance as indicated in the attached letter, as well as the allowance payable to the member's ex-spouse and the current spouse's continuance (upon the member's death).

Submitted by:

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

A. B. – APPROVED
Adina Bercaru
Member Services Manager

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Brenda Shott, Assistant CEO, Finance and Internal Operations

SUBJECT: **DECEMBER 31, 2019 ACTUARIAL VALUATION**

Recommendation

Approve the Actuarial Valuation and Review as of December 31, 2019 and adopt contribution rates for Fiscal Year 2021 – 2022 as recommended by Segal Consulting.

Background/Discussion

In May the OCERS Board of Retirement considered the preliminary results of the December 31, 2019 Actuarial Valuation in PowerPoint format with Mr. Paul Angelo from Segal Consulting.

On June 15, Mr. Andy Yeung will present the complete Actuarial Valuation and Review as of December 31, 2019, which contains detail, and the Board will be requested to formally adopt that report and the contribution rates that will go into effect in Fiscal Year 2021-2022.

The Board considers the Actuarial Valuation report in this two-step process as a courtesy to our many stakeholders, allowing them an opportunity to consider the initial data and provide comment prior to a formal adoption. To-date we have received no comments or concerns regarding the Actuarial Valuation as of December 31, 2019.

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

Orange County Employees Retirement System

Actuarial Valuation and Review

As of December 31, 2019

This report has been prepared at the request of the Board of Retirement to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Retirement 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

Segal

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San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

June 4, 2020

Board of Retirement
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of December 31, 2019. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2021-2022.

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

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

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

Sincerely,
Segal

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

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

JY/jl

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Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal to present a valuation of the Orange County Employees Retirement System ("OCERS" or "the System") as of December 31, 2019. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of current Plan assets to cover the estimated cost of settling the Plan's accrued benefit obligations.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Plan, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of December 31, 2019, provided by OCERS;
- The assets of the Plan as of December 31, 2019, provided by OCERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2019 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2019 valuation and
- The funding policy adopted by the Board of Retirement.

One of the general goals of an actuarial valuation is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

Section 1: Actuarial Valuation Summary

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the System's liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the System's staff. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with prior year's information.

The contribution requirements are determined as a percentage of payroll. The System's employer rates provide for both Normal Cost and a contribution to amortize any unfunded or overfunded actuarial accrued liabilities. In this valuation, we have applied the funding policy adopted by the Board in 2014 (and reaffirmed in 2018). Details of the funding policy are provided in *Section 4, Exhibit I* starting on page 104.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* starting on page 86. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit I* on pages 98 and 99.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2021 through June 30, 2022.

Section 1: Actuarial Valuation Summary

Valuation Highlights

Pg. 50 1. The ratio of the Valuation Value of Assets to Actuarial Accrued Liabilities increased from 72.4% to 73.2%. The funded ratio measured on a market value basis increased from 69.3% to 75.4%. The UAAL increased from $5,708.9 million as of December 31, 2018 to $5,879.9 million as of December 31, 2019. The increase in UAAL is primarily due to actual contributions less than expected and
Pg. 29 COLA increases greater than expected. A complete reconciliation of the System's UAAL is provided in *Section 2, Subsection E*. A
Pgs. 86-97 schedule of the current UAAL amortization amounts is provided in *Section 3, Exhibit H*. A graphical projection of the UAAL
Pgs. 98-99 amortization bases and payments is provided in *Section 3, Exhibit I*.

Pg. 31 2. The aggregate employer contribution rate calculated in this valuation increased from 39.48% of payroll to 41.49% of payroll. This change was primarily due to the final year of the three-year phase-in of the UAAL cost impact due to assumption changes in the December 31, 2017 valuation, actual contributions less than expected and COLA increases greater than expected. A complete reconciliation of the System's aggregate employer rate is provided in *Section 2, Subsection F*.

   The Board approved a three-year phase-in of the UAAL employer cost impact due to assumption changes in the December 31, 2017 valuation. The employer contribution rates as of December 31, 2018 shown in this report reflect two-thirds of the UAAL cost impact from these changes while the employer contribution rates as of December 31, 2019 reflect the full UAAL cost impact.

3. As directed recently by OCERS, starting with this valuation Segal is only showing the "net" UAAL contribution rates for the active employers in Rate Group #1 (i.e., the County and O.C. IHSS Public Authority) after adjustments to exclude the UAAL paid by O.C. Vector Control, Cypress Recreation and Parks, U.C.I. and Department of Education. The UAAL contributions required to be paid by O.C. Vector Control and Cypress Recreation and Parks are subject to the Board's Withdrawing Employer Policy. The UAAL contributions required to be paid by U.C.I. and Department of Education are subject to the Board's Declining Employer Payroll Policy. The UAAL contributions for these employers will be provided in separate side letters following the administrative practice established by OCERS in the prior valuations.

Pg. 32 4. The aggregate member rate calculated in this valuation has increased from 12.29% of payroll to 12.31% of payroll. A complete reconciliation of the System's average member rate is provided in *Section 2, Subsection F*.

   The individual member rates have been updated to reflect the valuation as of December 31, 2019. The detailed member rates are provided in *Section 4, Exhibit III* of this report.

Pg. 25 5. The rate of return on the Market Value of Assets was 14.79% for the 2019 plan year. The return on the Valuation Value of Assets was 6.66% for the same period after considering the recognition of prior years' investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 7.00%. This actuarial investment loss increased the average employer contribution rate by 0.18% of pay.

Section 1: Actuarial Valuation Summary

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6. As indicated in *Section 2, Subsection B* of this report, the total unrecognized investment gain as of December 31, 2019 was $479.2 million (as compared to an unrecognized loss of $644.7 million in the December 31, 2018 valuation). This investment gain will be recognized in the determination of the Actuarial Value of Assets for funding purposes over the next few years, and will offset a portion of any investment losses that may occur after December 31, 2019. This implies that earning the assumed rate of investment return of 7.00% per year (net of expenses) on a market value basis will result in investment gains on the Actuarial Value of Assets in the next few years. Therefore, if the actual market return is equal to the assumed 7.00% rate and all other actuarial assumptions are met, the employer contribution requirements would generally decrease over the next few years. The potential impact associated with the net deferred investment gains may be illustrated as follows:
   a. If the net deferred gains in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the funded ratio would increase from 73.2% to 75.4%.

      For comparison purposes, if all the net deferred losses in the December 31, 2018 valuation had been recognized immediately in the December 31, 2018 valuation, the funded ratio in last year's valuation would have decreased from 72.4% to 69.3%.
   b. If the net deferred gains in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the aggregate employer contribution rate would decrease from 41.5% to 39.7%.

      For comparison purposes, if all the net deferred losses in the December 31, 2018 valuation had been recognized immediately in the December 31, 2018 valuation, the aggregate employer contribution rate in last year's valuation would have increased from 40.0% to 42.5%.
7. The actuarial valuation report as of December 31, 2019 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the plan, while increases will decrease the actuarial cost of the plan.
8. This report reflects the $8.1 million in additional contributions made by O.C. Sanitation District to pay off their UAAL. The $8.1 million[1] of additional contributions has been used to eliminate their UAAL rates for FY 20-21. In addition, O.C. Sanitation District made a $29.9 million additional contribution to the O.C. Sanitation District UAAL deferred account to go towards paying their losses as they arise in future valuations to continue to eliminate their UAAL rate in those valuations. As of December 31, 2019, a transfer of $18.6 million was required from this account to fully offset the actuarial losses (primarily from salary experience and COLA experience) during 2019. The balance in the O.C. Sanitation District UAAL deferred account after the transfer is $12,057,000 as of December 31, 2019.

[1] $8.1 million in additional contributions were made by O.C. Sanitation District on September 9, 2019. After adjusting with interest, those contributions have a value of $8.3 million as of December 31, 2019.

Section 1: Actuarial Valuation Summary

This report also reflects the $12.8 million additional contributions made by Transportation Corridor Agency to pay off their UAAL. The $12.8 million[1] of additional contributions has been used to eliminate their UAAL rates for FY 20-21.

9. This report reflects the $19.0 million in additional contributions made by OCFA towards their UAAL. The $19.0 million[2] of additional contributions made by OCFA has been amortized as a level percent of pay over a period of twenty years effective on December 31, 2019 and used to reduce their UAAL rates for fiscal year 2021-2022.
10. During 2019, a request was made by City of San Juan Capistrano to spinoff certain City utility employees to leave OCERS and join CalPERS. Such spinoff has not taken place as of December 31, 2019.
11. The Actuarial Standards Board approved Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment, which was first effective with OCERS' December 31, 2018 actuarial valuation. ASOP 51 requires actuaries to identify risks that "may reasonably be anticipated to significantly affect the plan's future financial condition". Investment risk, asset/liability mismatch risk, interest rate risk, longevity and other demographic risks and contribution risk are also cited as examples in ASOP 51. The standard does not require the actuary to evaluate the likelihood of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

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

    A copy of the risk assessment report including the analysis recommended by Segal in consultation with OCERS staff will be provided in a separate stand-alone report.
12. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy adopted by the Board meets this standard.

[1] $12.8 million in additional contributions were made by Transportation Corridor Agency on July 1, 2019. After adjusting with interest, those contributions have a value of $13.3 million as of December 31, 2019.

[2] $19.0 million in additional contributions were made by OCFA continuously throughout the year. After adjusting with interest, those contributions have a value of $19.2 million as of December 31, 2019.

Section 1: Actuarial Valuation Summary

13. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the Plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and Pension Expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of December 31, 2019, will be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by the GASB. However, the actuarially determined contribution in this valuation is expected to be used as the actuarially determined contribution (ADC) for GASB financial.
14. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2019. Due to the COVID-19 pandemic, market conditions have changed significantly since the valuation date. The Plan's actuarial status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the market will perform over the next several months, and how that will affect the results of next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

Section 1: Actuarial Valuation Summary

Summary of Key Valuation Results

	December 31, 2019 Total Rate	December 31, 2019 Estimated Annual Dollar Amount[1] ($ in '000s)	December 31, 2018 Total Rate[2,3,4]	December 31, 2018 Estimated Annual Dollar Amount[1] ($ in '000s)
Aggregate Employer Contribution Rates:				
• Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD)	15.49%	$14,040	15.35%	$13,909
• Rate Group #2 – Plans I, J, O, P, S, T, U and W (County et al.)	39.35%	456,528	37.03%	429,586
• Rate Group #3 – Plans B, G, H and U (OCSD)	11.93%	9,110	11.97%	9,147
• Rate Group #5 – Plans A, B and U (OCTA)	31.42%	35,501	30.47%	34,422
• Rate Group #9 – Plans M, N and U (TCA)	13.22%	970	12.98%	952
• Rate Group #10 – Plans I, J, M, N and U (OCFA)	26.70%	8,436	27.60%	8,721
• Rate Group #11 – Plans M and N, future service, and U (Cemetery)	14.84%	248	12.13%	203
• Rate Group #12 – Plans G, H, future service, and U (Law Library)	13.68%	153	15.35%	172
• Rate Group #6 – Plans E, F and V (Probation)	59.69%	37,659	55.23%	34,845
• Rate Group #7 – Plans E, F, Q, R and V (Law Enforcement)	67.55%	175,621	64.79%	168,423
• Rate Group #8 – Plans E, F, Q, R and V (OCFA)	48.71%	71,845	47.84%	70,569
All Categories Combined	**41.49%**	**$810,111**	**39.48%**	**$770,949**
Average Member Contribution Rates:				
• Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD)	9.72%	$8,808	9.70%	$8,790
• Rate Group #2 – Plans I, J, O, P, S, T, U and W (County et al.)	10.99%	127,511	10.97%	127,279
• Rate Group #3 – Plans B, G, H and U (OCSD)	11.62%	8,877	11.64%	8,892
• Rate Group #5 – Plans A, B and U (OCTA)	10.30%	11,637	10.28%	11,614
• Rate Group #9 – Plans M, N and U (TCA)	10.86%	797	10.85%	796
• Rate Group #10 – Plans I, J, M, N and U (OCFA)	11.42%	3,609	11.42%	3,609
• Rate Group #11 – Plans M and N, future service, and U (Cemetery)	10.13%	170	10.16%	170
• Rate Group #12 – Plans G, H, future service, and U (Law Library)	13.33%	149	13.23%	148
• Rate Group #6 – Plans E, F and V (Probation)	16.63%	10,492	16.56%	10,448
• Rate Group #7 – Plans E, F, Q, R and V (Law Enforcement)	17.22%	44,767	17.30%	44,975
• Rate Group #8 – Plans E, F, Q, R and V (OCFA)	15.90%	23,453	15.74%	23,217
All Categories Combined	**12.31%**	**$240,270**	**12.29%**	**$239,938**

1 Based on December 31, 2019 projected annual compensation.
2 These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
3 For those Rate Groups with plan specific contribution rates, the total rates shown above have been recalculated by applying the plan specific contribution rates determined in the December 31, 2018 valuation to the corresponding projected payrolls reported as of December 31, 2019.
4 Average December 31, 2018 member contribution rates have been recalculated by applying the individual entry age based rates determined in the December 31, 2018 valuation to the System membership as of December 31, 2019.

Section 1: Actuarial Valuation Summary

Summary of Key Valuation Results (continued)

		December 31, 2019 ($ in '000s)	December 31, 2018 ($ in '000s)
Actuarial Accrued Liability as of December 31:	• Retired members and beneficiaries	$12,631,182	$11,569,064
	• Inactive vested members[1]	500,271	449,290
	• Active members	8,785,277	8,684,995
	• Total Actuarial Accrued Liability	$21,916,730	$20,703,349
	• Normal Cost for plan year beginning December 31	529,849	516,408
Assets as of December 31:	• Market Value of Assets (MVA)[2,3]	$16,516,024	$14,349,705
	• Valuation Value of Assets (VVA)[2]	16,036,953	14,994,420
Funded status as of December 31:	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	$5,400,706	$6,353,644
	• Funded percentage on MVA basis	75.36%	69.31%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	$5,879,861	$5,708,929
	• Funded percentage on VVA basis	73.17%	72.43%
Key assumptions:	• Net investment return	7.00%	7.00%
	• Price Inflation	2.75%	2.75%
	• Payroll growth increase	3.25%	3.25%

1 Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
2 Excludes County Investment Account (funded by pension obligation bond proceeds held by OCERS), prepaid employer contributions account, O.C. Sanitation District UAAL Deferred Account (after transfer) and non-valuation reserves.
3 Based on the preliminary unaudited financial statement provided by OCERS for this valuation.

Section 1: Actuarial Valuation Summary

Summary of Key Valuation Results (continued)

		December 31, 2019	December 31, 2018	Change From Prior Year
Demographic data as of December 31:	**Active Members:**			
	• Number of members	22,257	21,929	1.5%
	• Average age	44.9	45.1	-0.2
	• Average service	12.5	12.8	-0.3
	• Total projected compensation	$1,952,534,335	$1,875,371,661	4.1%
	• Average projected compensation	$87,727	$85,520	2.6%
	Retired Members and Beneficiaries:			
	• Number of members:			
	– Service retired	14,449	13,827	4.5%
	– Disability retired	1,505	1,482	1.6%
	– Beneficiaries	2,466	2,365	4.3%
	– Total	18,420	17,674	4.2%
	• Average age	70.1	70.0	0.1
	• Average monthly benefit[1]	$4,077	$3,913	4.2%
	Inactive Vested Members:			
	• Number of members[2]	6,520	6,026	8.2%
	• Average Age	44.7	44.9	-0.2
	Total Members:	47,197	45,629	3.4%

[1] Excludes monthly benefits payable from the STAR COLA.
[2] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.

Section 1: Actuarial Valuation Summary

Important Information About Actuarial Valuations

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

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

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the Market Value of Assets as of the valuation date, as provided by the System. The System uses a "Valuation Value of Assets" that differs from market value to gradually reflect year-to-year changes in the Market Value of Assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, 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.

Section 1: Actuarial Valuation Summary

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

The actuarial valuation is prepared at the request of the System. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan. Future contribution requirements may differ from those determined in the valuation because of:

- Differences between actual experience and anticipated experience;
- Changes in actuarial assumptions or methods; and
- Changes in statutory provisions.

Some actuarial results in this report are not rounded, but that does not imply precision.

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 System should look to their other advisors for expertise in these areas.

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

Section 2: Actuarial Valuation Results

A. Member Data

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

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

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

Member Population: 2010 – 2019

Year Ended December 31	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2010	21,742	4,308	12,762	17,070	0.79	0.59
2011	21,421	4,406	13,289	17,695	0.83	0.62
2012	21,256	4,415	13,947	18,362	0.86	0.66
2013	21,368	4,613	14,505	19,118	0.89	0.68
2014	21,459	4,789	15,169	19,958	0.93	0.71
2015	21,525	5,091	15,810	20,901	0.97	0.73
2016	21,746	5,370	16,369	21,739	1.00	0.75
2017	21,721	5,803	16,947	22,750	1.05	0.78
2018	21,929	6,026	17,674	23,700	1.08	0.81
2019	22,257	6,520	18,420	24,940	1.12	0.83

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.

Section 2: Actuarial Valuation Results

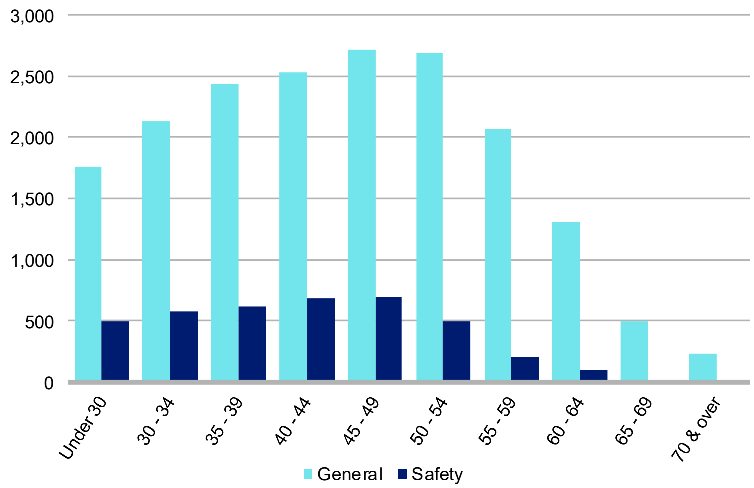
Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 22,257 active members with an average age of 44.9, average years of service of 12.5 years and average compensation of $87,727. The 21,929 active members in the prior valuation had an average age of 45.1, average service of 12.8 years and average compensation of $85,520.

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

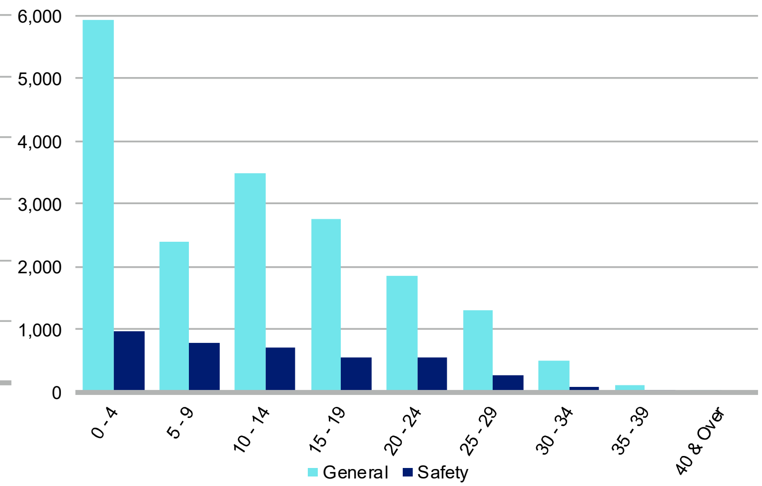
Distribution of Active Members as of December 31, 2019

Actives by Age



Average age	44.9
Prior year average age	45.1
Difference	-0.2

Actives by Years of Service



Average years of service	12.5
Prior year average years of service	12.8
Difference	-0.3

Inactive Members

In this year's valuation, there were 6,520 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 6,026 in the prior valuation.

Section 2: Actuarial Valuation Results

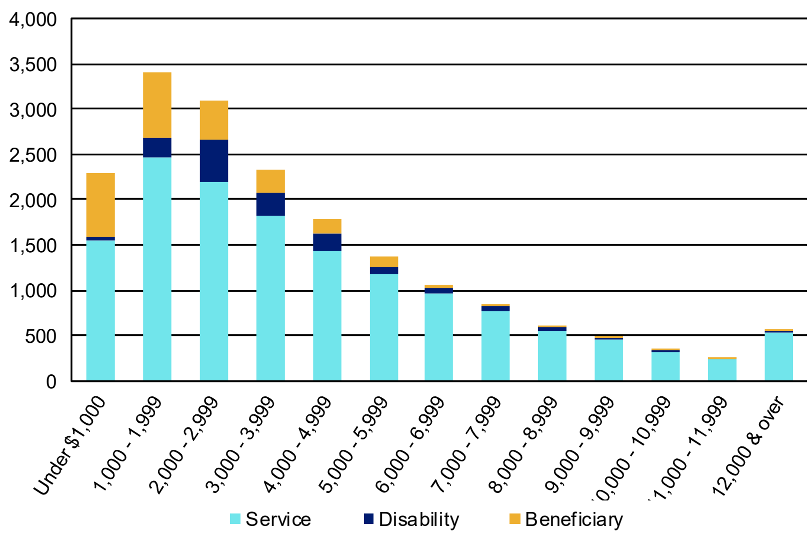
Retired Members and Beneficiaries

As of December 31, 2019, 15,954 retired members and 2,466 beneficiaries were receiving total monthly benefits of $75,094,136. For comparison, in the previous valuation, there were 15,309 retired members and 2,365 beneficiaries receiving monthly benefits of $69,152,036. These monthly benefits exclude benefits payable from the Supplemental Targeted Adjustment for Retirees Cost of Living Adjustment (STAR COLA).

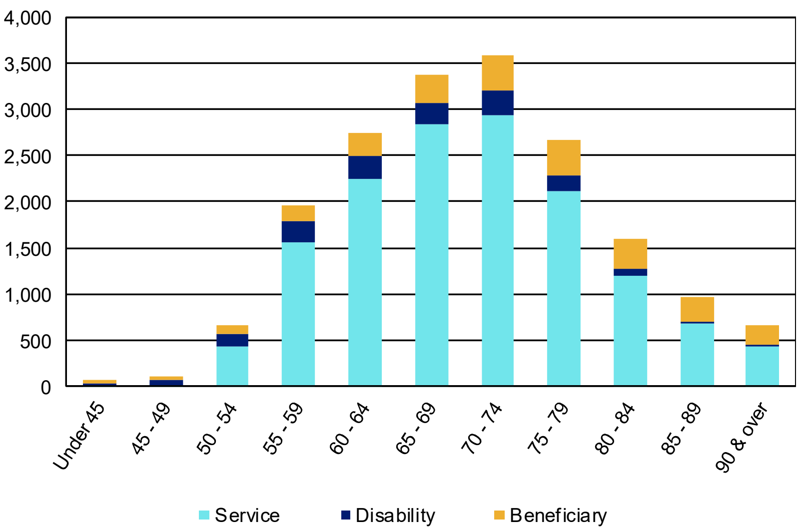
As of December 31, 2019, the average monthly benefit for retired members and beneficiaries is $4,077, compared to $3,913 in the previous valuation. The average age for retired members and beneficiaries is 70.1 in the current valuation, compared with 70.0 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of December 31, 2019

Retired Members and Beneficiaries
by Type and Monthly Amount



Retired Members and Beneficiaries
by Type and Age



Section 2: Actuarial Valuation Results

Historical Plan Population

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

Member Data Statistics: 2010 – 2019

	Active Members			Retired Members and Beneficiaries		
Year Ended December 31	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2010	21,742	45.1	12.6	12,762	68.8	$2,988
2011	21,421	45.4	13.0	13,289	69.0	3,099
2012	21,256	45.5	13.1	13,947	69.0	3,247
2013	21,368	45.6	13.2	14,505	69.2	3,366
2014	21,459	45.6	13.2	15,169	69.4	3,455
2015	21,525	45.5	13.1	15,810	69.5	3,560
2016	21,746	45.4	12.9	16,369	69.7	3,637
2017	21,721	45.3	12.9	16,947	69.8	3,745
2018	21,929	45.1	12.8	17,674	70.0	3,913
2019	22,257	44.9	12.5	18,420	70.1	4,077

Section 2: Actuarial Valuation Results

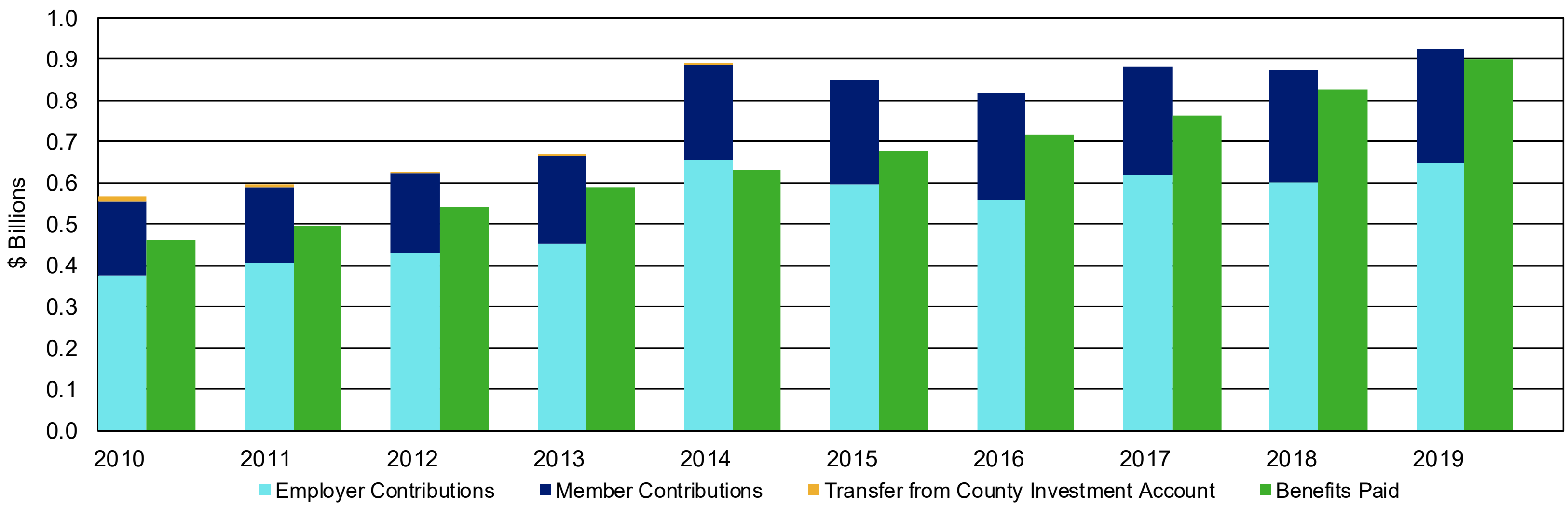
B. Financial Information

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

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

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

Comparison of Contributions Made with Benefits for Years Ended December 31, 2010 – 2019



Section 2: Actuarial Valuation Results

Determination of Actuarial Value of Assets for Year Ended December 31, 2019

		Actual Return	Expected Return	Original Amount	Percent Deferred	Unrecognized Amount
1	**Market Value of Assets[1,2]**					**$16,516,108,000**
2	Calculation of unrecognized return					
a)	Year ended December 31, 2015	$(51,601,000)	$833,757,000	$(885,358,000)	0%	$0
b)	Year ended December 31, 2016	1,010,548,000	840,469,000	170,079,000	20	34,016,000
c)	Year ended December 31, 2017	1,878,172,000	920,426,000	957,746,000	40	383,098,000
d)	Year ended December 31, 2018	(361,321,000)	1,026,583,000	(1,387,904,000)	60	(832,742,000)
e)	Year ended December 31, 2019	2,123,258,000	1,004,779,000	1,118,479,000	80	894,783,000
f)	Total unrecognized return[3]					$479,155,000
3	**Actuarial Value of Assets (1) - (2f)**					**$16,036,953,000**
4	Ratio of Actuarial Value to Market Value					97.1%
5	Non-valuation reserves:					
a)	Unclaimed member deposit					$0
b)	Medicare medical insurance reserve					84,000
c)	Subtotal					$84,000
6	**Valuation Value of Assets (3) – (5c)**					**$16,036,869,000**

[1] Excludes $150,416,000 in County Investment Account (funded by pension obligation bond proceeds held by OCERS), $259,285,000 in Prepaid Employer Contributions and $12,057,000 in O.C. Sanitation District UAAL Deferred Account (after transfer).

[2] Based on the preliminary unaudited financial statement provided by OCERS for this valuation.

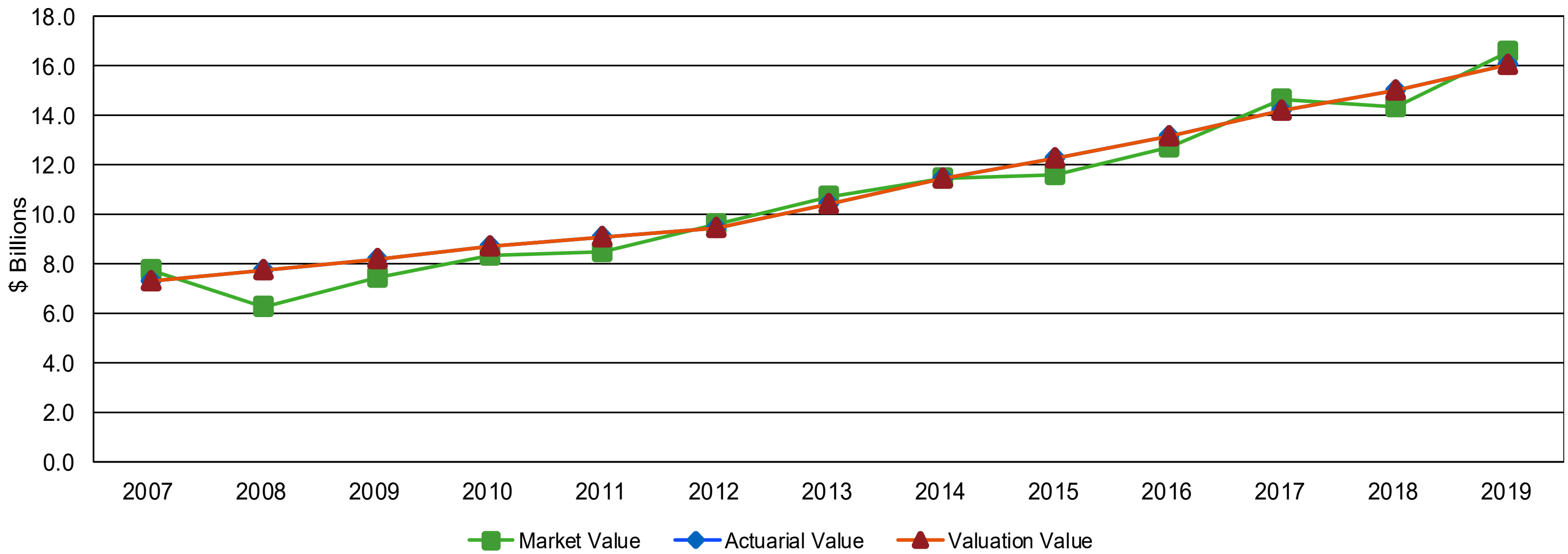
[3] Deferred return as of December 31, 2019 recognized in each of the next four years:

(a)	Amount recognized on December 31, 2020	$171,680,000
(b)	Amount recognized on December 31, 2021	137,664,000
(c)	Amount recognized on December 31, 2022	(53,885,000)
(d)	Amount recognized on December 31, 2023	223,696,000
(e)	Total unrecognized return as of December 31, 2019	$479,155,000

Section 2: Actuarial Valuation Results

The Market Value, Actuarial Value and Valuation Value of Assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the Actuarial Value of Assets tracks the Market Value of Assets. The Valuation Value of Assets is the actuarial value, excluding any non-valuation reserves. The Valuation Value of Assets is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Market Value, Actuarial Value, and Valuation Value of Assets as of December 31, 2007 – 2019



Section 2: Actuarial Valuation Results

C. Actuarial Experience

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

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

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. There are no assumption changes reflected in this report.

The total loss is $290.1 million, which includes $50.5 million from investment losses, a net loss of $83.5 million from contribution experience (including a gain of $23.3 million from additional UAAL payments from Vector Control and OCFA and anticipated payments from DOE and U.C.I.[1], a gain of $18.6 million from transfer from O.C. Sanitation UAAL Deferred Account and a loss of $125.4 million from all other contribution experience) and $156.1 million in losses from all other sources. The net experience variation from individual sources other than investments and contributions was 0.7% of the Actuarial Accrued Liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended December 31, 2019

1	Net loss from investments[2]	$(50,514,000)
2	Net loss from contribution experience[3]	(83,457,000)
3	Net loss from other experience[3]	(156,137,000)
4	**Net experience loss: 1 + 2 + 3**	**$(290,108,000)**

[1] Segal provided separate letters for DOE and UCI with regard to their required UAAL contributions based on the Board's withdrawing employer policy. These contributions have not been reflected in the valuation.
[2] Details on next page.
[3] See *Subsection E* for further details. Does not include the effect of plan or assumption changes, if any.

Section 2: Actuarial Valuation Results

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. The rate of return on the Market Value of Assets was 14.79% for the year ended December 31, 2019.

For valuation purposes, the assumed rate of return on the Valuation Value of Assets is 7.00%. The actual rate of return on a valuation basis for the 2019 plan year was 6.66%. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended December 31, 2019 with regard to its investments.

Investment Experience for Year Ended December 31, 2019

		Market Value	Actuarial Value	Valuation Value
1	Net investment income	$2,123,258,000	$999,388,000	$999,389,000
2	Average value of assets	14,353,980,000[1]	14,998,695,000	14,998,610,000
3	Rate of return: 1 ÷ 2	14.79%[1]	6.66%	6.66%
4	Assumed rate of return	7.00%	7.00%	7.00%
5	Expected investment income: 2 x 4	$1,004,779,000	$1,049,909,000	$1,049,903,000
6	**Actuarial gain/(loss): 1 - 5**	**$1,118,479,000**	**$(50,521,000)**	**$(50,514,000)**

[1] Return on market value was calculated using a modified dollar-weighted approach based on pension plan assets net of accounting liabilities. Actual investment income on net pension plan assets was $2,123,258,000 during 2019 after including both the administrative expenses and discount for prepaid contributions while excluding the income credited to County Investment Account and O.C. Sanitation District UAAL Deferred Account. Without these adjustments, the actual investment income was $2,183,808,000.

Section 2: Actuarial Valuation Results

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial and valuation basis compared to the actual market value investment return for the last ten years, including averages over select time periods.

Investment Return – Market Value, Actuarial Value and Valuation Value: 2010 – 2019

	Market Value Investment Return[1]		Actuarial Value Investment Return[1]		Valuation Value Investment Return[1]	
Year Ended December 31	**Amount[2]**	**Percent**	**Amount[2]**	**Percent**	**Amount[2]**	**Percent**
2010	$787,215,000	10.47%	$411,960,000	5.02%	$412,046,000	5.02%
2011	3,236,000	0.04%	286,585,000	3.28%	287,241,000	3.29%
2012	1,014,471,000	11.92%	318,033,000	3.49%	318,043,000	3.49%
2013	1,031,118,000	10.73%	866,402,000	9.11%	866,402,000	9.11%
2014	487,104,000	4.52%	771,049,000	7.34%	771,174,000	7.34%
2015	(51,601,000)	(0.45%)	606,190,000	5.26%	606,191,000	5.26%
2016	1,010,548,000	8.72%	776,627,000	6.33%	776,628,000	6.33%
2017	1,878,172,000	14.79%	977,128,000	7.44%	977,130,000	7.44%
2018	(361,321,000)	(2.46%)	738,790,000	5.20%	738,791,000	5.20%
2019	2,123,258,000	14.79%	999,388,000	6.66%	999,389,000	6.66%
Most recent five-year average return		**6.82%**		**6.17%**		**6.17%**
Most recent ten-year average return		**7.13%**		**5.90%**		**5.90%**

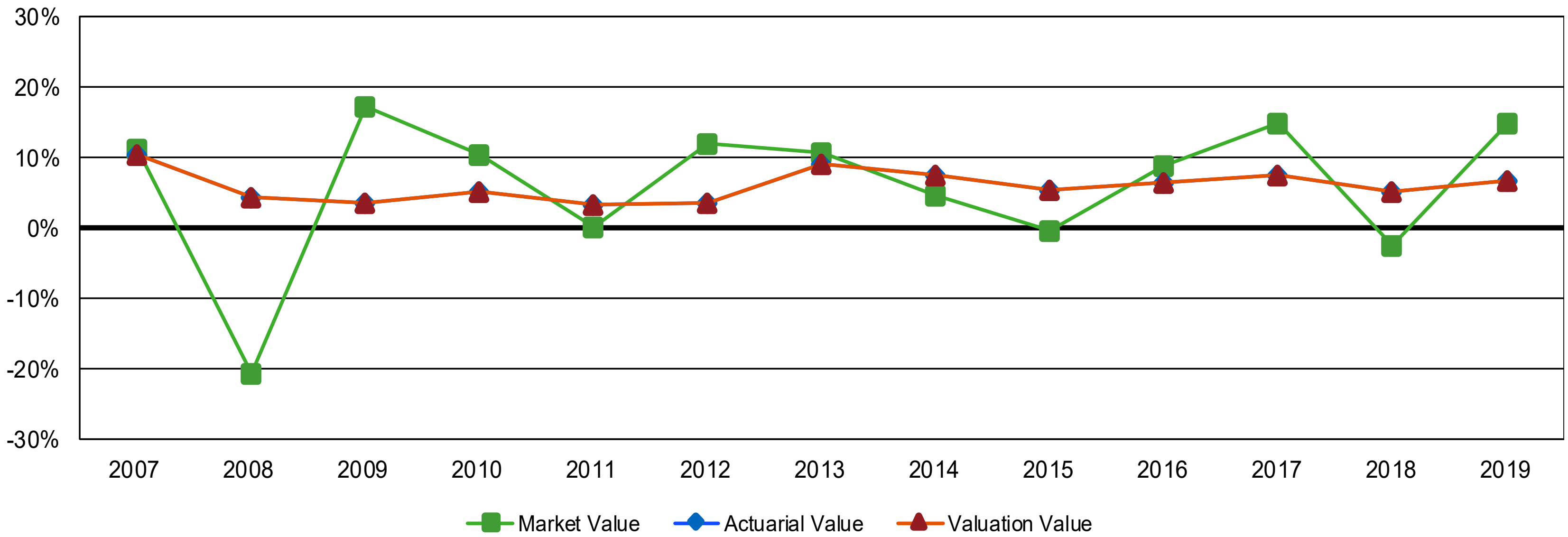
Note: Return on market value was calculated using a modified dollar-weighted approach based on pension plan assets net of accounting liabilities. Each year's yield is weighted by the average asset value in that year.

[1] Net of administrative and investment expenses.
[2] The dollar amount of return on market value is net of the return on the County Investment Account (funded by pension obligation bond proceeds held by OCERS), prepaid employer contributions account and O.C. Sanitation District UAAL Deferred Account (after transfer), if any.

Section 2: Actuarial Valuation Results

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

Market, Actuarial and Valuation Rates of Return for Years Ended December 31, 2007 – 2019



Section 2: Actuarial Valuation Results

Contributions

Contributions for the year ended December 31, 2019 totaled $923.0 million[1], compared to the projected amount of $1,002.6 million. This resulted in a net loss of $83.5 million from contribution experience for the year, when adjusted for timing.

Non-Investment Experience

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

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

The net loss from this other experience for the year ended December 31, 2019 amounted to $156.1 million, which is 0.7% of the Actuarial Accrued Liability. See Subsection E for a detailed development of the Unfunded Actuarial Accrued Liability.

[1] Excluding $20.1 million in additional contributions made by O.C. Sanitation District and Transportation Corridor Agency to pay off their UAAL as of December 31, 2018 and including the $18.6 million transfer from O.C. Sanitation District UAAL Deferred Account

Section 2: Actuarial Valuation Results

D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of December 31, 2019 is 21.9 billion, an increase of $1.2 billion, or 5.9%, from the Actuarial Accrued Liability as of the prior valuation date. The liability is expected to grow each year with Normal Cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection).

Actuarial Assumptions

There are no assumption changes reflected in this report.

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

Plan Provisions

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

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

Section 2: Actuarial Valuation Results

E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended December 31, 2019

1	**Unfunded actuarial accrued liability at beginning of year (before adjustments for additional UAAL contributions)**		**$5,708,929,000**
	a) Additional UAAL contributions from OCSD and TCA[1]		(20,143,000)
2	**Unfunded actuarial accrued liability at beginning of year after adjustments for additional UAAL contributions)**		**$5,688,786,000**
3	Normal cost at middle of year		516,408,000
4	Expected employer and member contributions		(1,002,599,000)
5	Interest		387,158,000
6	Expected Unfunded Actuarial Accrued Liability at end of year		$5,589,753,000
7	Changes due to:		
	a) Investment losses (on smoothed value of assets)	$50,514,000	
	b) Additional UAAL payments from Vector Control and OCFA and anticipated payments[2] from DOE and U.C.I.	(23,327,000)	
	c) Transfer from O.C. Sanitation District UAAL Deferred Account	(18,631,000)	
	d) Difference in actual versus expected contributions (including loss from phase-in)	125,415,000[3]	
	e) Difference in actual versus expected salary increases	(52,716,000)	
	f) Difference in actual versus expected COLA increases	131,220,000[4]	
	g) Other experience loss	77,633,000	
	Total changes		$290,108,000
8	**Unfunded actuarial accrued liability at end of year**		**$5,879,861,000**

Note: The sum of items 7b, 7c and 7d equals the "Net loss from contribution experience" shown in Subsection C.
The sum of items 7e, 7f and 7g equals the "Net loss from other experience" shown in Subsection C.

[1] Effect of $8 million in additional contributions for O.C. Sanitation District and $12 million in additional contributions for Transportation Corridor Agency to pay off their UAAL as of December 31, 2018.

[2] Segal provided separate letters for DOE and UCI with regard to their required UAAL contributions based on the Board's withdrawing employer policy. These contributions have not been anticipated in the prior valuation.

[3] Includes $24 million contribution loss from the phase-in of the UAAL cost impact due to changes in actuarial assumptions in 2017.

[4] Includes an actual loss from the payment of 0.25% higher COLA (relative to the 2.75% inflation assumption) for the December 31, 2019 valuation plus an anticipated 0.25% for each of the next four years because of an accumulation of a 1.00% COLA Bank in this valuation.

Section 2: Actuarial Valuation Results

F. Recommended Contribution

The recommended contribution is equal to the employer Normal Cost payment and a payment on the Unfunded Actuarial Accrued Liability. As of December 31, 2019, the average recommended employer contribution is 41.49% of compensation.

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

The contribution requirement as of December 31, 2019 is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

Average Recommended Employer Contribution for Year Ended December 31

		2019		2018	
		Amount ($ in '000s)	**% of Projected Compensation**	**Amount ($ in '000s)**	**% of Projected Compensation**
1	Total normal cost	$529,849	27.14%	$516,408	27.54%
2	Expected member normal cost contributions	(240,270)	(12.31%)	(233,805)	(12.47%)
3	Employer normal cost: (1) + (2)	$289,579	14.83%	$282,603	15.07%
4	Actuarial accrued liability	21,916,730		20,703,349	
5	Valuation Value of Assets	16,036,869		14,994,420	
6	Unfunded actuarial accrued liability (UAAL): (4) - (5)	$5,879,861		$5,708,929	
7	Payment on UAAL	$520,532	26.66%	$467,926	24.95%[1]
9	Projected compensation	$1,952,534		$1,875,370	
10	**Total average recommended employer contribution: (3) + (7)**	**$810,111**	**41.49%**	**$750,529**	**40.02%**

Note: Contributions are assumed to be paid at the middle of the year.

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.

Section 2: Actuarial Valuation Results

Reconciliation of Average Recommended Employer Contribution Rate

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

Reconciliation from December 31, 2018 to December 31, 2019

	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Average Recommended Employer Contribution as of December 31, 2018 (before adjustments for additional UAAL contributions and phase-in)	**40.80%**	**$796,667**
• Adjustment to FY20-21 rates for additional UAAL contributions from OCSD and TCA	(0.09%)	(1,779)
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	(1.23%)	(23,939)
Average Recommended Employer Contribution as of December 31, 2018 (after adjustments for additional UAAL contributions and phase-in)	**39.48%**	**$770,949**
• Effect of investment loss (after smoothing)	0.18%	$3,515
• Effect of additional UAAL contributions from OCFA	(0.07%)	(1,367)
• Effect of $18.6 million asset transfer from O.C. Sanitation District UAAL Deferred Account	(0.07%)	(1,367)
• Effect of difference in actual versus expected contributions (including loss from phase-in)	0.46%[2]	8,982
• Effect of difference in actual versus expected COLA increases	0.48%[3]	9,372
• Effect of difference in actual versus expected salary increases	(0.19%)	(3,710)
• Effect of growth in total payroll greater than expected	(0.21%)	(4,100)
• Effect of other experience loss	0.20%[4]	3,898
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	1.23%	23,939
Total change	2.01%	$39,162
Average Recommended Employer Contribution as of December 31, 2019	**41.49%**	**$810,111**

[1] Based on December 31, 2018 projected annual compensation of $1,952,534,000.
[2] Includes 0.09% of pay contribution loss from the phase-in of the UAAL cost impact due to changes in actuarial assumptions in 2017.
[3] Includes an actual loss from the payment of 0.25% higher COLA (relative to the 2.75% inflation assumption) for the December 31, 2019 valuation plus an anticipated 0.25% for each of the next four years because of an accumulation of a 1.00% COLA Bank in this valuation.
[4] Includes an adjustment of 0.11% to reflect the anticipated contribution loss due to the 18-month delay between date of valuation and date of rate implementation.

Section 2: Actuarial Valuation Results

Reconciliation of Average Recommended Member Contribution Rate

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

Reconciliation from December 31, 2018 to December 31, 2019

	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Average Recommended Member Contribution as of December 31, 2018[2]	**12.29%**	**$239,938**
• Effect of changes in member demographics	0.02%	332
Total change	0.02%	$332
Average Recommended Member Contribution as of December 31, 2019	**12.31%**	**$240,270**

[1] Based on December 31, 2019 projected annual compensation of $1,952,534,000.
[2] Rates have been recalculated by applying the individual entry age based rates determined in the December 31, 2018 valuation to the System membership as of December 31, 2019.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #1 – Plans A and B (2.0% @ 57 and 1.6667% @ 57.5 – non-OCTA, non-OCSD)				
Normal Cost	10.68%	$4,348	10.73%	$4,368
UAAL[3,4]	5.16%	2,101	5.06%	2,060
Total Contribution	**15.84%**	**$6,449**	**15.79%**	**$6,428**
Rate Group #1 – Plan U (2.5% @ 67 PEPRA)[6]				
Normal Cost	10.05%	$5,016	9.93%	$4,956
UAAL[3,4]	5.16%	2,575	5.06%	2,525
Total Contribution	**15.21%**	**$7,591**	**14.99%**	**$7,481**
Rate Group #1 – Plans A, B and U Combined				
Normal Cost	10.33%	$9,364	10.29%	$9,324
UAAL[3,4]	5.16%	4,676	5.06%	4,585
Total Contribution	**15.49%**	**$14,040**	**15.35%**	**$13,909**

1 These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
2 Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
3 UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
4 These are "net" UAAL contribution rate for County and IHSS Public Authority without reflecting the UAAL contributions required for Vector Control, Cypress Parks and Recreation, U.C.I. and DOE.
6 Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #2 – Plans I and J (2.7% @ 55 – non-OCFA, non-Children and Families Commission)				
Normal Cost	14.34%	$111,223	14.36%	$111,378
UAAL[3]	27.38%	212,363	25.05%	194,291
Total Contribution	**41.72%**	**$323,586**	**39.41%**	**$305,669**
Rate Group #2 – Plans I and J (2.7% @ 55 – non-OCFA, Children and Families Commission)				
Normal Cost	14.34%	$79	14.36%	$80
UAAL[3,4]	5.36%	30	3.26%	18
Total Contribution	**19.70%**	**$109**	**17.62%**	**$98**
Rate Group #2 – Plans O and P (1.62% @ 65)				
Normal Cost	6.10%	$917	6.23%	$937
UAAL[3]	27.38%	4,116	25.05%	3,766
Total Contribution	**33.48%**	**$5,033**	**31.28%**	**$4,703**
Rate Group #2 – Plan S (2.0% @ 57)				
Normal Cost	12.61%	$247	12.13%	$237
UAAL[3]	27.38%	536	25.05%	490
Total Contribution	**39.99%**	**$783**	**37.18%**	**$727**
Rate Group #2 – Plan T (1.62% @ 65 PEPRA)[5]				
Normal Cost	7.14%	$24,248	7.12%	$24,180
UAAL[3]	27.38%	92,985	25.05%	85,072
Total Contribution	**34.52%**	**$117,233**	**32.17%**	**$109,252**

Note: For Orange County Employees Retirement System (the employer) with future service only benefit improvements under 2.7% @ 55, refer to the employer rates on page 46.

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
[2] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[4] UAAL rate has been adjusted to reflect future service only benefit improvement under 2.7% @ 55.
[5] Applicable for members hired on or after January 1, 2013 except for County Attorneys, San Juan Capistrano members, OCERS management members and Children and Families members.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #2 – Plan U (2.5% @ 67 PEPRA, non-Children and Families Commission)[5]				
Normal Cost	8.81%	$2,343	8.78%	$2,335
UAAL[3]	27.38%	7,283	25.05%	6,663
Total Contribution	**36.19%**	**$9,626**	**33.83%**	**$8,998**
Rate Group #2 – Plan U (2.5% @ 67 PEPRA, Children and Families Commission)[5]				
Normal Cost	8.81%	$64	8.78%	$64
UAAL[3,4]	5.36%	39	3.26%	24
Total Contribution	**14.17%**	**$103**	**12.04%**	**$88**
Rate Group #2 – Plan W (1.62% @ 65 PEPRA)[6]				
Normal Cost	8.54%	$13	8.73%	$13
UAAL[3]	27.38%	42	25.05%	38
Total Contribution	**35.92%**	**$55**	**33.78%**	**$51**
Rate Group #2 – Plans I, J, O, P, S, T, U and W Combined				
Normal Cost	11.99%	$139,134	12.00%	$139,224
UAAL[3]	27.36%	317,394	25.03%	290,362
Total Contribution	**39.35%**	**$456,528**	**37.03%**	**$429,586**

Note: For Orange County Employees Retirement System (the employer) with future service only benefit improvements under 2.7% @ 55, refer to the employer rates on page 46.

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
[2] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[4] UAAL rate has been adjusted to reflect future service only benefit improvement under 2.7% @ 55.
[5] Applicable for County Attorneys, San Juan Capistrano members, OCERS management members and Children and Families members hired on or after January 1, 2013.
[6] Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate[1]	Estimated Annual Dollar Amount[3] ($ in '000s)	Contribution Rate[2]	Estimated Annual Dollar Amount[3] ($ in '000s)
Rate Group #3 – Plans G and H (2.5% @ 55 – OCSD)				
Normal Cost	13.22%	$5,844	13.24%	$5,853
UAAL[4]	0.00%	0	0.00%	0
Total Contribution	**13.22%**	**$5,844**	**13.24%**	**$5,853**
Rate Group #3 – Plan B (1.64% @ 57 – OCSD)				
Normal Cost	11.23%	$714	11.11%	$706
UAAL	0.00%	0	0.00%	0
Total Contribution	**11.23%**	**$714**	**11.11%**	**$706**
Rate Group #3 – Plan U (2.5% @ 67 PEPRA)[5]				
Normal Cost	9.88%	$2,552	10.02%	$2,588
UAAL	0.00%	0	0.00%	0
Total Contribution	**9.88%**	**$2,552**	**10.02%**	**$2,588**
Rate Group #3 – Plans B, G, H and U Combined				
Normal Cost	11.93%	$9,110	11.97%	$9,147
UAAL	0.00%	0	0.00%	0
Total Contribution	**11.93%**	**$9,110**	**11.97%**	**$9,147**

[1] These rates are after adjustment for $18,631,000 asset transfer from O.C. Sanitation District UAAL Deferred Account.
[2] These rates are after adjustment to the contribution rates for FY 20-21 for additional UAAL contributions made during calendar year 2019.
[3] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[4] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[5] Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #5 – Plans A and B (2.0% @ 57 and 1.6667% @ 57.5 – OCTA)				
Normal Cost	11.97%	$10,434	12.03%	$10,486
UAAL[3]	19.54%	17,033	18.60%	16,213
Total Contribution	**31.51%**	**$27,467**	**30.63%**	**$26,699**
Rate Group #5 – Plan U (2.5% @ 67 PEPRA)[4]				
Normal Cost	11.59%	$2,991	11.32%	$2,922
UAAL[3]	19.54%	5,043	18.60%	4,801
Total Contribution	**31.13%**	**$8,034**	**29.92%**	**$7,723**
Rate Group #5 – Plans A, B and U Combined				
Normal Cost	11.88%	$13,425	11.87%	$13,408
UAAL[3]	19.54%	22,076	18.60%	21,014
Total Contribution	**31.42%**	**$35,501**	**30.47%**	**$34,422**

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
[2] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[4] Applicable for members hired on or after January 1, 2015.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #9 – Plans M and N (2.0% @ 55 – TCA)				
Normal Cost	14.23%	$569	14.51%	$580
UAAL[3]	0.39%	16	0.00%	0
Total Contribution	**14.62%**	**$585**	**14.51%**	**$580**
Rate Group #9 – Plan U (2.5% @ 67 PEPRA)[4]				
Normal Cost	11.14%	$372	11.13%	$372
UAAL[3]	0.39%	13	0.00%	0
Total Contribution	**11.53%**	**$385**	**11.13%**	**$372**
Rate Group #9 – Plans M, N and U Combined				
Normal Cost	12.83%	$941	12.98%	$952
UAAL[3]	0.39%	29	0.00%	0
Total Contribution	**13.22%**	**$970**	**12.98%**	**$952**

1 These rates are after adjustment to the contribution rates for FY 20-21 for additional UAAL contributions made during calendar year 2019.
2 Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
3 UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
4 Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #10 – Plans I and J (2.7% @ 55 – OCFA)				
Normal Cost	14.75%	$2,056	14.71%	$2,050
UAAL[3]	14.06%	1,960	14.96%	2,085
Total Contribution	**28.81%**	**$4,016**	**29.67%**	**$4,135**
Rate Group #10 – Plans M and N (2.0% @ 55 – OCFA)				
Normal Cost	13.68%	$611	13.50%	$603
UAAL[3]	14.06%	628	14.96%	669
Total Contribution	**27.74%**	**$1,239**	**28.46%**	**$1,272**
Rate Group #10 – Plan U (2.5% @ 67 PEPRA)[4]				
Normal Cost	10.05%	$1,326	10.16%	$1,340
UAAL[3]	14.06%	1,855	14.96%	1,974
Total Contribution	**24.11%**	**$3,181**	**25.12%**	**$3,314**
Rate Group #10 – Plans I, J, M, N and U Combined				
Normal Cost	12.64%	$3,993	12.64%	$3,993
UAAL[3]	14.06%	4,443	14.96%	4,728
Total Contribution	**26.70%**	**$8,436**	**27.60%**	**$8,721**

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
[2] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[4] Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #11 – Plans M and N, future service (2.0% @ 55 – Cemetery)				
Normal Cost	11.62%	$133	12.05%	$138
UAAL[3,4]	3.01%	34	0.00%	0
Total Contribution	**14.63%**	**$167**	**12.05%**	**$138**
Rate Group #11 – Plan U (2.5% @ 67 PEPRA)[5]				
Normal Cost	12.25%	$65	12.33%	$65
UAAL[3,4]	3.01%	16	0.00%	0
Total Contribution	**15.26%**	**$81**	**12.33%**	**$65**
Rate Group #11 – Plans M, N and U Combined				
Normal Cost	11.83%	$198	12.13%	$203
UAAL[3,4]	3.01%	50	0.00%	0
Total Contribution	**14.84%**	**$248**	**12.13%**	**$203**

1 These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
2 Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
3 UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
4 December 31, 2018 UAAL rates after the phase-in is negative. Under CalPEPRA, the employer's contribution rate cannot be less than the Normal Cost unless the funded ratio is over 120% and other conditions in CalPEPRA are met.
5 Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Rate Group #12 – Plans G and H, future service (2.5% @ 55 – Law Library)				
Normal Cost	14.20%	$130	14.28%	$131
UAAL[2,3]	0.19%	2	1.77%	16
Total Contribution	**14.39%**	**$132**	**16.05%**	**$147**
Rate Group #12 – Plan U (2.5% @ 67 PEPRA)[4]				
Normal Cost	10.37%	$21	10.32%	$21
UAAL[2,3]	0.19%	0	1.77%	4
Total Contribution	**10.56%**	**$21**	**12.09%**	**$25**
Rate Group #12 – Plans G, H, future service, and U Combined				
Normal Cost	13.49%	$151	13.58%	$152
UAAL[2,3]	0.19%	2	1.77%	20
Total Contribution	**13.68%**	**$153**	**15.35%**	**$172**

1 Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
2 UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
3 UAAL rate has been adjusted to reflect future service only benefit improvement under 2.7% @ 55.
4 Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #6 – Plans E and F (3% @ 50 – Probation)				
Normal Cost	23.25%	$13,569	23.45%	$13,686
UAAL[3]	36.92%	21,547	32.28%	18,839
Total Contribution	**60.17%**	**$35,116**	**55.73%**	**$32,525**
Rate Group #6 – Plan V (2.7% @ 57 PEPRA)[4]				
Normal Cost	16.82%	$796	16.76%	$793
UAAL[3]	36.92%	1,747	32.28%	1,527
Total Contribution	**53.74%**	**$2,543**	**49.04%**	**$2,320**
Rate Group #6 – Plans E, F and V Combined				
Normal Cost	22.77%	$14,365	22.95%	$14,479
UAAL[3]	36.92%	23,294	32.28%	20,366
Total Contribution	**59.69%**	**$37,659**	**55.23%**	**$34,845**

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
[2] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[4] Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #7 – Plans E and F (3% @ 50 – Law Enforcement)				
Normal Cost	26.57%	$38,282	26.64%	$38,382
UAAL[3]	43.65%	62,890	40.71%	58,654
Total Contribution	**70.22%**	**$101,172**	**67.35%**	**$97,036**
Rate Group #7 – Plans Q and R (3% @ 55 – Law Enforcement)				
Normal Cost	23.58%	$11,375	23.48%	$11,327
UAAL[3]	43.65%	21,057	40.71%	19,639
Total Contribution	**67.23%**	**$32,432**	**64.19%**	**$30,966**
Rate Group #7 – Plan V (2.7% @ 57 PEPRA)[4]				
Normal Cost	18.46%	$12,488	19.04%	$12,881
UAAL[3]	43.65%	29,529	40.71%	27,540
Total Contribution	**62.11%**	**$42,017**	**59.75%**	**$40,421**
Rate Group #7 – Plans E, F, Q, R and V Combined				
Normal Cost	23.90%	$62,145	24.08%	$62,590
UAAL[3]	43.65%	113,476	40.71%	105,833
Total Contribution	**67.55%**	**$175,621**	**64.79%**	**$168,423**

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
[2] Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
[4] Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Group #8 – Plans E and F (3% @ 50 – OCFA)				
Normal Cost	27.48%	$27,411	26.97%	$26,903
UAAL[3]	23.79%	23,731	23.84%	23,780
Total Contribution	**51.27%**	**$51,142**	**50.81%**	**$50,683**
Rate Group #8 – Plans Q and R (3% @ 55 – OCFA)				
Normal Cost[4]	25.77%	$4,749	21.83%	$4,023
UAAL[3]	23.79%	4,384	23.84%	4,393
Total Contribution	**49.56%**	**$9,133**	**45.67%**	**$8,416**
Rate Group #8 – Plan V (2.7% @ 57 PEPRA)[5]				
Normal Cost	15.66%	$4,593	15.27%	$4,478
UAAL[3]	23.79%	6,977	23.84%	6,992
Total Contribution	**39.45%**	**$11,570**	**39.11%**	**$11,470**
Rate Group #8 – Plans E, F, Q, R and V Combined				
Normal Cost	24.92%	$36,753	24.00%	$35,404
UAAL[3]	23.79%	35,092	23.84%	35,165
Total Contribution	**48.71%**	**$71,845**	**47.84%**	**$70,569**

1 These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
2 Amounts are based on December 31, 2019 projected compensation as shown on the page 45.
3 UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
4 The increase in the employer Normal Cost rate from last year to this year is primarily due to the 61 new hires from the City of Garden Grove. The average entry age has changed from 26.4 to 32.0.
5 Applicable for members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount[2] ($ in '000s)	Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
Rate Groups #1 – #12				
Normal Cost	14.83%	$289,579	14.79%	$288,876
UAAL[3]	26.66%	520,532	24.69%	482,073
Total Contribution	**41.49%**	**$810,111**	**39.48%**	**$770,949**

[1] These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.

[2] Amounts are based on December 31, 2019 projected compensation ($ in '000s):

General Employers		General Employers		Safety Employers	
Rate Group #1 – Plans A and B	$40,712	Rate Group #3 – Plans G and H	$44,209	Rate Group #6 – Plans E and F	$58,362
Rate Group #1 – Plan U	49,908	Rate Group #3 – Plan B	6,357	Rate Group #6 – Plan V	4,731
Rate Group #2 – Plans I and J non-Children and Families Commission	775,614	Rate Group #3 – Plan U	25,826	Rate Group #7 – Plans E and F	144,078
		Rate Group #5 – Plans A and B	87,168	Rate Group #7 – Plans Q and R	48,241
Rate Group #2 – Plans I and J Children and Families Commission	554	Rate Group #5 – Plan U	25,811	Rate Group #7 – Plan V	67,650
		Rate Group #9 – Plans M and N	3,996	Rate Group #8 – Plans E and F	99,750
Rate Group #2 – Plans O and P	15,033	Rate Group #9 – Plan U	3,339	Rate Group #8 – Plans Q and R	18,428
Rate Group #2 – Plan S	1,956	Rate Group #10 – Plans I and J	13,937	Rate Group #8 – Plan V	29,328
Rate Group #2 – Plan T	339,610	Rate Group #10 – Plans M and N	4,470		
Rate Group #2 – Plan U non-Children and Families Commission	26,599	Rate Group #10 – Plan U	13,192		
		Rate Group #11 – Plans M and N	1,143		
Rate Group #2 – Plan U Children and Families Commission	730	Rate Group #11 – Plan U	531		
		Rate Group #12 – Plans G and H	917		
Rate Group #2 – Plan W	152	Rate Group #12 – Plan U	202		
				Total Combined	$1,952,534

[3] UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2019 Actuarial Valuation		December 31, 2018 Actuarial Valuation	
	Contribution Rate[2]	Contribution Rate[3]	Contribution Rate[1,2]	Contribution Rate[1,3]
Rate Group #2 – Plans I and J (2.7% @ 55 – non-OCFA)				
Normal Cost	14.34%	14.34%	14.36%	14.36%
UAAL[4]	26.16%	27.38%	23.91%	25.05%
Total Contributions	**40.50%**	**41.72%**	**38.27%**	**39.41%**
Rate Group #2 – Plan U (2.5% @ 67 PEPRA)[5]				
Normal Cost	8.81%	8.81%	8.78%	8.78%
UAAL[4]	26.16%	27.38%	23.91%	25.05%
Total Contributions	**34.97%**	**36.19%**	**32.69%**	**33.83%**

1 These rates reflect 2/3 phase-in UAAL cost impact of the changes in actuarial assumptions from the December 31, 2017 valuation.
2 These rates are after reflecting future service only benefit improvements under 2.7% @ 55.
3 These rates are before reflecting future service only benefit improvements under 2.7% @ 55.
4 UAAL rate has been adjusted to reflect 18-month delay between date of valuation and date of rate implementation.
5 Applicable for Orange County Employees Retirement System members hired on or after January 1, 2013.

Section 2: Actuarial Valuation Results

"Pick-Up" Discount Percentages for Non-PEPRA Tier Members

For every dollar of member contribution "picked up" by the employer for non-PEPRA tier members and not deposited in the member's contribution account, the employer can contribute less than a dollar. This is because the "pick-up" amount is not deposited in the member's contribution account and so is not payable to a member who withdraws his or her contributions following termination of employment, and is not payable as an additional death benefit. The contribution discount percentages are as follows:

	December 31, 2019 Pick Up Percentage		December 31, 2018 Pick Up Percentage	
General Members				
Rate Group #1 Plan A/B (non-OCTA, non-OCSD)	Plan A: 100.00%	Plan B: 98.37%	Plan A: 100.00%	Plan B: 98.28%
Rate Group #2 (2.7% @ 55 – non-OCFA)	Plan I: 99.40%	Plan J: 98.52%	Plan I: 99.38%	Plan J: 98.45%
Rate Group #2 (1.62% @ 65)	Plan O: N/A	Plan P: 97.76%	Plan O: N/A	Plan P: 97.56%
Rate Group #2 (2.0% @ 57)		Plan S: 97.94%		Plan S: 97.92%
Rate Group #3 (2.5% @ 55 – OCSD)	Plan G: 100.00%	Plan H: 98.67%	Plan G: 100.00%	Plan H: 98.61%
Rate Group #3 (1.64% @ 57 – OCSD)		Plan B: 97.83%		Plan B: 97.71%
Rate Group #5 Plan A/B (OCTA)	Plan A: 100.00%	Plan B: 97.77%	Plan A: 100.00%	Plan B: 97.63%
Rate Group #9 (2.0% @ 55 – TCA)	Plan M: N/A	Plan N: 98.59%	Plan M: N/A	Plan N: 98.39%
Rate Group #10 (2.7% @ 55 – OCFA)	Plan I: N/A	Plan J: 98.71%	Plan I: N/A	Plan J: 98.62%
Rate Group #10 (2.0% @ 55 – OCFA)	Plan M: N/A	Plan N: 97.70%	Plan M: N/A	Plan N: 97.50%
Rate Group #11 (2.0% @ 55 – Cemetery)	Plan M: N/A	Plan N: 98.69%	Plan M: N/A	Plan N: 98.61%
Rate Group #12 (2.5% @ 55 – Law Library)	Plan G: N/A	Plan H: 98.82%	Plan G: N/A	Plan H: 98.86%
Safety Members				
Rate Group #6 (3.0% @ 50 – Probation)	Plan E: N/A	Plan F: 99.49%	Plan E: N/A	Plan F: 99.47%
Rate Group #7 (3.0% @ 50 – Law Enforcement)	Plan E: N/A	Plan F: 99.73%	Plan E: N/A	Plan F: 99.71%
Rate Group #7 (3.0% @ 55 – Law Enforcement)	Plan Q: N/A	Plan R: 99.47%	Plan Q: N/A	Plan R: 99.42%
Rate Group #8 (3.0% @ 50 – OCFA)	Plan E: N/A	Plan F: 99.66%	Plan E: N/A	Plan F: 99.64%
Rate Group #8 (3.0% @ 55 – OCFA)	Plan Q: N/A	Plan R: 99.33%	Plan Q: N/A	Plan R: 99.43%

Section 2: Actuarial Valuation Results

"Pick-Up" Average Entry Age

The following table provides the average entry age by employer used in determining the "pick-up" contributions under Section 31581.1.

Employer	Code	Average Entry Age for All non PEPRA Members
General		
Orange County	101	31
Cemetery District	102	28
Law Library	103	41
Retirement System	105	31
OCFA	106	33
Transportation Corridor Agency	109	36
City of San Juan Capistrano	110	33
Sanitation District	111	33
OCTA	112	35
Children & Families Commission	118	27
Local Agency Formation Commission	119	38
Superior Court	121	32
IHSS Public Authority	122	42
Safety		
Probation	101	27
Law Enforcement	101	27
OCFA	106	29

Section 2: Actuarial Valuation Results

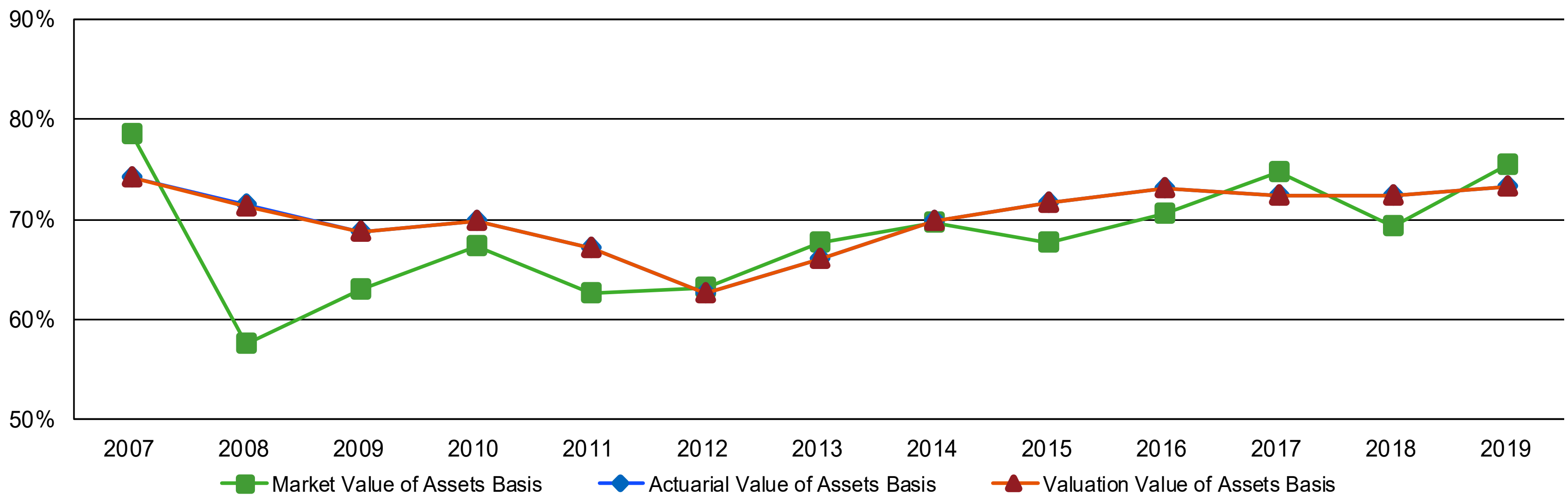
G. Funded Status

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

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

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

Funded Ratio for Years Ended December 31, 2007 – 2019



Section 2: Actuarial Valuation Results

Schedule of Funding Progress for Years Ended December 31, 2010 – 2019

Actuarial Valuation Date as of December 31	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (%) (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll (%) [(b) - (a)] / (c)
2010	$8,672,592,000	$12,425,873,000	$3,753,281,000	69.79%	$1,579,239,000	237.66%
2011	9,064,355,000	13,522,978,000	4,458,623,000	67.03%	1,619,474,000	275.31%
2012	9,469,208,000	15,144,888,000	5,675,680,000	62.52%	1,609,600,000	352.55%
2013	10,417,125,000	15,785,042,000	5,367,917,000	65.99%	1,604,496,000	334.55%
2014	11,449,911,000	16,413,124,000	4,963,213,000	69.76%	1,648,160,000	301.14%
2015	12,228,009,000	17,050,357,000	4,822,348,000	71.72%	1,633,112,000	295.29%
2016	13,102,978,000	17,933,461,000	4,830,483,000	73.06%	1,759,831,000	274.49%
2017	14,197,125,000	19,635,427,000	5,438,302,000	72.30%	1,811,877,000	300.15%
2018	14,994,420,000	20,703,349,000	5,708,929,000	72.43%	1,875,370,000	304.42%
2019	16,036,869,000	21,916,730,000	5,879,861,000	73.17%	1,952,534,000	301.14%

For informational purposes only, we have also developed the funded ratio determined using the historical market value of assets after adjustment for amounts in the County Investment Account (funded by pension obligation bond proceeds held by OCERS), prepaid employer contributions, O.C. Sanitation District UAAL Deferred Account (after transfer), unclaimed member reserve and Medicare Medical Insurance Reserve.

Actuarial Valuation Date December 31	Funded Ratio Based on Net Market Value of Assets
2010	67.25%
2011	62.60%
2012	63.17%
2013	67.65%
2014	69.63%

Actuarial Valuation Date December 31	Funded Ratio Based on Net Market Value of Assets
2015	67.73%
2016	70.58%
2017	74.62%
2018	69.31%
2019	75.36%

Section 2: Actuarial Valuation Results

H. Actuarial Balance Sheet

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

Second, this Actuarial Present Value of Future Benefits is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer Normal Cost contributions, and the present value of future employer amortization payments for the Unfunded Actuarial Accrued Liability.

Actuarial Balance Sheet

	Year Ended	
	December 31, 2019 ($ in '000s)	**December 31, 2018 ($ in '000s)**
Actuarial present value of future benefits		
• Present value of benefits for retired members and beneficiaries	$12,631,182	$11,569,064
• Present value of benefits for inactive vested members	500,271	449,290
• Present value of benefits for active members	13,405,109	13,159,391
Total actuarial present value of future benefits	**$26,536,562**	**$25,177,745**
Current and future assets		
• Total Valuation Value of Assets	$16,036,869	$14,994,420
• Present value of future contributions by members[1]	$2,130,254	2,048,080
• Present value of future employer contributions for:		
• Entry age normal cost	2,489,578	2,426,316
• Unfunded actuarial accrued liability	5,879,861	5,708,929
Total of current and future assets	**$26,536,562**	**$25,177,745**

[1] This includes members who chose to leave their contributions on deposit even though they have less than five years of service.

Section 2: Actuarial Valuation Results

I. Volatility Ratios

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

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

The current AVR is about 8.5. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 8.5% of one year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

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

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions. The current total plan LVR is about 11.2, but is 9.9 for General compared to 15.3 for Safety. This means that assumption changes will have a greater impact on employer contribution rates for Safety than for General.

The chart on the next page shows how the asset and liability volatility ratios have varied over time.

Section 2: Actuarial Valuation Results

Volatility Ratios for Years Ended 2010 – 2019

Year Ended December 31	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
2010	4.7	7.3	5.3	7.0	10.9	7.9
2011	4.7	7.1	5.2	7.6	10.9	8.4
2012	5.3	8.1	5.9	8.6	12.3	9.4
2013	6.0	8.9	6.7	9.0	12.6	9.8
2014	6.2	9.4	6.9	8.9	13.6	10.0
2015	6.3	9.6	7.1	9.3	14.3	10.4
2016	6.4	9.9	7.2	9.0	14.2	10.2
2017	7.2	11.0	8.1	9.6	14.8	10.8
2018	6.8	10.5	7.7	9.8	15.2	11.0
2019	7.5	11.5	8.5	9.9	15.3	11.2

Section 2: Actuarial Valuation Results

J. Risk Assessment

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

This report does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. We recommend a more detailed assessment of the risks to provide the Board with a better understanding of the risks inherent in the Plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Board to highlight and illustrate particular risks or potential future outcomes they may be interested in discussing and could include scenario testing, sensitivity testing, stress testing and stochastic modeling. As noted in the valuation highlights section of this report the results of our more detailed risk assessment will be provided in a separate stand-alone report. We will include within that report investment return scenarios that demonstrate the effects of short-term market volatility on funded status and contribution rates, which may aid in illustrating the effect on the plan of market volatility that can result from events such as COVID-19.

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

Risk Assessments

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

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

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

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

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial condition of the Plan, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the Actuarial Value of Assets,

Section 2: Actuarial Valuation Results

however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection I, Volatility Ratios*, on page 52, a 1% asset gain or loss (relative to the assumed investment return) translates to about 8.5 of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The year-by-year market value rate of return over the last 10 years has ranged from a low of -2.46% to a high of 14.79%.

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

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

- Other Risks

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

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

Evaluation of Historical Trends

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

- The funded percentage on the Valuation Value of Assets has increased from 69.8% to 73.2%. This is primarily due to contributions made to amortize the UAAL (i.e., amortizing each gain/loss layer of UAAL over 20 years). For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 49.
- The geometric average investment return on the Actuarial Value of Assets over the last 10 years was 5.90%. This includes a high of 9.11% return and a low of 3.28%. The average over the last 5 years was 6.17%. For more details see the Investment Return table in *Section 2, Subsection C* on page 25.

Section 2: Actuarial Valuation Results

- Beyond investment losses, the primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. While the assumption changes in 2014 decreased the unfunded liability by $103 million, the assumption changes in 2017 that changed the discount rate from 7.25% to 7.00% (as well as various other changes) added $822 million in unfunded liability. For more details on unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 86. A graphical representation of historical changes in UAAL by source will be included in the stand-alone risk assessment report.
- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in the *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 98 and 99.

Maturity Measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.59 to 0.83. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative to understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 16.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. Over the past year, benefits paid and contributions received were relatively equal despite the plan having a funded ratio of 73.2%, since the ratio of members in pay status to active participants is still below 1. However, this may change as the plan matures and the ratio of members in pay status to active participants increases to above 1. For more details on historical cash flows see the Comparison of Contributions Made with Benefits in *Section 2, Subsection B* on page 20.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection I, Volatility Ratios* on page 53.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	22,257	21,929	1.5%
• Average age	44.9	45.1	-0.2
• Average years of service	12.5	12.8	-0.3
• Total projected compensation	$1,952,534,335	$1,875,371,661	4.1%
• Average projected compensation	$87,727	$85,520	2.6%
• Account balances	$3,116,706,969	$2,980,107,630	4.6%
• Total active vested members	15,717	15,903	-1.2%
Inactive vested members:[1]			
• Number	6,520	6,026	8.2%
• Average Age	44.7	44.9	-0.2
Retired members:			
• Number in pay status	14,449	13,827	4.5%
• Average age	70.1	70.0	0.1
• Average monthly benefit[2]	$4,413	$4,237	4.2%
Disabled members:			
• Number in pay status	1,505	1,482	1.6%
• Average age	65.7	65.5	0.2
• Average monthly benefit[2]	$3,911	$3,750	4.3%
Beneficiaries:			
• Number in pay status	2,466	2,365	4.3%
• Average age	73.1	72.9	0.2
• Average monthly benefit[2]	$2,205	$2,116	4.2%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #1 for Plans A, B and U (Non-OCTA, Non-OCSD)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	1,650	1,613	2.3%
• Average age	42.9	43.0	-0.1
• Average years of service	9.3	9.7	-0.4
• Total projected compensation	$90,620,091	$88,176,419	2.8%
• Average projected compensation	$54,921	$54,666	0.5%
• Account balances	$64,253,545	$60,833,185	5.6%
• Total active vested members	970	911	6.5%
Inactive vested members:[1]			
• Number	581	516	12.6%
• Average Age	41.9	41.8	0.1
Retired members:			
• Number in pay status	650	636	2.2%
• Average age	75.2	75.0	0.2
• Average monthly benefit[2]	$2,768	$2,709	2.2%
Disabled members:			
• Number in pay status	38	37	2.7%
• Average age	68.1	67.2	0.9
• Average monthly benefit[2]	$2,438	$2,408	1.2%
Beneficiaries:			
• Number in pay status	98	98	0.0%
• Average age	76.7	76.5	0.2
• Average monthly benefit[2]	$1,571	$1,438	9.2%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #2 for Plans I, J, O, P, S, T, U AND W

Category	Year Ended December 31 2019	2018	Change From Prior Year
Active members in valuation:			
• Number	14,339	14,267	0.5%
• Average age	45.4	45.6	-0.2
• Average years of service	12.6	12.8	-0.2
• Total projected compensation	$1,160,247,859	$1,127,951,040	2.9%
• Average projected compensation	$80,916	$79,060	2.3%
• Account balances	$2,114,331,924	$2,035,013,710	3.9%
• Total active vested members	10,068	10,201	-1.3%
Inactive vested members:[1]			
• Number	4,371	4,078	7.2%
• Average Age	44.7	44.9	-0.2
Retired members:			
• Number in pay status	9,828	9,432	4.2%
• Average age	71.1	71.0	0.1
• Average monthly benefit[2]	$3,939	$3,787	4.0%
Disabled members:			
• Number in pay status	570	575	-0.9%
• Average age	67.0	67.0	0
• Average monthly benefit[2]	$2,666	$2,558	4.2%
Beneficiaries:			
• Number in pay status	1,553	1,489	4.3%
• Average age	75.2	75.0	0.2
• Average monthly benefit[2]	$1,983	$1,907	4.0%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #3 for Plans B, G, H and U (OCSD)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	608	616	-1.3%
• Average age	47.3	47.3	0.0
• Average years of service	12.3	12.3	0.0
• Total projected compensation	$76,392,296	$73,563,905	3.8%
• Average projected compensation	$125,645	$119,422	5.2%
• Account balances	$95,709,705	$93,152,393	2.7%
• Total active vested members	432	433	-0.2%
Inactive vested members:[1]			
• Number	135	117	15.4%
• Average Age	46.7	47.3	-0.6
Retired members:			
• Number in pay status	410	390	5.1%
• Average age	68.4	68.2	0.2
• Average monthly benefit[2]	$5,823	$5,575	4.4%
Disabled members:			
• Number in pay status	19	17	11.8%
• Average age	65.9	65.8	0.1
• Average monthly benefit[2]	$3,830	$3,586	6.8%
Beneficiaries:			
• Number in pay status	79	79	0.0%
• Average age	70.2	70.3	-0.1
• Average monthly benefit[2]	$2,536	$2,406	5.4%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #5 for Plans A, B and U (OCTA)

Category	Year Ended December 31 2019	2018	Change From Prior Year
Active members in valuation:			
• Number	1,350	1,279	5.6%
• Average age	49.6	50.1	-0.5
• Average years of service	12.8	13.7	-0.9
• Total projected compensation	$112,979,357	$105,327,147	7.3%
• Average projected compensation	$83,688	$82,351	1.6%
• Account balances	$134,348,956	$130,715,191	2.8%
• Total active vested members	959	993	-3.4%
Inactive vested members:[1]			
• Number	636	590	7.8%
• Average Age	49.7	49.6	0.1
Retired members:			
• Number in pay status	992	965	2.8%
• Average age	70.6	70.1	0.5
• Average monthly benefit[2]	$2,659	$2,568	3.5%
Disabled members:			
• Number in pay status	268	261	2.7%
• Average age	66.9	66.5	0.4
• Average monthly benefit[2]	$2,483	$2,373	4.6%
Beneficiaries:			
• Number in pay status	187	176	6.3%
• Average age	72.3	71.4	0.9
• Average monthly benefit[2]	$1,452	$1,380	5.2%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #9 for Plans M, N and U (TCA)

Category	Year Ended December 31 2019	2018	Change From Prior Year
Active members in valuation:			
• Number	61	62	-1.6%
• Average age	48.7	48.8	-0.1
• Average years of service	9.2	8.3	0.9
• Total projected compensation	$7,334,734	$7,061,833	3.9%
• Average projected compensation	$120,242	$113,901	5.6%
• Account balances	$5,992,102	$5,011,037	19.6%
• Total active vested members	33	31	6.5%
Inactive vested members:[1]			
• Number	67	62	8.1%
• Average Age	45.8	44.9	0.9
Retired members:			
• Number in pay status	51	50	2.0%
• Average age	69.5	68.9	0.6
• Average monthly benefit[2]	$3,276	$3,073	6.6%
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[2]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	4	4	0.0%
• Average age	72.0	71.0	1.0
• Average monthly benefit[2]	$478	$464	3.0%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #10 for Plans I, J, M, N and U (OCFA)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	310	274	13.1%
• Average age	44.7	45.5	-0.8
• Average years of service[1]	10.2	11.2	-1.0
• Total projected compensation	$31,598,713	$27,222,325	16.1%
• Average projected compensation	$101,931	$99,352	2.6%
• Account balances	$30,922,866	$28,959,317	6.8%
• Total active vested members	173	171	1.2%
Inactive vested members:[2]			
• Number	209	178	17.4%
• Average Age	41.9	42.1	-0.2
Retired members:			
• Number in pay status	172	162	6.2%
• Average age	66.4	66.0	0.4
• Average monthly benefit[3]	$4,662	$4,550	2.5%
Disabled members:			
• Number in pay status	11	11	0.0%
• Average age	62.2	61.2	1.0
• Average monthly benefit[3]	$3,004	$2,660	12.9%
Beneficiaries:			
• Number in pay status	13	12	8.3%
• Average age	63.7	65.7	-2.0
• Average monthly benefit[3]	$1,542	$1,311	17.6%

[1] For some former Santa Ana members, service used in calculating the average above is only used for vesting purposes. Benefit service starts to accrue only effective April 2012.

[2] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.

[3] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #11 for Plans M and N, Future Service, and U (Cemetery)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	24	25	-4.0%
• Average age	49.3	50.3	-1.0
• Average years of service	14.9	16.7	-1.8
• Total projected compensation	$1,674,297	$1,643,501	1.9%
• Average projected compensation	$69,762	$65,740	6.1%
• Account balances	$2,226,124	$2,483,310	-10.4%
• Total active vested members	16	18	-11.1%
Inactive vested members:[1]			
• Number	2	2	0.0%
• Average Age	41.1	40.1	1.0
Retired members:			
• Number in pay status	7	4	75.0%
• Average age	72.3	76.2	-3.9
• Average monthly benefit[2]	$3,065	$2,730	12.3%
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[2]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	6	5	20.0%
• Average age	76.5	80.2	-3.7
• Average monthly benefit[2]	$1,501	$1,523	-1.4%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #12 for Plans G, H, Future Service, and U (Law Library)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	14	14	0.0%
• Average age	58.2	57.2	1.0
• Average years of service	17.4	16.4	1.0
• Total projected compensation	$1,119,047	$1,095,420	2.2%
• Average projected compensation	$79,932	$78,244	2.2%
• Account balances	$2,652,511	$2,390,529	11.0%
• Total active vested members	12	12	0.0%
Inactive vested members:[1]			
• Number	3	4	-25.0%
• Average Age	45.4	49.6	-4.2
Retired members:			
• Number in pay status	13	12	8.3%
• Average age	72.7	72.2	0.5
• Average monthly benefit[2]	$3,019	$3,058	-1.3%
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[2]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[2]	N/A	N/A	N/A

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #6 for Plans E, F and V (Probation)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	736	764	-3.7%
• Average age	44.6	44.6	0.0
• Average years of service	17.2	17.1	0.1
• Total projected compensation	$63,093,762	$64,229,791	-1.8%
• Average projected compensation	$85,725	$84,070	2.0%
• Account balances	$148,763,700	$145,104,870	2.5%
• Total active vested members	669	713	-6.2%
Inactive vested members:[1]			
• Number	222	222	0.0%
• Average Age	42.4	41.9	0.5
Retired members:			
• Number in pay status	376	332	13.3%
• Average age	65.6	66.0	-0.4
• Average monthly benefit[2]	$5,672	$5,632	0.7%
Disabled members:			
• Number in pay status	33	31	6.5%
• Average age	55.6	55.9	-0.3
• Average monthly benefit[2]	$3,052	$2,973	2.7%
Beneficiaries:			
• Number in pay status	28	27	3.7%
• Average age	65.3	64.9	0.4
• Average monthly benefit[2]	$2,469	$2,444	1.0%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #7 for Plans E, F, Q, R and V (Law Enforcement)

Category	Year Ended December 31 2019	Year Ended December 31 2018	Change From Prior Year
Active members in valuation:			
• Number	2,059	2,027	1.6%
• Average age	40.5	40.9	-0.4
• Average years of service	12.6	13.1	-0.5
• Total projected compensation	$259,968,109	$246,706,193	5.4%
• Average projected compensation	$126,259	$121,710	3.7%
• Account balances	$348,748,071	$324,646,722	7.4%
• Total active vested members	1,554	1,608	-3.4%
Inactive vested members:[1]			
• Number	194	179	8.4%
• Average Age	43.3	43.3	0.0
Retired members:			
• Number in pay status	1,489	1,402	6.2%
• Average age	64.2	64.0	0.2
• Average monthly benefit[2]	$7,412	$7,128	4.0%
Disabled members:			
• Number in pay status	370	368	0.5%
• Average age	63.8	63.4	0.4
• Average monthly benefit[2]	$5,465	$5,266	3.8%
Beneficiaries:			
• Number in pay status	385	370	4.1%
• Average age	68.5	68.1	0.4
• Average monthly benefit[2]	$3,250	$3,114	4.4%

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.
[2] Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Rate Group #8 for Plans E, F, Q, R and V (OCFA)

Category	Year Ended December 31 2019	2018	Change From Prior Year
Active members in valuation:			
• Number	1,106	988	11.9%
• Average age	42.5	43.2	-0.7
• Average years of service[1]	12.5	13.9	-1.4
• Total projected compensation	$147,506,069	$132,394,088	11.4%
• Average projected compensation	$133,369	$134,002	-0.5%
• Account balances	$168,757,464	$151,797,366	11.2%
• Total active vested members	831	812	2.3%
Inactive vested members:[2]			
• Number	100	78	28.2%
• Average Age	41.0	43.5	-2.5
Retired members:			
• Number in pay status	460	441	4.3%
• Average age	65.3	64.9	0.4
• Average monthly benefit[3]	$8,780	$8,376	4.8%
Disabled members:			
• Number in pay status	196	182	7.7%
• Average age	65.2	65.0	0.2
• Average monthly benefit[2]	$7,035	$6,912	1.8%
Beneficiaries:			
• Number in pay status	113	105	7.6%
• Average age	63.4	62.8	0.6
• Average monthly benefit[2]	$3,380	$3,305	2.3%

1 For some former Santa Ana members, service used in calculating the average above is only used for vesting purposes. Benefit service starts to accrue only effective April 2012. In addition, there were 61 members in Plan R hired from City of Garden Grove in 2019 whose benefit service starts to accrue only effective in calendar year 2019.

2 Includes members who chose to leave their contributions on deposit even though they have less than five years of service.

3 Excludes monthly benefits payable from the STAR COLA.

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation

Total Plan

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	376	373	3	- -	- -	- -	- -	- -	- -	- -
	$60,949	$60,805	$78,834	- -	- -	- -	- -	- -	- -	- -
25 – 29	1,880	1,659	220	1	- -	- -	- -	- -	- -	- -
	67,613	65,707	81,707	$128,464	- -	- -	- -	- -	- -	- -
30 – 34	2,703	1,662	775	260	6	- -	- -	- -	- -	- -
	77,966	71,593	89,986	82,887	$77,375	- -	- -	- -	- -	- -
35 – 39	3,055	1,073	691	1,069	218	4	- -	- -	- -	- -
	86,849	76,922	95,320	91,754	84,942	$79,157	- -	- -	- -	- -
40 – 44	3,218	688	434	991	824	277	4	- -	- -	- -
	90,823	79,090	95,350	94,882	91,440	96,678	$79,646	- -	- -	- -
45 – 49	3,418	519	313	703	821	783	275	4	- -	- -
	96,259	81,998	97,388	91,956	96,900	105,605	103,802	$135,461	- -	- -
50 – 54	3,184	427	276	466	594	598	634	189	- -	- -
	96,439	86,171	98,531	87,770	95,551	101,766	102,689	102,922	- -	- -
55 – 59	2,271	281	230	372	407	393	339	203	45	1
	93,527	87,627	105,229	89,234	90,376	97,017	93,265	99,210	$80,804	$75,640
60 – 64	1,403	145	172	219	252	223	225	120	42	5
	88,351	85,166	99,851	87,084	82,051	90,359	88,327	85,266	94,417	92,808
65 – 69	520	49	47	84	122	87	63	46	14	8
	85,112	95,320	88,065	77,723	84,775	91,621	76,473	88,008	81,464	74,956
70 & over	229	11	18	38	55	43	36	16	8	4
	76,344	69,599	81,075	70,738	81,057	71,284	78,624	81,538	65,256	97,310
Total	**22,257**	**6,887**	**3,179**	**4,203**	**3,299**	**2,408**	**1,576**	**578**	**109**	**18**
	$87,727	**$73,964**	**$94,322**	**$90,607**	**$91,816**	**$99,649**	**$97,149**	**$96,399**	**$84,993**	**$84,920**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #1 for Plans A, B and U (Non-OCTA, Non-OCSD)

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	54	54	- -	- -	- -	- -	- -	- -	- -	- -
	$60,137	$60,137	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	210	180	30	- -	- -	- -	- -	- -	- -	- -
	52,190	51,635	$55,519	- -	- -	- -	- -	- -	- -	- -
30 – 34	267	172	78	16	1	- -	- -	- -	- -	- -
	52,649	50,562	56,551	$56,181	$50,857	- -	- -	- -	- -	- -
35 – 39	227	104	65	46	11	1	- -	- -	- -	- -
	54,248	50,083	56,745	58,514	60,741	$57,599	- -	- -	- -	- -
40 – 44	217	70	42	48	44	13	- -	- -	- -	- -
	55,009	48,860	57,414	58,141	58,326	57,553	- -	- -	- -	- -
45 – 49	213	43	35	46	42	31	16	- -	- -	- -
	56,547	48,725	56,956	59,809	58,054	59,083	$58,424	- -	- -	- -
50 – 54	151	28	24	34	24	10	29	2	- -	- -
	56,279	48,735	56,153	57,100	57,904	58,617	60,493	$57,106	- -	- -
55 – 59	124	22	30	17	17	13	18	6	1	- -
	55,944	49,563	55,828	57,735	57,533	57,857	58,418	58,415	$58,176	- -
60 – 64	118	12	30	13	17	6	29	8	3	- -
	57,043	50,236	56,632	58,684	57,355	57,543	58,311	59,994	58,387	- -
65 – 69	47	4	8	7	6	2	11	7	1	1
	56,618	48,478	57,636	58,335	55,683	56,025	58,286	57,336	54,538	$54,538
70 & over	22	1	3	4	3	4	4	3	- -	- -
	56,010	34,615	55,325	56,756	55,369	56,370	58,549	59,606	- -	- -
Total	**1,650**	**690**	**345**	**231**	**165**	**80**	**107**	**26**	**5**	**1**
	$54,921	**$51,085**	**$56,575**	**$58,241**	**$57,980**	**$58,231**	**$58,944**	**$58,647**	**$57,575**	**$54,538**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #2 for Plans I, J, O, P, S, T, U and W

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	220	219	1	- -	- -	- -	- -	- -	- -	- -
	$52,693	$52,706	$49,842	- -	- -	- -	- -	- -	- -	- -
25 – 29	1,113	1,010	103	- -	- -	- -	- -	- -	- -	- -
	59,621	59,211	63,647	- -	- -	- -	- -	- -	- -	- -
30 – 34	1,676	1,109	399	165	3	- -	- -	- -	- -	- -
	70,671	69,160	76,516	$66,679	$71,186	- -	- -	- -	- -	- -
35 – 39	1,940	707	390	691	150	2	- -	- -	- -	- -
	79,190	73,370	86,238	82,183	74,805	$56,678	- -	- -	- -	- -
40 – 44	2,030	476	253	649	484	165	3	- -	- -	- -
	83,152	77,946	86,741	86,704	82,212	81,627	$73,592	- -	- -	- -
45 – 49	2,197	341	186	502	555	450	160	3	- -	- -
	88,526	80,924	89,140	86,539	92,533	92,147	85,517	$123,309	- -	- -
50 – 54	2,131	250	169	342	398	411	425	136	- -	- -
	88,321	81,150	88,713	85,018	89,411	93,538	89,592	86,403	- -	- -
55 – 59	1,556	184	113	282	266	292	239	144	35	1
	87,944	84,888	94,433	84,997	87,977	93,383	85,814	88,940	$71,993	$75,640
60 – 64	927	99	74	164	165	170	147	85	19	4
	83,381	84,318	89,768	83,868	79,788	84,947	83,986	78,923	83,068	77,712
65 – 69	368	34	24	65	86	73	41	32	7	6
	83,706	95,375	87,193	77,292	81,126	93,075	73,282	84,853	69,514	77,785
70 & over	181	9	11	32	47	36	25	10	8	3
	76,146	73,062	73,598	72,831	82,547	69,751	76,268	85,648	65,256	102,917
Total	**14,339**	**4,438**	**1,723**	**2,892**	**2,154**	**1,599**	**1,040**	**410**	**69**	**14**
	$80,916	**$70,475**	**$83,867**	**$83,561**	**$86,160**	**$90,373**	**$86,295**	**$85,874**	**$74,010**	**$82,996**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #3 for Plans B, G, H and U (OCSD)

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	$87,249	$87,249	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	32	28	4	- -	- -	- -	- -	- -	- -	- -
	96,262	96,445	$94,984	- -	- -	- -	- -	- -	- -	- -
30 – 34	57	39	16	2	- -	- -	- -	- -	- -	- -
	103,624	98,899	114,240	$110,845	- -	- -	- -	- -	- -	- -
35 – 39	101	52	23	19	7	- -	- -	- -	- -	- -
	117,904	108,655	123,529	131,523	$131,162	- -	- -	- -	- -	- -
40 – 44	74	21	20	19	14	- -	- -	- -	- -	- -
	122,005	112,405	122,857	137,226	114,529	- -	- -	- -	- -	- -
45 – 49	77	24	13	20	10	2	8	- -	- -	- -
	129,357	120,340	136,853	125,219	139,302	$130,477	$141,866	- -	- -	- -
50 – 54	102	15	9	12	19	13	29	5	- -	- -
	140,524	120,041	142,976	148,930	139,231	151,338	143,553	$136,612	- -	- -
55 – 59	84	12	13	19	13	10	13	3	1	- -
	136,924	116,204	129,805	133,620	136,330	143,916	160,820	145,519	$142,214	- -
60 – 64	51	4	8	10	9	9	7	4	- -	- -
	135,763	127,384	125,749	114,255	129,326	153,142	156,682	156,710	- -	- -
65 – 69	21	5	3	0	6	2	3	1	1	- -
	130,995	132,841	107,165	0	137,320	136,829	135,377	147,400	114,091	- -
70 & over	8	0	1	0	1	1	3	2	0	- -
	113,883	0	132,465	$0	101,917	145,429	115,613	92,207	0	- -
Total	**608**	**201**	**110**	**101**	**79**	**37**	**63**	**15**	**2**	**- -**
	$125,645	**$109,016**	**$124,722**	**$131,691**	**$131,924**	**$147,699**	**$146,641**	**$138,551**	**$128,152**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #5 for Plans A, B and U (OCTA)

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	13	13	- -	- -	- -	- -	- -	- -	- -	- -
	$62,119	$62,119	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	76	70	6	- -	- -	- -	- -	- -	- -	- -
	61,544	60,304	$76,004	- -	- -	- -	- -	- -	- -	- -
30 – 34	88	64	20	4	- -	- -	- -	- -	- -	- -
	71,631	67,757	82,333	$80,113	- -	- -	- -	- -	- -	- -
35 – 39	106	50	19	29	8	- -	- -	- -	- -	- -
	85,638	77,909	102,305	86,741	$90,361	- -	- -	- -	- -	- -
40 – 44	154	48	26	34	41	5	- -	- -	- -	- -
	84,757	76,472	88,910	88,747	84,492	$117,755	- -	- -	- -	- -
45 – 49	180	56	24	41	39	14	6	- -	- -	- -
	83,080	72,708	94,420	87,689	78,483	102,376	$87,882	- -	- -	- -
50 – 54	235	58	33	40	55	28	15	6	- -	- -
	84,312	65,990	100,852	86,331	86,116	86,871	101,180	$86,344	- -	- -
55 – 59	247	29	21	38	73	30	30	21	5	- -
	88,068	66,108	112,839	93,696	79,953	88,038	97,338	97,433	$92,319	- -
60 – 64	181	18	16	22	42	25	28	16	13	1
	91,471	78,361	87,890	92,848	81,354	101,421	105,453	94,000	87,273	$153,189
65 – 69	58	3	6	10	18	7	5	4	4	1
	85,341	97,775	83,161	83,409	85,062	68,535	79,294	125,566	83,854	78,398
70 & over	12	1	2	1	3	2	2	- -	- -	1
	86,187	73,415	110,550	79,674	82,965	91,651	73,684	- -	- -	80,489
Total	**1,350**	**410**	**173**	**219**	**279**	**111**	**86**	**47**	**22**	**3**
	$83,688	**$69,573**	**$95,076**	**$88,670**	**$82,501**	**$92,740**	**$98,391**	**$97,243**	**$87,798**	**$104,026**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #9 for Plans M, N and U (TCA)

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	$78,944	$78,944	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	64,660	64,660	- -	- -	- -	- -	- -	- -	- -	- -
30 – 34	3	3	- -	- -	- -	- -	- -	- -	- -	- -
	73,687	73,687	- -	- -	- -	- -	- -	- -	- -	- -
35 – 39	7	4	1	2	- -	- -	- -	- -	- -	- -
	93,958	94,765	$101,116	$88,767	- -	- -	- -	- -	- -	- -
40 – 44	7	3	1	2	1	- -	- -	- -	- -	- -
	100,570	86,542	147,913	114,407	$67,635	- -	- -	- -	- -	- -
45 – 49	11	8	2	- -	1	- -	- -	- -	- -	- -
	124,707	119,287	151,549	- -	114,389	- -	- -	- -	- -	- -
50 – 54	13	5	1	2	3	2	- -	- -	- -	- -
	135,166	136,847	129,815	148,527	119,880	$143,209	- -	- -	- -	- -
55 – 59	10	2	1	3	4	- -	- -	- -	- -	- -
	144,696	151,549	157,552	102,715	169,542	- -	- -	- -	- -	- -
60 – 64	8	2	2	- -	3	1	- -	- -	- -	- -
	129,059	110,591	212,858	- -	80,643	143,643	- -	- -	- -	- -
65 – 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**61**	**29**	**8**	**9**	**12**	**3**	**- -**	**- -**	**- -**	**- -**
	$120,242	**$109,178**	**$158,151**	**$112,394**	**$121,813**	**$143,353**	**- -**	**- -**	**- -**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #10 for Plans I, J, M, N and U (OCFA)

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	5	5	- -	- -	- -	- -	- -	- -	- -	- -
	$66,749	$66,749	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	30	28	2	- -	- -	- -	- -	- -	- -	- -
	74,470	73,723	$84,933	- -	- -	- -	- -	- -	- -	- -
30 – 34	33	30	3	- -	- -	- -	- -	- -	- -	- -
	85,584	85,644	84,978	- -	- -	- -	- -	- -	- -	- -
35 – 39	47	33	6	6	2	- -	- -	- -	- -	- -
	94,822	91,941	113,772	$105,977	$52,042	- -	- -	- -	- -	- -
40 – 44	45	23	6	9	6	1	- -	- -	- -	- -
	100,492	99,594	81,769	109,077	106,181	$122,098	- -	- -	- -	- -
45 – 49	40	14	5	7	10	2	2	- -	- -	- -
	112,826	98,398	133,069	124,703	114,611	146,506	$79,037	- -	- -	- -
50 – 54	47	8	7	4	13	8	7	- -	- -	- -
	116,523	103,405	148,612	100,721	103,998	130,001	116,312	- -	- -	- -
55 – 59	35	8	6	3	8	5	4	1	- -	- -
	112,485	124,041	132,664	121,161	90,868	127,556	86,734	$73,506	- -	- -
60 – 64	22	4	2	2	11	1	2	- -	- -	- -
	122,430	107,874	200,454	111,751	102,874	145,015	180,468	- -	- -	- -
65 – 69	4	1	- -	- -	2	1	- -	- -	- -	- -
	112,110	71,146	- -	- -	108,358	160,581	- -	- -	- -	- -
70 & over	2	- -	- -	- -	1	- -	1	- -	- -	- -
	79,659	- -	- -	- -	61,519	- -	$97,800	- -	- -	- -
Total	**310**	**154**	**37**	**31**	**53**	**18**	**16**	**1**	**- -**	**- -**
	$101,931	**$90,856**	**$121,637**	**$112,269**	**$101,435**	**$133,250**	**$111,121**	**$73,506**	**- -**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #11 for Plans M AND N, Future Service, and U (Cemetery)

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
30 – 34	2	2	- -	- -	- -	- -	- -	- -	- -	- -
	$46,975	$46,975	- -	- -	- -	- -	- -	- -	- -	- -
35 – 39	3	1	1	- -	1	- -	- -	- -	- -	- -
	57,242	48,493	$55,909	- -	$67,326	- -	- -	- -	- -	- -
40 – 44	4	- -	- -	2	- -	2	- -	- -	- -	- -
	73,546	- -	- -	$59,851	- -	$87,241	- -	- -	- -	- -
45 – 49	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	106,108	106,108	- -	- -	- -	- -	- -	- -	- -	- -
50 – 54	9	2	1	1	1	2	- -	2	- -	- -
	69,689	50,467	70,637	161,106	74,244	55,063	- -	$55,075	- -	- -
55 – 59	2	1	- -	- -	- -	1	- -	- -	- -	- -
	78,747	57,233	- -	- -	- -	100,261	- -	- -	- -	- -
60 – 64	1	0	- -	- -	- -	1	- -	- -	- -	- -
	69,583	0	- -	- -	- -	69,583	- -	- -	- -	- -
65 – 69	2	1	- -	- -	- -	- -	- -	1	- -	- -
	77,025	53,790	- -	- -	- -	- -	- -	100,261	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**24**	**8**	**2**	**3**	**2**	**6**	**- -**	**3**	**- -**	**- -**
	$69,762	**$57,563**	**$63,273**	**$93,603**	**$70,785**	**$75,742**	**- -**	**$70,137**	**- -**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #12 for Plans G, H, Future Service, and U (Law Library)

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
30 – 34	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
35 – 39	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	$54,682	$54,682	- -	- -	- -	- -	- -	- -	- -	- -
40 – 44	2	- -	- -	1	1	- -	- -	- -	- -	- -
	92,114	- -	- -	$107,769	$76,459	- -	- -	- -	- -	- -
45 – 49	2	1	- -	- -	- -	1	- -	- -	- -	- -
	106,586	147,130	- -	- -	- -	$66,043	- -	- -	- -	- -
50 – 54	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
55 – 59	3	- -	- -	- -	1	1	1	- -	- -	- -
	86,724	- -	- -	- -	107,254	76,459	$76,459	- -	- -	- -
60 – 64	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	54,614	- -	$54,614	- -	- -	- -	- -	- -	- -	- -
65 – 69	3	- -	- -	- -	1	2	- -	- -	- -	- -
	72,179	- -	- -	- -	66,043	75,247	- -	- -	- -	- -
70 & over	2	- -	- -	1	- -	- -	- -	1	- -	- -
	67,821	- -	- -	50,750	- -	- -	- -	$84,892	- -	- -
Total	**14**	**2**	**1**	**2**	**3**	**4**	**1**	**1**	**- -**	**- -**
	$79,932	**$100,906**	**$54,614**	**$79,259**	**$83,252**	**$73,249**	**$76,459**	**$84,892**	**- -**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #6 for Plans E, F and V (Probation)

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	7	7	- -	- -	- -	- -	- -	- -	- -	- -
	$60,506	$60,506	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	31	30	1	- -	- -	- -	- -	- -	- -	- -
	61,386	60,469	$88,904	- -	- -	- -	- -	- -	- -	- -
30 – 34	39	23	11	4	1	- -	- -	- -	- -	- -
	69,021	65,695	75,763	$67,802	$76,229	- -	- -	- -	- -	- -
35 – 39	98	6	9	73	10	- -	- -	- -	- -	- -
	79,413	74,058	69,411	79,905	88,038	- -	- -	- -	- -	- -
40 – 44	207	1	3	55	115	32	1	- -	- -	- -
	85,933	64,660	66,707	81,814	86,071	$94,616	$97,807	- -	- -	- -
45 – 49	190	2	1	13	58	97	19	- -	- -	- -
	90,977	61,773	51,413	76,233	82,581	95,889	106,778	- -	- -	- -
50 – 54	110	3	- -	8	24	37	31	7	- -	- -
	92,084	70,342	- -	74,992	81,736	91,482	102,160	$114,982	- -	- -
55 – 59	33	- -	2	- -	4	15	6	6	- -	- -
	96,394	- -	89,080	- -	86,126	90,693	91,434	124,890	- -	- -
60 – 64	17	- -	1	1	2	4	6	1	2	- -
	90,259	- -	81,189	76,541	83,402	77,400	92,887	91,186	$125,882	- -
65 – 69	3	- -	- -	1	1	- -	1	- -	- -	- -
	92,265	- -	- -	74,202	95,551	- -	107,042	- -	- -	- -
70 & over	1	- -	- -	- -	- -	- -	1	- -	- -	- -
	97,554	- -	- -	- -	- -	- -	97,554	- -	- -	- -
Total	**736**	**72**	**28**	**155**	**215**	**185**	**65**	**14**	**2**	**- -**
	$85,725	**$63,780**	**$73,496**	**$79,650**	**$84,711**	**$93,966**	**$101,601**	**$117,529**	**$125,882**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #7 for Plans E, F, Q, R and V (Law Enforcement)

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	61	59	2	- -	- -	- -	- -	- -	- -	- -
	$84,415	$84,113	$93,330	- -	- -	- -	- -	- -	- -	- -
25 – 29	291	223	67	1	- -	- -	- -	- -	- -	- -
	97,170	91,446	115,754	$128,464	- -	- -	- -	- -	- -	- -
30 – 34	368	112	199	56	1	- -	- -	- -	- -	- -
	113,115	93,487	120,547	125,779	$123,609	- -	- -	- -	- -	- -
35 – 39	322	37	115	144	25	1	- -	- -	- -	- -
	124,139	102,710	123,336	128,742	132,175	$145,674	- -	- -	- -	- -
40 – 44	274	14	29	102	79	50	- -	- -	- -	- -
	134,320	115,782	127,319	128,785	140,442	145,193	- -	- -	- -	- -
45 – 49	347	7	14	39	72	162	53	- -	- -	- -
	144,687	113,988	130,651	133,462	140,103	147,990	$156,841	- -	- -	- -
50 – 54	256	50	9	14	29	67	69	18	- -	- -
	146,140	137,239	144,930	133,495	141,535	141,697	156,056	$167,248	- -	- -
55 – 59	96	22	12	8	10	13	15	15	1	- -
	145,927	142,706	147,408	148,540	135,207	146,828	140,602	161,184	$124,618	- -
60 – 64	40	3	21	7	- -	4	3	2	- -	- -
	146,856	145,521	153,472	152,707	- -	130,024	127,379	121,795	- -	- -
65 – 69	4	1	- -	1	2	- -	- -	- -	- -	- -
	159,512	151,549	- -	188,145	149,177	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**2,059**	**528**	**468**	**372**	**218**	**297**	**140**	**35**	**1**	**- -**
	$126,259	**$99,686**	**$123,787**	**$130,017**	**$139,290**	**$145,799**	**$154,083**	**$162,052**	**$124,618**	**- -**

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2019 by Age, Years of Service, and Average Projected Compensation (continued)

Rate Group #8 for Plans E, F, Q, R and V (OCFA)

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	14	14	- -	- -	- -	- -	- -	- -	- -	- -
	$85,461	$85,462	- -	- -	- -	- -	- -	- -	- -	- -
25 – 29	96	89	7	- -	- -	- -	- -	- -	- -	- -
	99,559	97,230	$129,163	- -	- -	- -	- -	- -	- -	- -
30 – 34	170	108	49	13	- -	- -	- -	- -	- -	- -
	109,251	97,535	127,473	$137,905	- -	- -	- -	- -	- -	- -
35 – 39	203	78	62	59	4	- -	- -	- -	- -	- -
	124,621	104,485	130,835	142,462	$157,797	- -	- -	- -	- -	- -
40 – 44	204	32	54	70	39	9	- -	- -	- -	- -
	142,920	113,259	143,061	146,689	157,626	$154,502	- -	- -	- -	- -
45 – 49	160	22	33	35	34	24	11	1	- -	- -
	149,170	109,107	151,960	150,930	152,034	169,257	$160,576	$171,920	- -	- -
50 – 54	130	8	23	9	28	20	29	13	- -	- -
	160,009	103,696	160,631	145,902	162,437	155,543	167,044	189,277	- -	- -
55 – 59	81	1	32	2	11	13	13	7	2	- -
	152,784	109,445	153,104	142,669	144,127	149,518	151,070	179,788	$164,909	- -
60 – 64	37	3	17	- -	3	2	3	4	5	- -
	140,337	129,846	131,473	- -	138,532	131,040	162,210	144,458	165,153	- -
65 – 69	10	- -	6	- -	- -	- -	2	1	1	- -
	135,898	- -	127,482	- -	- -	- -	131,225	181,784	149,854	- -
70 & over	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	130,222	- -	130,222	- -	- -	- -	- -	- -	- -	- -
Total	**1,106**	**355**	**284**	**188**	**119**	**68**	**58**	**26**	**8**	**- -**
	$133,369	**$101,089**	**$139,880**	**$145,464**	**$155,437**	**$158,373**	**$160,752**	**$178,871**	**$163,180**	**- -**

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Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members[1]	Retired Members	Disabled Members	Beneficiaries	Total
Number as of December 31, 2018	**21,929**	**6,026**	**13,827**	**1,482**	**2,365**	**45,629**
• New members	1,875	192	N/A	N/A	212	2,279
• Terminations – with vested rights	(607)	607	N/A	N/A	N/A	0
• Contribution refunds	(115)	-112	N/A	N/A	N/A	(227)
• Retirements	(821)	-128	949	N/A	N/A	0
• New disabilities	(26)	(7)	(31)	64	N/A	0
• Return to work	52	(49)	(3)	0	N/A	0
• Died with or without beneficiary	(30)	(9)	(304)	(43)	(99)	(485)
• Data adjustments	0	0	11	2	(12)	1
Number as of December 31, 2019	**22,257**	**6,520**	**14,449**	**1,505**	**2,466**	**47,197**

[1] Includes members who chose to leave their contributions on deposit even though they have less than five years of service.

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Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended December 31, 2019		Year Ended December 31, 2018	
Net assets at market value at the beginning of the year[1]		$14,349,790,000		$14,652,607,000
Contribution income:				
• Employer contributions[2]	$642,540,000		$595,494,000	
• Member contributions	279,373,000		270,070,000	
• Discount for prepaid contributions	22,049,000		21,218,000	
• Transfer from County Investment Account[3]	0		0	
Net contribution income		$943,962,000		$886,782,000
Investment income:				
• Interest, dividends and other income	$2,248,759,000		$(241,629,000)	
• Less investment and administrative fees	(125,501,000)		(119,692,000)	
Net investment income		$2,123,258,000		$(361,321,000)
Total income available for benefits		**$3,067,220,000**		**$525,461,000**
Less benefit payments:				
• Benefits paid	$(887,653,000)		$(814,345,000)	
• Withdrawal of contributions	(13,249,000)		(13,933,000)	
Net benefit payments		$(900,902,000)		$(828,278,000)
Change in net assets at market value		**$2,166,318,000**		**$(302,817,000)**
Net assets at market value at the end of the year[1]		**$16,516,108,000**		**$14,349,790,000**

Note: Results may be slightly off due to rounding.

[1] See footnote 1 on next page for further detail.
[2] Excludes $29,884,000 in contributions towards O.C. Sanitation District UAAL Deferred Account as of December 31, 2019. Includes asset transfers of $18,631,000 and $14,589,000 as of December 31, 2019 and December 31, 2018, respectively, from O.C. Sanitation District UAAL Deferred Account to valuation assets.
[3] Funded by pension obligation bond proceeds held by OCERS.

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Exhibit E: Summary Statement of Plan Assets

	December 31, 2019		December 31, 2018	
Cash equivalents		$415,160,000		$463,805,000
Accounts receivable:				
• Contributions	$24,104,000		$20,834,000	
• Investment income	18,054,000		19,170,000	
• Securities settlements	335,681,000		115,567,000	
• All other	5,462,000		3,223,000	
Total accounts receivable		$383,301,000		$158,794,000
Investments:				
• Equities	$8,291,819,000		$6,773,591,000	
• Fixed income investments	2,787,092,000		2,578,702,000	
• Alternative investments and diversified credit	5,440,774,000		5,062,529,000	
• Security lending collateral	192,379,000		314,333,000	
• Fixed assets net of accumulated depreciation	16,060,000		18,542,000	
Total investments at market value		$16,728,124,000		$14,747,697,000
Total assets		$17,526,585,000		$15,370,296,000
Accounts payable:				
• Securities settlements	$(301,621,000)		$(228,647,000)	
• Securities lending liability	(192,379,000)		(314,333,000)	
• All other	(94,719,000)		(99,503,000)	
Total accounts payable		$(588,719,000)		$(642,483,000)
Net assets at market value[1]		**$16,516,108,000**		**$14,349,790,000**
Net assets at actuarial value		**$16,036,953,000**		**$14,994,505,000**
Net assets at valuation value		**$16,036,869,000**		**$14,994,420,000**

Note: Results may be slightly off due to rounding.

[1] The market value excludes $150,416,000 and $131,890,000 as of December 31, 2019 and December 31, 2018, respectively, in the County Investment Account (funded by pension obligation bond proceeds held by OCERS), $259,285,000 and $246,133,000 as of December 31, 2019 and December 31, 2018, respectively, in the prepaid employer contributions account, $12,057,000 and $0 as of December 31, 2019 and December 31, 2018, respectively in the O.C. Sanitation District UAAL Deferred Account (after transfer).

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Exhibit F: Summary of Reported Reserve Information as of December 31, 2019

		Reserves
Used in Development of Valuation Value of Assets:		
• Active Members Reserve (Book Value)		$3,421,183,000
• Retired Members Reserve (Book Value)		11,728,494,000
• Employer Advanced Reserve (Book Value)		2,772,684,000
• O.C. Sanitation District UAAL Deferred Account Transfer		18,631,000
• ERI Contribution Reserve		12,292,000
• STAR COLA Contribution Reserve		0
• Unrealized Appreciation/(Depreciation) Included in Valuation Value of Assets		(1,916,415,000)
Subtotal: Valuation Value of Assets		$16,036,869,000
Not Used in Development of Valuation Value of Assets:		
• RMBR	$0	
• Unclaimed Member Deposit	0	
• Medicare Medical Insurance Reserve	84,000	
Subtotal	$84,000	
Subtotal: Actuarial Value of Assets		$16,036,953,000
• Unrecognized Investment Income		479,155,000
Subtotal: Market Value of Assets (Net of County Investment Account[1] and Prepaid Employer Contributions)		$16,516,108,000
• County Investment Account[1]		150,416,000
• Prepaid Employer Contributions		259,285,000
• O.C. Sanitation District UAAL Deferred Account[2]		12,057,000
Total: Gross Market Value of Assets		**$ 16,937,866,000**

Note: Results may be slightly off due to rounding.

[1] Funded by pension obligation bond proceeds held by OCERS.
[2] After asset transfer of $18,631,000 from O.C. Sanitation District UAAL Deferred Account to valuation assets.

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Exhibit G: Development of the Fund through December 31, 2019

Year Ended December 31	Employer Contributions[1]	Member Contributions	Net Investment Return[2,3]	Benefit Payments	Market Value of Assets at Year-End	Valuation Value of Assets at Year-End	Valuation Value as a Percent of Market Value
2010	$387,313,000	$177,929,000	$787,215,000	$459,383,000	$8,357,835,000	$8,672,592,000	103.77%
2011	414,451,000	183,820,000	3,236,000	493,749,000	8,465,593,000	9,064,355,000	107.07%
2012	436,895,000	191,069,000	1,014,471,000	541,154,000	9,566,874,000	9,469,208,000	98.98%
2013	458,487,000	209,301,000	1,031,118,000	586,273,000	10,679,507,000	10,417,125,000	97.54%
2014	659,634,000	232,656,000	487,104,000	630,678,000	11,428,223,000	11,449,911,000	100.19%
2015	598,599,000	249,271,000	(51,601,000)	675,963,000	11,548,529,000	12,228,009,000	105.88%
2016	558,020,000	258,297,000	1,010,548,000	717,976,000	12,657,418,000	13,102,978,000	103.52%
2017	619,067,000	262,294,000	1,878,172,000	764,344,000	14,652,607,000	14,197,125,000	96.89%
2018	616,712,000	270,070,000	(361,321,000)	828,278,000	14,349,790,000	14,994,420,000	104.49%
2019	664,589,000	279,373,000	2,123,258,000	900,902,000	16,516,108,000	16,036,869,000	97.10%

1 Includes discount for prepaid contributions, asset transfers from County Investment Account and asset transfer from O.C. Sanitation District UAAL Deferred Account, if any.
2 On a market basis, net of investment fees and administrative expenses.
3 Actual investment loss on net pension plan assets includes both the administrative expenses and discount for prepaid contributions while excluding the investment gains or losses credited to County Investment Account and O.C. Sanitation District UAAL Deferred Account, if any.

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Exhibit H: Table of Amortization Bases

Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for Orange County and IHSS

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$70,164	14	$66,190	$6,120
December 31, 2013	Actuarial (gain) or loss	(5,744)	14	(5,419)	(501)
December 31, 2014	Actuarial (gain) or loss	(2,744)	15	(2,633)	(231)
December 31, 2014	Assumption changes	(6,545)	15	(6,278)	(551)
December 31, 2015	Actuarial (gain) or loss	(1,650)	16	(1,606)	(134)
December 31, 2016	Actuarial (gain) or loss	(9,719)	17	(9,552)	(764)
December 31, 2017	Actuarial (gain) or loss	(5,386)	18	(5,335)	(409)
December 31, 2017	Assumption changes	21,899	18	21,688	1,664
December 31, 2018	Actuarial (gain) or loss	44	19	44	3
December 31, 2019	Actuarial (gain) or loss	(6,588)	20	(6,588)	(470)
Subtotal				$50,511	$4,727
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for O.C. Vector Control[1]				$1,544	
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for Department of Education[1]				$3,576	
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for U.C.I.[1]				$33,469	
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for Cypress Recreation and Parks[1]				$521	
Rate Group #1 Subtotal				**$89,621**	

[1] In determining the UAALs for the O.C. Vector Control District, Department of Education, U.C.I and Cypress Recreation and Parks, we first start by rolling forward the VVAs of these employers as of December 31, 2018 to December 31, 2019 to reflect the actual contributions, benefit payments and return on their VVAs during 2019. The AALs for these employers are obtained from internal valuation results.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Rate Group #2 – Plans I, J, O, P, S, T, U and W

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$3,438,555	14	$3,243,791	$299,948
December 31, 2013	Actuarial (gain) or loss	(173,790)	14	(163,946)	(15,160)
December 31, 2014	Actuarial (gain) or loss	(78,001)	15	(74,833)	(6,565)
December 31, 2014	Assumption changes	(246,714)	15	(236,693)	(20,763)
December 31, 2015	Actuarial (gain) or loss	(65,063)	16	(63,299)	(5,291)
December 31, 2016	Actuarial (gain) or loss	39,445	17	38,767	3,099
Subtotal[1]				$2,743,787	$255,268
December 31, 2017	Actuarial (gain) or loss	$(59,911)	18	$(59,331)	$(4,552)
December 31, 2017	Assumption changes	481,098	18	476,446	36,553
December 31, 2018	Actuarial (gain) or loss	207,573	19	206,843	15,274
December 31, 2019	Actuarial (gain) or loss	186,003	20	186,003	13,256
Subtotal[2]				$809,961	$60,531
Rate Group #2 Subtotal				**$3,553,748**	**$315,799**

Note:

We have made an adjustment to the amortization bases to reflect the $1.7 million additional contributions made by Children and Families Commission to pay off their UAAL as of December 31, 2016. With that adjustment, we have reduced the amortization layers established on or before December 31, 2016 for Rate Group #2 by that amount on a pro-rata basis. The UAAL contribution rate for Children and Families Commission is determined based on the amortization layers established on or after December 31, 2017.

[1] This amount is spread over the payroll for all employers in Rate Group #2 excluding the payroll for Children and Families Commission.
[2] This amount is spread over the payroll for all employers in Rate Group #2 including the payroll for Children and Families Commission.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Rate Group #3 – Plans B, G, H and U (OCSD)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2019	Restart amortization[1]	$0	0	$0	$0
Rate Group #3 Subtotal				**$0**	**$0**

[1] After transfer of $18.6 million from O.C. Sanitation District UAAL Deferred Account.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Rate Group #5 – Plans A, B and U (OCTA)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$232,513	14	$219,524	$20,299
December 31, 2013	Actuarial (gain) or loss	(13,471)	14	(12,718)	(1,176)
December 31, 2014	Actuarial (gain) or loss	4,522	15	4,342	381
December 31, 2014	Assumption changes	(19,944)	15	(19,150)	(1,680)
December 31, 2015	Actuarial (gain) or loss	(933)	16	(909)	(76)
December 31, 2016	Actuarial (gain) or loss	(9,743)	17	(9,584)	(766)
December 31, 2017	Actuarial (gain) or loss	(9,948)	18	(9,852)	(756)
December 31, 2017	Assumption changes	43,481	18	43,060	3,304
December 31, 2018	Actuarial (gain) or loss	22,318	19	22,239	1,642
December 31, 2019	Actuarial (gain) or loss	12,234	20	12,234	872
Rate Group #5 Subtotal				**$249,186**	**$22,044**

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Exhibit H: Table of Amortization Bases (continued)

Rate Group #9 – Plans M, N and U (TCA)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2019	Restart amortization[1] & Actuarial (gain) or loss	$373	20	$373	$27
Rate Group #9 Subtotal				**$373**	**$27**

[1] After reflecting additional UAAL contribution of $12.8 million made by TCA during 2019.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Rate Group #10 – Plans I, J, M, N and U (OCFA)

Date Established	Source	Initial Amount ($ in ‘000s)	Years Remaining	Outstanding Balance ($ in ‘000s)	Annual Payment ($ in ‘000s)
December 31, 2012	Restart amortization	$72,750	14	$68,685	$6,351
December 31, 2013	Actuarial (gain) or loss	(2,659)	14	(2,510)	(232)
December 31, 2014	Actuarial (gain) or loss	(3,755)	15	(3,606)	(316)
December 31, 2014	Assumption changes	(4,489)	15	(4,311)	(378)
December 31, 2015	Actuarial (gain) or loss	626	16	609	51
December 31, 2016	Actuarial (gain) or loss	134	17	132	11
December 31, 2017	Actuarial (gain) or loss	(15,281)	18	(15,133)	(1,161)
December 31, 2017	Assumption changes	9,159	18	9,071	696
December 31, 2018	Actuarial (gain) or loss	(6,934)	19	(6,910)	(510)
December 31, 2019	Actuarial (gain) or loss	76	20	76	5
Rate Group #10 Subtotal				**$46,103**	**$4,517**

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Exhibit H: Table of Amortization Bases (continued)

Rate Group #11 – Plans M and N, future service, and U (Cemetery)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2017	Restart amortization & Assumption changes	$281	18	$278	$21
December 31, 2018	Actuarial (gain) or loss	(244)	19	(243)	(18)
December 31, 2019	Actuarial (gain) or loss	613	20	613	44
Rate Group #11 Subtotal				**$648**	**$47**

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Exhibit H: Table of Amortization Bases (continued)

Rate Group #12 – Plans G, H, future service, and U (Law Library)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2017	Restart amortization & Assumption changes	$13	18	$12	$1
December 31, 2018	Actuarial (gain) or loss	221	19	220	16
December 31, 2019	Actuarial (gain) or loss	(201)	20	(201)	(14)
Rate Group #12 Subtotal				**$31**	**$3**

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Rate Group #6 – Plans E, F and V (Probation)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$192,912	14	$182,134	$16,842
December 31, 2013	Actuarial (gain) or loss	(14,039)	14	(13,256)	(1,226)
December 31, 2014	Actuarial (gain) or loss	(2,596)	15	(2,493)	(219)
December 31, 2014	Assumption changes	36,260	15	34,816	3,054
December 31, 2015	Actuarial (gain) or loss	(10,703)	16	(10,421)	(871)
December 31, 2016	Actuarial (gain) or loss	13,799	17	13,573	1,085
December 31, 2017	Actuarial (gain) or loss	(6,566)	18	(6,503)	(499)
December 31, 2017	Assumption changes	50,030	18	49,546	3,801
December 31, 2018	Actuarial (gain) or loss	8,046	19	8,018	592
December 31, 2019	Actuarial (gain) or loss	8,063	20	8,063	575
Rate Group #6 Subtotal				**$263,477**	**$23,134**

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Exhibit H: Table of Amortization Bases (continued)

Rate Group #7 – Plans E, F, Q, R and V (Law Enforcement)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$988,833	14	$933,589	$86,327
December 31, 2013	Actuarial (gain) or loss	(51,652)	14	(48,766)	(4,509)
December 31, 2014	Actuarial (gain) or loss	(34,729)	15	(33,346)	(2,925)
December 31, 2014	Assumption changes	102,262	15	98,189	8,613
December 31, 2015	Actuarial (gain) or loss	23,666	16	23,043	1,926
December 31, 2016	Actuarial (gain) or loss	39,724	17	39,074	3,124
December 31, 2017	Actuarial (gain) or loss	(27,922)	18	(27,652)	(2,121)
December 31, 2017	Assumption changes	161,417	18	159,856	12,264
December 31, 2018	Actuarial (gain) or loss	69,329	19	69,085	5,102
December 31, 2019	Actuarial (gain) or loss	75,023	20	75,023	5,347
Rate Group #7 Subtotal				**$1,288,095**	**$113,148**

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Exhibit H: Table of Amortization Bases (continued)

Rate Group #8 – Plans E, F, Q, R and V (OCFA)

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$399,947	14	$377,603	$34,916
December 31, 2013	Actuarial (gain) or loss	(20,177)	14	(19,050)	(1,762)
December 31, 2014	Actuarial (gain) or loss	(35,400)	15	(33,990)	(2,982)
December 31, 2014	Assumption changes	35,957	15	34,526	3,029
December 31, 2015	Actuarial (gain) or loss	(22,228)	16	(21,644)	(1,809)
December 31, 2016	Actuarial (gain) or loss	(15,736)	17	(15,478)	(1,237)
December 31, 2017	Actuarial (gain) or loss	(43,031)	18	(42,615)	(3,269)
December 31, 2017	Assumption changes	53,637	18	53,118	4,075
December 31, 2018	Actuarial (gain) or loss	39,932	19	39,792	2,938
December 31, 2019	Actuarial (gain) or loss	16,317	20	16,317	1,163
Rate Group #8 Subtotal				**$388,579**	**$35,062**

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Exhibit H: Table of Amortization Bases (continued)

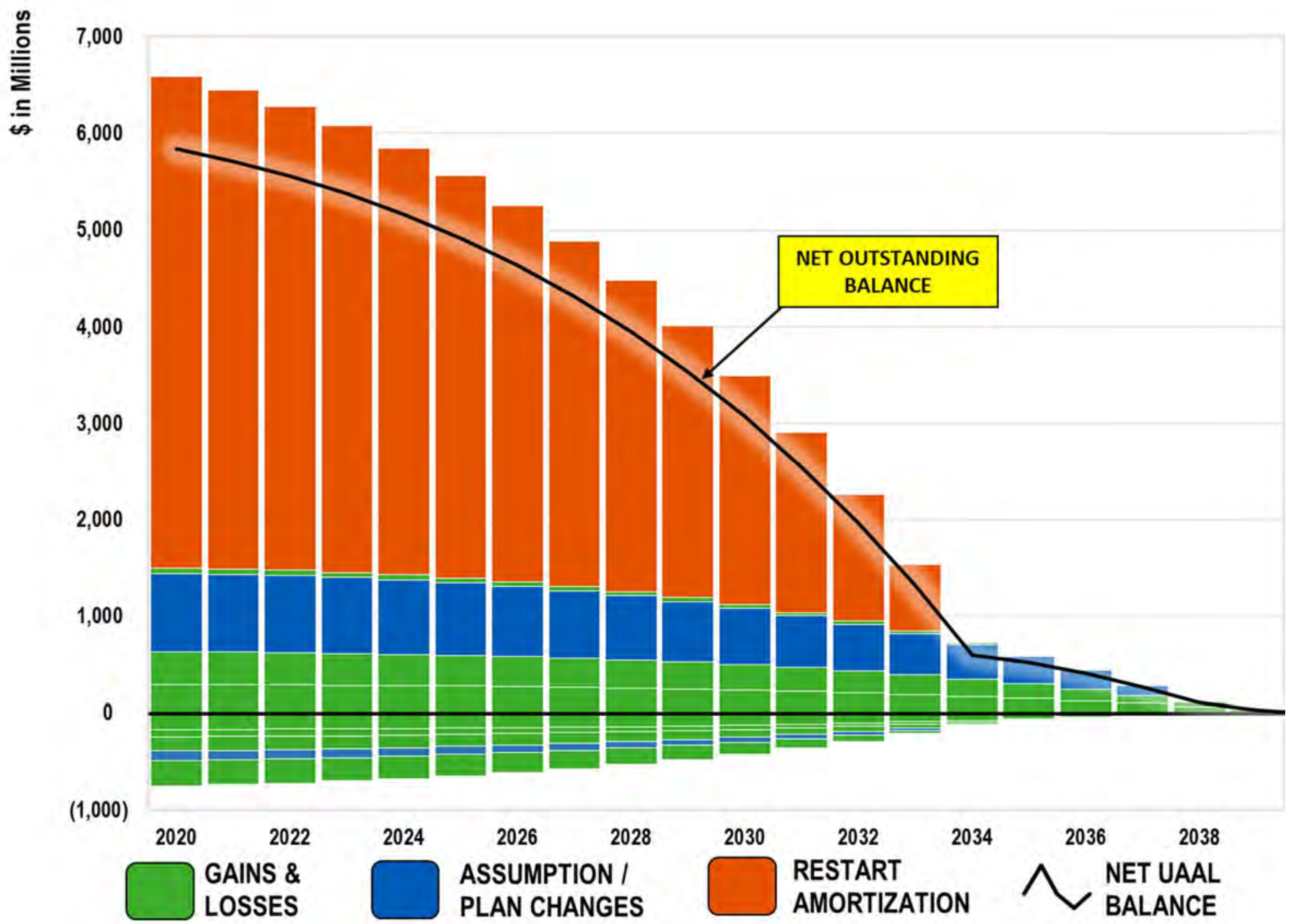
All Rate Groups Combined Excluding O.C. Vector Control, Department of Education, U.C.I. and Cypress Recreation and Parks

Date Established	Source	Initial Amount ($ in '000s)	Years Remaining	Outstanding Balance ($ in '000s)	Annual Payment ($ in '000s)
December 31, 2012	Restart amortization	$5,395,674	14	$5,091,516	$470,803
December 31, 2013	Actuarial (gain) or loss	(281,532)	14	(265,665)	(24,566)
December 31, 2014	Actuarial (gain) or loss	(152,703)	15	(146,559)	(12,857)
December 31, 2014	Assumption changes	(103,213)	15	(98,901)	(8,676)
December 31, 2015	Actuarial (gain) or loss	(76,285)	16	(74,227)	(6,204)
December 31, 2016	Actuarial (gain) or loss	57,904	17	56,932	4,552
December 31, 2017	Actuarial (gain) or loss	(168,707)	18	(167,076)	(12,817)
December 31, 2017	Assumption changes	821,677	18	813,730	62,429
December 31, 2018	Actuarial (gain) or loss	340,285	19	339,088	25,039
December 31, 2019	Actuarial (gain) or loss	291,913	20	291,913	20,805
Subtotal				$5,840,751	$518,508
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for O.C. Vector Control				$1,544	
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for Department of Education				$3,576	
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for U.C.I.				$33,469	
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD) for Cypress Recreation and Parks				$521	
Total				**$5,879,861**	

Section 3: Supplemental Information

Exhibit I: Projection of UAAL Balances and Payments

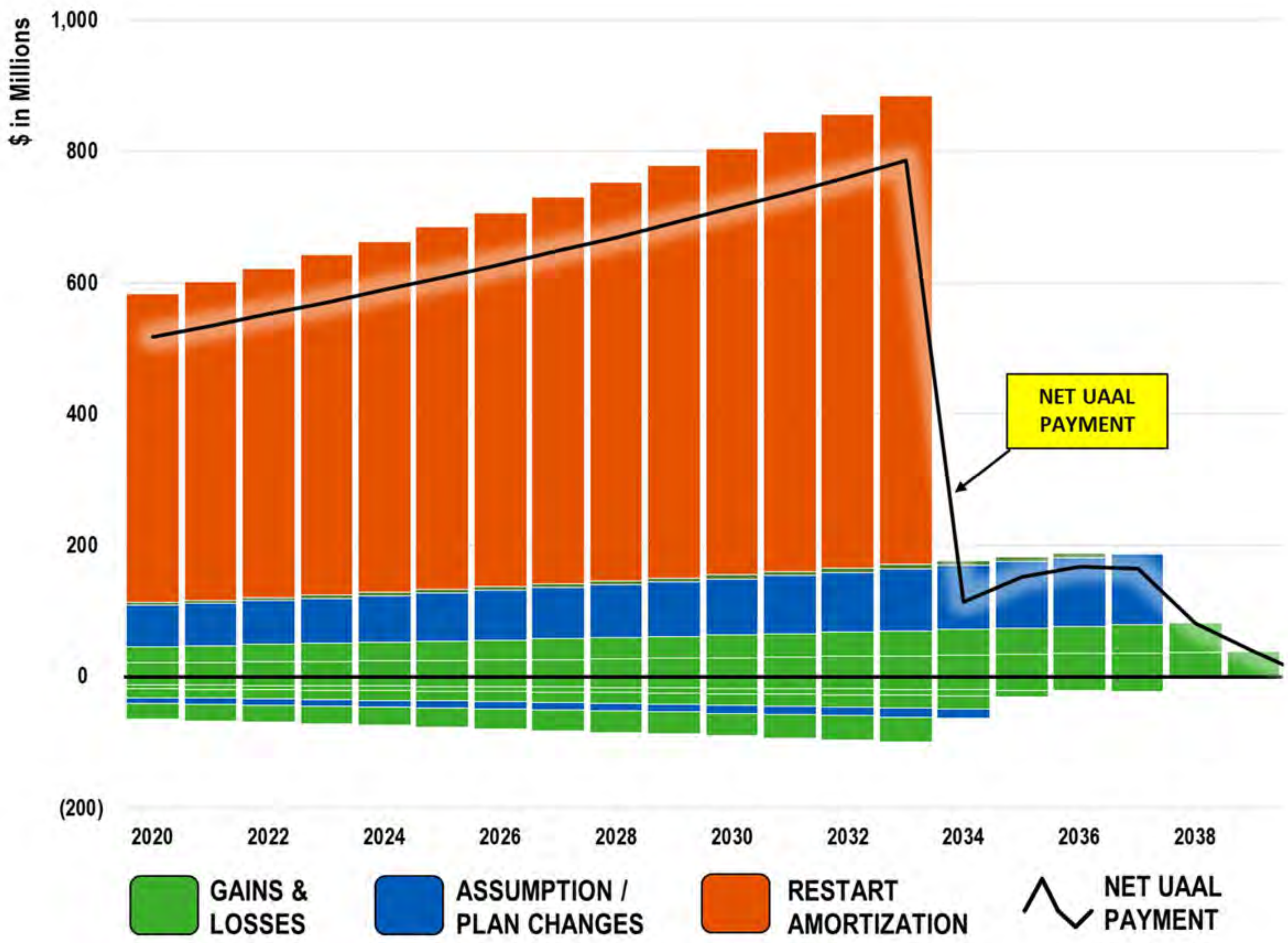
Outstanding Balance of $5.9 Billion in Net UAAL as of December 31, 2019



Section 3: Supplemental Information

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

Annual Payments Required to Amortize $5.9 Billion in Net UAAL as of December 31, 2019



Section 3: Supplemental Information

Exhibit J: Definition of Pension Terms

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

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

Section 3: Supplemental Information

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

Section 3: Supplemental Information

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates – the probability of disability retirement at a given age; Termination rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the Actuarial Value of Assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.
Investment Return:	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

Section 3: Supplemental Information

Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions and Methods

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the January 1, 2014 through December 31, 2016 Actuarial Experience Study dated August 14, 2017 and PowerPoint presentation dated October 16, 2017. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.
Economic Assumptions	
Net Investment Return:	7.00%; net of administrative and investment expenses. Based on the Actuarial Experience Study reference above, expected administrative and investment expenses represent about 0.80% of the Actuarial Value of Assets.
Member Contribution Crediting Rate:	5.00%, compounded semi-annually.
Consumer Price Index:	Increase of 2.75% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.
Payroll Growth:	Inflation of 2.75% per year plus “across the board” real salary increases of 0.50% per year.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.75% per year from the valuation date.

Section 4: Actuarial Valuation Basis

Salary Increases:

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

Years of Service	Rate (%) General	Rate (%) Safety
Less than 1	9.00	14.00
1 - 2	7.25	10.00
2 - 3	6.00	7.75
3 - 4	5.00	6.00
4 -5	4.00	5.50
5 - 6	3.50	4.50
6 - 7	2.50	3.75
7 - 8	2.25	3.25
8 - 9	1.75	2.50
9 - 10	1.50	2.25
10 - 11	1.50	1.75
11 - 12	1.50	1.75
12 - 13	1.50	1.75
13 - 14	1.50	1.75
14 - 15	1.50	1.75
15 - 16	1.50	1.75
16 - 17	1.00	1.50
17 - 18	1.00	1.50
18 - 19	1.00	1.50
19 - 20	1.00	1.50
20 & Over	1.00	1.50

In addition to the individual salary increase assumptions, we have applied an average of two hours of additional salary annually for leap-year salary adjustment.

Section 4: Actuarial Valuation Basis

Demographic Assumptions:

Post-Retirement Mortality Rates:

Healthy

- **General Members and All Beneficiaries:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected generationally with the two-dimensional MP-2016 projection scale, with no setback for males and females.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected generationally with the two-dimensional MP-2016 projection scale, setback four years for males and females.

Disabled

- **General Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected generationally with the two-dimensional MP-2016 projection scale, set forward five years for males and females.
- **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected generationally with the two-dimensional MP-2016 projection scale, with no setback for males and females.

The RP-2014 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Pre-Retirement Mortality Rates:

- **General and Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Employee Mortality Tables multiplied by 80%, projected generationally with the two-dimensional MP-2016 projection scale.

	Rate (%)[1]			
	General		Safety	
Age	Male	Female	Male	Female
25	0.05	0.02	0.05	0.02
30	0.05	0.02	0.05	0.02
35	0.05	0.03	0.05	0.03
40	0.06	0.04	0.06	0.04
45	0.10	0.07	0.10	0.07
50	0.17	0.11	0.17	0.11
55	0.27	0.17	0.27	0.17
60	0.45	0.24	0.45	0.24
65	0.78	0.36	0.78	0.36

All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected. The other 10% are assumed to be service connected.

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

Section 4: Actuarial Valuation Basis

Mortality Rates for Member Contributions:	• **General Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, with no setback for males and females, weighted 40% male and 60% female. • **Safety Members:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, setback four years for males and females, weighted 80% male and 20% female.
Mortality Rates for Optional Form of Benefits:	• **General Service Retirees:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, with no setback for males and females, weighted 40% male and 60% female. • **Safety Service Retirees:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, setback four years for males and females, weighted 80% male and 20% female. • **General Disabled Retirees:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, set forward five years for males and females, weighted 40% male and 60% female. • **Safety Disabled Retirees:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, with no setback for males and females, weighted 80% male and 20% female. • **General Service Beneficiaries:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, with no setback for males and females, weighted 60% male and 40% female. • **Safety Service Beneficiaries:** Headcount-Weighted RP-2014 (RPH-2014) Healthy Annuitant Mortality Tables, projected 20 years with the two-dimensional mortality improvement Scale MP-2016, with no setback for males and females, weighted 20% male and 80% female.

Section 4: Actuarial Valuation Basis

Disability Incidence:

	Rate (%)			
Age	**General All Other**	**General OCTA**	**Safety Law & Fire**	**Safety Probation**
20	0.00	0.00	0.00	0.00
25	0.00	0.00	0.01	0.03
30	0.01	0.03	0.04	0.08
35	0.03	0.20	0.14	0.10
40	0.08	0.36	0.23	0.13
45	0.13	0.43	0.40	0.21
50	0.18	0.48	1.10	0.28
55	0.23	0.65	2.40	0.42
60	0.31	1.26	4.80	0.20

60% of General All Other disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected.

65% of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.

100% of Safety Law Enforcement and Fire disabilities are assumed to be service connected disabilities.

75% of Safety Probation disabilities are assumed to be service connected disabilities. The other 25% are assumed to be non-service connected.

Section 4: Actuarial Valuation Basis

Termination:

Years of Service	Rate (%) General All Other	General OCTA	Safety Law & Fire	Safety Probation
Less than 1	11.00	17.50	4.50	14.00
1 – 2	7.50	11.00	2.50	13.00
2 – 3	6.50	9.00	2.00	10.00
3 – 4	5.00	8.50	1.50	5.00
4 – 5	4.50	7.50	1.25	4.00
5 – 6	4.25	7.00	1.00	3.50
6 – 7	3.75	4.50	0.95	2.75
7 – 8	3.25	4.00	0.90	2.00
8 – 9	3.00	3.50	0.85	2.00
9 – 10	2.75	3.00	0.80	1.75
10 – 11	2.50	3.00	0.75	1.75
11 – 12	2.00	3.00	0.65	1.50
12 – 13	2.00	3.00	0.60	1.25
13 – 14	1.75	2.50	0.55	1.00
14 – 15	1.50	2.50	0.50	0.75
15 – 16	1.40	2.50	0.45	0.75
16 – 17	1.30	2.00	0.40	0.75
17 – 18	1.20	1.80	0.35	0.25
18 – 19	1.10	1.60	0.30	0.25
19 – 20	1.00	1.40	0.25	0.25
20 & Over	0.90	1.20	0.20	0.25

Election for Withdrawal of Contributions (%)

Age	Rate (%) General All Other	General OCTA	Safety Law & Fire	Safety Probation
Less than 5	35.00	40.00	20.00	25.00
5 – 9	30.00	35.00	20.00	25.00
10 – 14	25.00	30.00	20.00	25.00
15 & Over	20.00	20.00	20.00	25.00

Section 4: Actuarial Valuation Basis

Retirement Rates:

	Rate (%)[1]			
Age	**General Enhanced**	**General Non-Enhanced[2]**	**General SJC (31676.12)**	**Safety Law (31664.1)[3]**
48	0.00	0.00	0.00	0.00
49	30.00	25.00	0.00	12.00
50	2.50	2.00	3.00	18.00
51	2.00	2.00	3.00	18.00
52	2.50	2.00	3.00	17.00
53	2.50	2.75	3.00	17.00
54	5.50	2.75	3.00	22.00
55	15.00	3.25	4.00	22.00
56	10.00	3.50	5.00	20.00
57	10.00	5.50	6.00	20.00
58	11.00	5.50	7.00	20.00
59	11.00	6.50	9.00	26.00
60	12.00	9.25	11.00	35.00
61	12.00	12.00	13.00	35.00
62	14.00	16.00	15.00	40.00
63	16.00	16.00	15.00	40.00
64	16.00	18.00	20.00	40.00
65	22.00	22.00	20.00	100.00
66	22.00	28.00	24.00	100.00
67	23.00	24.00	24.00	100.00
68	23.00	24.00	24.00	100.00
69	23.00	20.00	24.00	100.00
70	25.00	20.00	50.00	100.00
71	25.00	25.00	50.00	100.00
72	25.00	25.00	50.00	100.00
73	25.00	25.00	50.00	100.00
74	25.00	25.00	50.00	100.00
75	100.00	100.00	100.00	100.00

[1] The retirement rates only apply to members that are eligible to retire at the age shown.
[2] These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).
[3] Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 4: Actuarial Valuation Basis

Retirement Rates (continued):

	Rate (%)[1]			
Age	**Safety Law (31664.2)[2]**	**Safety Fire (31664.1)**	**Safety Fire (31664.2)**	**Safety Probation[2]**
48	0.00	0.00	0.00	0.00
49	0.00	2.00	0.00	0.00
50	11.50	5.00	8.00	3.25
51	12.00	7.00	10.00	3.25
52	12.70	9.50	11.00	4.25
53	17.90	10.50	12.00	4.25
54	18.80	15.00	14.00	7.00
55	30.70	18.00	24.00	12.00
56	20.00	20.00	23.00	12.00
57	20.00	21.00	27.00	18.00
58	25.00	28.00	27.00	18.00
59	30.00	28.00	36.00	18.00
60	40.00	30.00	40.00	20.00
61	40.00	30.00	40.00	20.00
62	40.00	35.00	40.00	25.00
63	40.00	35.00	40.00	40.00
64	40.00	35.00	40.00	40.00
65	100.00	100.00	100.00	100.00
66	100.00	100.00	100.00	100.00
67	100.00	100.00	100.00	100.00
68	100.00	100.00	100.00	100.00
69	100.00	100.00	100.00	100.00
70	100.00	100.00	100.00	100.00
71	100.00	100.00	100.00	100.00
72	100.00	100.00	100.00	100.00
73	100.00	100.00	100.00	100.00
74	100.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00

1 The retirement rates only apply to members that are eligible to retire at the age shown.
2 Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 4: Actuarial Valuation Basis

Retirement Rates (continued):

	Rate (%)[1]			
Age	**CalPEPRA 2.5% @ 67 General Formula**	**CalPEPRA 2.7% @ 57 Safety Formula Probation[2]**	**CalPEPRA 2.7% @ 57 Safety Formula Law[2]**	**CalPEPRA 2.7% @ 57 Safety Formula Fire**
50	0.00	2.50	11.00	6.00
51	0.00	2.50	11.50	7.00
52	4.00	3.00	12.00	9.00
53	1.50	3.00	16.00	10.00
54	1.50	5.50	17.00	11.50
55	2.50	10.00	28.00	21.00
56	3.50	10.00	18.00	20.00
57	5.50	15.00	17.50	22.00
58	7.50	20.00	22.00	25.00
59	7.50	20.00	26.00	30.00
60	7.50	40.00	40.00	40.00
61	7.50	40.00	40.00	40.00
62	14.00	40.00	40.00	40.00
63	14.00	40.00	40.00	40.00
64	14.00	40.00	40.00	40.00
65	18.00	100.00	100.00	100.00
66	22.00	100.00	100.00	100.00
67	23.00	100.00	100.00	100.00
68	23.00	100.00	100.00	100.00
69	23.00	100.00	100.00	100.00
70	25.00	100.00	100.00	100.00
71	25.00	100.00	100.00	100.00
72	25.00	100.00	100.00	100.00
73	25.00	100.00	100.00	100.00
74	25.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00

[1] The retirement rates only apply to members that are eligible to retire at the age shown.
[2] Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 4: Actuarial Valuation Basis

Retirement Age and Benefit for Deferred Vested Members:	General Retirement Age: 59 Safety Retirement Age: 53 Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit. 15% of future General and 25% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 4.25% and 4.75% compensation increases are assumed per annum for General and Safety, respectively.
Liability Calculation for Current Deferred Vested Members:	Liability for a current deferred vested member is calculated based on salary (adjusted with the additional cashout assumptions for non-CalPEPRA members), service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have 3 or more years of service, we used an average salary. For those members without salary information that have less than 3 years of service or for those members without service information, we assumed a refund of account balance.
Future Benefit Accruals:	1.0 year of service per year of employment. There is no assumption to anticipate conversion of unused sick leave at retirement.
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 members are assumed to elect the unmodified option at retirement.
Percent Married:	For all active and inactive members, 75% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 3 years older than the member.

Section 4: Actuarial Valuation Basis

Terminal Pay Assumptions:

Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages used in this valuation are:

Years of Service	Rate (%) General	Rate (%) Safety
General Non-CalPEPRA	3.00%	2.80%
Safety Probation Non-CalPEPRA	3.80%	3.40%
Safety Law Non-CalPEPRA	5.20%	4.60%
Safety Fire Non-CalPEPRA	2.00%	1.70%
General CalPEPRA	N/A	N/A
Safety Probation CalPEPRA	N/A	N/A
Safety Law CalPEPRA	N/A	N/A
Safety Fire CalPEPRA	N/A	N/A

The additional terminal pay assumptions are the same for service and disability retirements.

Actuarial Funding Policy

Actuarial Cost Method:

Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus Vesting Credit. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formula for each individual has always been in effect (i.e., "replacement life within a plan").

For Probation members who have prior benefit service in another OCERS plan, the normal cost rate for the current plan is calculated assuming their Entry Age is the date they entered service with their current plan.

Actuarial Value of Assets:

Market value of assets (MVA) less unrecognized returns in each of the last five annual accounting periods. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized annually over a five-year period.

Valuation Value of Assets:

The Actuarial Value of Assets reduced by the value of the non-valuation reserves.

Amortization Policy:

Effective December 31, 2013, the outstanding balance of the UAAL from the December 31, 2012 valuation was combined and re-amortized over a declining 20-year period (14 years remaining as of December 31, 2019).

Any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.

Section 4: Actuarial Valuation Basis

Other Actuarial Methods	
Employer Contributions:	Employer contributions consist of two components: *Normal Cost* The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is determined as a level percentage of the member's compensation. *Contribution to the Unfunded Actuarial Accrued Liability (UAAL)* The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the System) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual payroll growth rate assumption The amortization policy is described on the previous page. The recommended employer contributions are provided in *Section 2, Subsection F.*
Member Contributions:	**Non-CalPEPRA Members** Articles 6 and 6.8 of the 1937 Act define the methodology to be used in the calculation of member basic contribution rates for General members and Safety members, respectively. The basic contribution rate is determined so that the accumulation of a member's basic contributions made in a given year until a certain age will be sufficient to fund an annuity at that age that is equal to: ➤ 1/200 of Final Average Salary for General Plan A; ➤ 1/120 of Final Average Salary for General Plan B; ➤ 1/100 of Final Average Salary for General Plans G, H, I, J, and S; ➤ 1/120 of Final Average Salary for General Plans M, N, O, and P; ➤ 1/200 of Final Average Salary for Safety Plans E and Q, and; ➤ 1/100 of Final Average Salary for Safety Plans F and R. The annuity age is 60 for General Plans A, B, M, N, O, P and S, 55 for Plans G, H, I, and J, and 50 for Safety Plans E, F, Q, and R. It is assumed that contributions are made annually at the same rate, starting at entry age.

Section 4: Actuarial Valuation Basis

In addition to the basic contributions, members also pay one-half of the total normal cost necessary to fund cost-of-living benefits which is calculated separately for each rate group, with the exception of Rate Groups #9 and #11, which are developed on a combined or pooled basis as described in our Cost Sharing Structure letter dated July 30, 2010. Within each rate group, the COLA normal cost is either pooled for Tiers 1 and 2 because the same 3% COLA is provided for both Tiers, or it differs by a set formula based on past practice we carried over from the OCERS' prior actuary. Accumulation includes crediting of interest at the assumed investment earnings rate.

Effective with the December 31, 2014 valuation, for determining the cost of the total benefit (i.e., basic and COLA components), the effect of the assumed additional cashouts are recognized in the valuation as an employer and member cost.

CalPEPRA Members

Pursuant to Section 7522.30(a) of the Government Code, members in Plans T, U, V and W are required to contribute at least 50% of the Normal Cost rate. We have assumed that exactly 50% of the Normal Cost would be paid by the new members. Also of note is that based on our recommendation, OCERS decided to use the discretion made available by AB1380 to not round the member's contribution rate to the nearest ¼% as previously required by CalPEPRA.

For members in Plan T and Plan W, their basic rates have been calculated using a methodology similar to that used for Plan P. For members in Plan U or Plan V, their basic rates have been calculated using a methodology outlined in our letter dated December 4, 2012 that was previously approved by the Board.

The member contribution rates for all members are provided in *Section 4, Exhibit III*.

Internal Revenue Code Section 415:

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $230,000 for 2020. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Non-CalPEPRA benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Non-CalPEPRA contribution rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.

Section 4: Actuarial Valuation Basis

Justification for Change in Actuarial Assumptions:	There have been no changes in actuarial assumptions since the last valuation.

Section 4: Actuarial Valuation Basis

Exhibit II: Summary of Plan Provisions

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

Plan Year:	January 1 through December 31
Membership Eligibility:	Membership with OCERS begins with the day of employment in an eligible position by the County or a participating employer.
Non-CalPEPRA General Plans	*2.5% @ 55 Plans (Orange County Sanitation District[1] and Law Library[2])*
Plan G	General members hired before September 21, 1979.
Plan H	General members hired on or after September 21, 1979.
	2.7% @ 55 Plans (City of San Juan Capistrano, Orange County Members except bargaining unit AFSCME members, Orange County Superior Court, Local Agency Formation Commission[2], Orange County Employees Retirement System[3], Children and Families Commission[4] and Orange County OCFA)
Plan I	General members hired before September 21, 1979.
Plan J	General members hired on or after September 21, 1979.
	2.0% @ 55 Plans (Transportation Corridor Agency, Cemetery District[5] and General OCFA)
Plan M	General members hired before September 21, 1979 and General OCFA members hired on or after July 1, 2011.
Plan N	General members hired on or after September 21, 1979.
	1.62% @ 65 Plans (Orange County Members, Orange County Superior Court, Local Agency Formation Commission and County Managers unit)
Plan O	County OCEA members and Superior Court members rehired on or after May 7, 2010, LAFCO members rehired on or after July 1, 2010 and County Managers unit members rehired on or after August 17, 2010 and not electing to rejoin Plan I.
Plan P	County OCEA members and Superior Court members hired on or after May 7, 2010, LAFCO members hired on or after July 1, 2010 and County Managers unit members hired on or after August 17, 2010 and not electing Plan J.

(1) Sanitation District members within Supervisors and Professional unit hired on or after October 1, 2010 are in Plan B.
(2) Improvement is prospective only for service after June 23, 2005.
(3) Improvement for management members is prospective only for service after June 30, 2005.
(4) Improvement is prospective only for service after December 22, 2005.
(5) Improvement is prospective only for service after December 7, 2007.

Section 4: Actuarial Valuation Basis

	2.0% @ 57 Plan (City of San Juan Capistrano)
Plan S	General members hired on or after July 1, 2012.
	All Other General Employers
Plan A	General members hired before September 21, 1979.
Plan B	General members hired on or after September 21, 1979 and Sanitation District members within Supervisors and Professional unit hired on or after October 1, 2010.
Non-CalPEPRA Safety Plans	*3.0% @ 50 Plans (Law Enforcement, OCFA and Probation Members)*
Plan E	Safety members hired before September 21, 1979.
Plan F	Safety members hired on or after September 21, 1979 and before April 9, 2010 for Law Enforcement, before July 1, 2011 for Safety members of OCFA Executive Management, and before July 1, 2012 for other OCFA Safety members.
	3% @ 55 Plans (Law Enforcement, OCFA)
Plan Q	Safety Law Enforcement members rehired on or after April 9, 2010, Safety members of OCFA Executive Management rehired on or after July 1, 2011, and other OCFA Safety members rehired on or after July 1, 2012 and previously in Plan E.
Plan R	Safety Law Enforcement members hired on or after April 9, 2010, Safety members of OCFA Executive Management hired on or after July 1, 2011, and other OCFA Safety members hired on or after July 1, 2012.
CalPEPRA General Plans	*1.62% @ 65 Plan (Orange County Members except County Attorneys, Orange County Employees Retirement System except Management Members, Local Agency Formation Commission, and Orange County Superior Court)*
Plan T	General members with membership dates on or after January 1, 2013.
	2.5% @ 67 Plan (All Other General Employers, Orange County Attorneys, Orange County Employees Retirement System Management Members)
Plan U	General Non-Orange County Transportation Authority members with membership dates on or after January 1, 2013 and Orange County Transportation Authority members with membership dates on or after January 1, 2015.
	1.62% @ 65 Plan (City of San Juan Capistrano)
Plan W	*General members with membership dates on or after January 1, 2016 and not electing Plan U.*
CalPEPRA Safety Plans	*2.7% @ 57 Plan (Law Enforcement, OCFA and Probation Members)*
Plan V	Safety members with membership dates on or after January 1, 2013.

Section 4: Actuarial Valuation Basis

Final Compensation for Benefit Determination:	
Plans A, E, G, I, M, O and Q	Highest consecutive 12 months of compensation earnable (§31462.1) (FAS1).
Plans B, F, H, J, N, P, R and S	Highest consecutive 36 months of compensation earnable (§31462) (FAS3).
Plans T	Highest consecutive 36 months of pensionable compensation (§7522.32 and §7522.34) (FAS3).
Plans U, V and W	Highest consecutive 36 months of pensionable compensation (§7522.10(c), §7522.32 and §7522.34) (FAS3).
Service:	Years of service (Yrs) are generally based on a member's employment during a period of time for which deductions are made from their compensation.
Service Retirement Eligibility:	
General	
Plans A, B, G, H, I, J, M, N, O, P, S, T and W	Age 50 with 10 years of service, or age 70 regardless of service, or after 30 years regardless of age (§31672). All part time members over age 55 with 10 years of employment may retire with 5 years of service.
Plan U	Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service (§31672.3).
Safety	
Plans E, F, Q and R	Age 50 with 10 years of service, or age 70 regardless of service, or after 20 years regardless of age (§31663.25). All part time members over age 55 with 10 years of employment may retire with 5 years of service.
Plan V	Age 50 with 5 years of service (§7522.25(d)) or age 70 regardless of service (§31672.3).

Section 4: Actuarial Valuation Basis

Benefit Formula:

General Plan G
2.5% @ 55 (§31676.18)

Retirement Age	Benefit Formula
50	2.00% x FAS1 x Yrs
55	2.50% x FAS1 x Yrs
60	2.50% x FAS1 x Yrs
62[(1)]	2.62% x FAS1 x Yrs
65 and over[(1)]	2.62% x FAS1 x Yrs

(1) Reflects benefit factors from Plan A as they provide a better benefit than those under 2.5% @ 55.

General Plan H
2.5% @ 55 (§31676.18)

Retirement Age	Benefit Formula
50	2.00% x FAS3 x Yrs
55 and over	2.50% x FAS3 x Yrs

General Plan I
2.7% @ 55 (§31676.19)

Retirement Age	Benefit Formula
50	2.00% x FAS1 x Yrs
55 and over	2.70% x FAS1 x Yrs

General Plan J
2.7% @ 55 (§31676.19)

Retirement Age	Benefit Formula
50	2.00% x FAS3 x Yrs
55 and over	2.70% x FAS3 x Yrs

General Plan M
2.0% @ 55 (§31676.16)

Retirement Age	Benefit Formula
50	1.43% x FAS1 x Yrs
55	2.00% x FAS1 x Yrs
60[(2)]	2.34% x FAS1 x Yrs
62[(2)]	2.62% x FAS1 x Yrs
65 and over[(2)]	2.62% x FAS1 x Yrs

(2) Reflects benefit factors from Plan A as they provide a better benefit than those under 2.0% @ 55.

Section 4: Actuarial Valuation Basis

Plan	Retirement Age	Benefit Formula
General Plan N *2.0% @ 55 (§31676.16)*	50	1.43% x FAS3 x Yrs
	55	2.00% x FAS3 x Yrs
	60	2.26% x FAS3 x Yrs
	62	2.37% x FAS3 x Yrs
	65 and over[1]	2.43% x FAS3 x Yrs

[1] Reflects benefit factors from Plan B as they provide a better benefit than those under 2.0% @ 55.

Plan	Retirement Age	Benefit Formula
General Plan O *1.62% @ 65 (§31676.01)*	50	0.79% x FAS1 x Yrs
	55	0.99% x FAS1 x Yrs
	60	1.28% x FAS1 x Yrs
	62	1.39% x FAS1 x Yrs
	65 and over	1.62% x FAS1 x Yrs

Plan	Retirement Age	Benefit Formula
General Plans P, T and W *1.62% @ 65 (§31676.01)*	50	0.79% x FAS3 x Yrs
	55	0.99% x FAS3 x Yrs
	60	1.28% x FAS3 x Yrs
	62	1.39% x FAS3 x Yrs
	65 and over	1.62% x FAS3 x Yrs

Plan	Retirement Age	Benefit Formula
General Plan S *2.0% @ 57 (§31676.12)*	50	1.34% x FAS3 x Yrs
	55	1.77% x FAS3 x Yrs
	60	2.34% x FAS3 x Yrs
	62	2.62% x FAS3 x Yrs
	65 and over	2.62% x FAS3 x Yrs

Section 4: Actuarial Valuation Basis

Plan	Retirement Age	Benefit Formula
General Plan A 2.0% @ 57 (§31676.12)	50	1.34% x FAS1 x Yrs
	55	1.77% x FAS1 x Yrs
	60	2.34% x FAS1 x Yrs
	62	2.62% x FAS1 x Yrs
	65 and over	2.62% x FAS1 x Yrs
General Plan B (§31676.1)	**Retirement Age**	**Benefit Formula**
	50	1.18% x FAS3 x Yrs
	55	1.49% x FAS3 x Yrs
	60	1.92% x FAS3 x Yrs
	62	2.09% x FAS3 x Yrs
	65 and over	2.43% x FAS3 x Yrs
General Plan U (§7522.20(a))	**Retirement Age**	**Benefit Formula**
	52	1.00% x FAS3 x Yrs
	55	1.30% x FAS3 x Yrs
	60	1.80% x FAS3 x Yrs
	62	2.00% x FAS3 x Yrs
	65	2.30% x FAS3 x Yrs
	67 and over	2.50% x FAS3 x Yrs
Safety Plan E 3.0% @ 50 (§31664.1)	**Retirement Age**	**Benefit Formula**
	50 and over	3.00% x FAS1 x Yrs
Safety Plan F 3.0% @ 50 (§31664.1)	**Retirement Age**	**Benefit Formula**
	50 and over	3.00% x FAS3 x Yrs
Safety Plan Q 3.0% @ 55 (§31664.2)	**Retirement Age**	**Benefit Formula**
	50	2.29% x FAS1 x Yrs
	55 and over	3.00% x FAS1 x Yrs

Section 4: Actuarial Valuation Basis

Safety Plan R *3.0% @ 55 (§31664.2)*	**Retirement Age**	**Benefit Formula**
	50	2.29% x FAS3 x Yrs
	55 and over	3.00% x FAS3 x Yrs
Safety Plan V (§7522.25(d))	**Retirement Age**	**Benefit Formula**
	50	2.00% x FAS3 x Yrs
	55	2.50% x FAS3 x Yrs
	57 and over	2.70% x FAS3 x Yrs

Section 4: Actuarial Valuation Basis

Maximum Benefit:	
Plans A, B, E, F, G, H, I, J, M, N, O, P, Q, R, S, T and W	100% of Highest Average Compensation (§31676.01, §31676.1, §31676.12, §31676.16, §31676.18, §31676.19, §31664.1, §31664.2).
Plans U and V	None.
Ordinary Disability:	
General	
Eligibility	Five years of service (§31720).
Benefit Formula	Plans A, G, I, M and O: 1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 62, but the total benefit cannot be more than one-third of Final Compensation. (§31727.1). Plans B, H, J, N, P, S, T, U and W: 1.5% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 65, but the total benefit cannot be more than one-third of Final Compensation. (§31727). For all members, 100% of the Service Retirement benefit will be paid, if greater.
Safety	
Eligibility	Five years of service (§31720).
Benefit Formula	1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 55, but the total benefit cannot be more than one-third of Final Compensation (§31727.2). For all members, 100% of the Service Retirement benefit will be paid, if greater.
Line-of-Duty Disability:	
All Members	
Eligibility	No age or service requirements (§31720).
Benefit Formula	50% of the Final Compensation or 100% of Service Retirement benefit, if greater (§31727.4).

Section 4: Actuarial Valuation Basis

Pre-Retirement Death:	
All Members	
Eligibility	None.
Basic lump sum benefit	Refund of member contributions with interest, plus one month's compensation for each year of service, to a maximum of six months' compensation (§31781). A lump sum benefit in the amount of $1,000 is payable upon the death of a member (with 10 years of service) to his/her eligible beneficiary (§31790).
Death in line of duty	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor children (§31787).
Vested Members	
Eligibility	Five years of service.
Basic benefit	60% of the greater of Service or Ordinary Disability Retirement benefit payable to surviving eligible spouse (§31765.1, §31781.1), in lieu of the basic lump sum benefit above (§31781).
Death After Retirement:	
All Members	
Service Retirement or Ordinary Disability Retirement	Unless another option was selected at retirement, 60% of member's unmodified allowance continues to eligible spouse (§31760.1). A lump sum benefit amount of $1,000 is payable upon the death of a member (with 10 years of service) to his/her eligible beneficiary (§31790). An eligible spouse is a surviving spouse who was married to the member at least one year prior to the date of retirement (§31760.1). Certain surviving spouses or domestic partners may also be eligible if marriage or domestic partnership was at least two years prior to the date of death and the surviving spouse or domestic partner has attained age 55.
Line of Duty Disability	Unless another option was selected at retirement, 100% of member's allowance continued to eligible spouse (§31786). A lump sum benefit in the amount of $1,000 is payable upon the death of a member (with 10 years of service) to his/her eligible beneficiary (§31790).
Withdrawal Benefits:	
Less than Five Years of Service	Refund of accumulated employee contributions with interest, or benefit at age 70 (§31628). Effective January 1, 2003, a member may also elect to leave contributions on deposit in the retirement fund (§31629.5).
Five or More Years of Service	Refund of accumulated employee contributions with interest. If contributions left on deposit, a member is entitled to earned benefits commencing at any time after eligible to retire (§31700).

Section 4: Actuarial Valuation Basis

Post-retirement Cost-of-Living Benefits:	Annual adjustment based on Consumer Price Index to a maximum of 3% per year; excess "banked" (§31870.1).
Supplemental Benefit:	Non-vested supplemental COLA benefit is also paid by the System to eligible retirees and survivors. This benefit has been excluded from this valuation.
Member Contributions:	Please refer to Section 4, Exhibit III for the specific rates.
Plan A	
Basic	Entry-age based rates that provide for an annuity at age 60 equal to 1/200 of FAS1 (§31621.5).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Plan B	
Basic	Entry-age based rates that provide for an annuity at age 60 equal to 1/120 of FAS3 (§31621).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Plans G, H, I and J	
Basic	Entry-age based rates that provide for an annuity at age 55 equal to 1/100 of FAS3 (FAS1 for Plans G and I) (§31621.8).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Plans M, N, O and P	
Basic	Entry-age based rates that provide for an annuity at age 60 equal to 1/120 of FAS3 (FAS1 for Plans M and O) (§31621).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Plan S	
Basic	Entry-age based rates that provide for an annuity at age 60 equal to 1/100 of FAS3 (§31621.2).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Plans E and Q	
Basic	Entry-age based rates that provide for an annuity at age 50 equal to 1/200 of FAS1 (§31639.5).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Plans F and R	
Basic	Entry-age based rates that provide for an annuity at age 50 equal to 1/100 of FAS3 (§31639.25).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.

Section 4: Actuarial Valuation Basis

Plans T, U, V and W	Entry-age based rates that provide for one-half of the total Normal Cost rate.
Other Information:	Non-CalPEPRA Safety members with 30 or more years of service are exempt from paying member contributions. This also applies for General members hired on or before March 7, 1973.
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.

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

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates

General Tier 1 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan I (2.7% @ 55)		Plan G (2.5% @ 55)		Plan M (2.0% @ 55)[1]		Plan A (OCTA)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
15	7.51%	10.52%	7.51%	10.32%	5.46%	7.94%	3.28%	5.46%
16	7.51%	10.52%	7.51%	10.32%	5.46%	7.94%	3.28%	5.46%
17	7.63%	10.69%	7.63%	10.48%	5.55%	8.07%	3.33%	5.55%
18	7.75%	10.86%	7.75%	10.65%	5.64%	8.20%	3.38%	5.64%
19	7.87%	11.04%	7.87%	10.82%	5.73%	8.33%	3.44%	5.73%
20	8.00%	11.22%	8.00%	11.00%	5.82%	8.46%	3.49%	5.82%
21	8.13%	11.40%	8.13%	11.17%	5.92%	8.60%	3.55%	5.92%
22	8.26%	11.58%	8.26%	11.35%	6.01%	8.73%	3.61%	6.01%
23	8.39%	11.77%	8.39%	11.53%	6.11%	8.88%	3.67%	6.11%
24	8.53%	11.95%	8.53%	11.72%	6.21%	9.02%	3.72%	6.21%
25	8.66%	12.15%	8.66%	11.91%	6.31%	9.16%	3.78%	6.31%
26	8.81%	12.34%	8.81%	12.10%	6.41%	9.31%	3.84%	6.41%
27	8.95%	12.54%	8.95%	12.30%	6.51%	9.46%	3.91%	6.51%
28	9.09%	12.75%	9.09%	12.50%	6.61%	9.61%	3.97%	6.62%
29	9.24%	12.96%	9.24%	12.70%	6.72%	9.77%	4.03%	6.72%
30	9.39%	13.17%	9.39%	12.91%	6.83%	9.92%	4.10%	6.83%
31	9.55%	13.39%	9.55%	13.12%	6.94%	10.08%	4.16%	6.94%
32	9.71%	13.61%	9.71%	13.34%	7.05%	10.25%	4.23%	7.05%
33	9.87%	13.84%	9.87%	13.57%	7.17%	10.41%	4.30%	7.17%
34	10.04%	14.08%	10.04%	13.80%	7.28%	10.58%	4.37%	7.29%
35	10.21%	14.32%	10.21%	14.04%	7.40%	10.76%	4.44%	7.41%
36	10.39%	14.57%	10.39%	14.28%	7.53%	10.94%	4.52%	7.53%
37	10.58%	14.83%	10.58%	14.54%	7.65%	11.12%	4.59%	7.65%
38	10.77%	15.10%	10.77%	14.81%	7.78%	11.31%	4.67%	7.78%
39	10.92%	15.31%	10.92%	15.01%	7.91%	11.50%	4.75%	7.92%
40	11.08%	15.53%	11.08%	15.23%	8.05%	11.70%	4.83%	8.05%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 1 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan I (2.7% @ 55)		Plan G (2.5% @ 55)		Plan M (2.0% @ 55)[1]		Plan A (OCTA)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
41	11.24%	15.76%	11.24%	15.45%	8.19%	11.90%	4.92%	8.19%
42	11.41%	16.00%	11.41%	15.69%	8.34%	12.12%	5.00%	8.34%
43	11.59%	16.25%	11.59%	15.93%	8.49%	12.34%	5.10%	8.49%
44	11.79%	16.53%	11.79%	16.20%	8.61%	12.51%	5.17%	8.61%
45	12.00%	16.82%	12.00%	16.49%	8.73%	12.69%	5.24%	8.74%
46	12.20%	17.11%	12.20%	16.77%	8.86%	12.88%	5.32%	8.86%
47	12.37%	17.35%	12.37%	17.00%	9.00%	13.07%	5.40%	9.00%
48	12.54%	17.58%	12.54%	17.24%	9.14%	13.28%	5.48%	9.14%
49	12.63%	17.70%	12.63%	17.35%	9.29%	13.50%	5.58%	9.29%
50	12.68%	17.78%	12.68%	17.43%	9.46%	13.74%	5.67%	9.46%
51	12.66%	17.74%	12.66%	17.39%	9.62%	13.97%	5.77%	9.62%
52	12.55%	17.59%	12.55%	17.24%	9.75%	14.17%	5.85%	9.75%
53	12.32%	17.27%	12.32%	16.93%	9.88%	14.36%	5.93%	9.89%
54	11.86%	16.63%	11.86%	16.30%	9.95%	14.46%	5.97%	9.95%
55	11.86%	16.63%	11.86%	16.30%	10.00%	14.52%	6.00%	10.00%
56	11.86%	16.63%	11.86%	16.30%	9.98%	14.49%	5.99%	9.98%
57	11.86%	16.63%	11.86%	16.30%	9.89%	14.37%	5.93%	9.89%
58	11.86%	16.63%	11.86%	16.30%	9.71%	14.11%	5.83%	9.71%
59	11.86%	16.63%	11.86%	16.30%	9.35%	13.58%	5.61%	9.35%
60	11.86%	16.63%	11.86%	16.30%	9.35%	13.58%	5.61%	9.35%
COLA Loading:		*40.19%*		*37.43%*		*45.29%*		*66.70%*

[1] Payable by members in Rate Group #9 and Rate Group #11.

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts: See *Section 4, Exhibit I*

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 1 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Plan A (Non-OCTA)	
Entry Age	Normal	Total
15	3.28%	5.37%
16	3.28%	5.37%
17	3.33%	5.46%
18	3.38%	5.55%
19	3.44%	5.64%
20	3.49%	5.73%
21	3.55%	5.82%
22	3.61%	5.91%
23	3.67%	6.01%
24	3.72%	6.10%
25	3.78%	6.20%
26	3.84%	6.30%
27	3.91%	6.40%
28	3.97%	6.50%
29	4.03%	6.61%
30	4.10%	6.72%
31	4.16%	6.82%
32	4.23%	6.93%
33	4.30%	7.05%
34	4.37%	7.16%
35	4.44%	7.28%
36	4.52%	7.40%
37	4.59%	7.52%
38	4.67%	7.65%
39	4.75%	7.78%
40	4.83%	7.92%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 1 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan A (Non-OCTA)	
Entry Age	Normal	Total
41	4.92%	8.06%
42	5.00%	8.20%
43	5.10%	8.35%
44	5.17%	8.47%
45	5.24%	8.59%
46	5.32%	8.71%
47	5.40%	8.85%
48	5.48%	8.99%
49	5.58%	9.14%
50	5.67%	9.30%
51	5.77%	9.46%
52	5.85%	9.59%
53	5.93%	9.72%
54	5.97%	9.78%
55	6.00%	9.83%
56	5.99%	9.81%
57	5.93%	9.72%
58	5.83%	9.55%
59	5.61%	9.19%
60	5.61%	9.19%
COLA Loading:		*63.87%*

Interest:	7.00% per annum
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts:	See Section 4, Exhibit I

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan J (2.7% @ 55 non OCFA)		Plan H (2.5% @ 55 OCSD)		Plan N (2.0% @ 55)[(1)]		Plan B (OCTA)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
15	7.18%	10.07%	7.18%	9.87%	5.23%	7.60%	5.23%	7.32%
16	7.18%	10.07%	7.18%	9.87%	5.23%	7.60%	5.23%	7.32%
17	7.30%	10.23%	7.30%	10.03%	5.31%	7.72%	5.31%	7.44%
18	7.42%	10.40%	7.42%	10.19%	5.40%	7.84%	5.40%	7.56%
19	7.54%	10.56%	7.54%	10.36%	5.49%	7.97%	5.49%	7.68%
20	7.66%	10.73%	7.66%	10.52%	5.57%	8.10%	5.57%	7.80%
21	7.78%	10.90%	7.78%	10.69%	5.66%	8.23%	5.66%	7.93%
22	7.90%	11.08%	7.90%	10.86%	5.75%	8.36%	5.75%	8.06%
23	8.03%	11.26%	8.03%	11.03%	5.85%	8.49%	5.85%	8.19%
24	8.16%	11.44%	8.16%	11.21%	5.94%	8.63%	5.94%	8.32%
25	8.29%	11.62%	8.29%	11.39%	6.03%	8.77%	6.03%	8.45%
26	8.42%	11.81%	8.42%	11.58%	6.13%	8.91%	6.13%	8.58%
27	8.56%	12.00%	8.56%	11.76%	6.23%	9.05%	6.23%	8.72%
28	8.70%	12.19%	8.70%	11.95%	6.33%	9.20%	6.33%	8.86%
29	8.84%	12.39%	8.84%	12.15%	6.43%	9.34%	6.43%	9.00%
30	8.98%	12.59%	8.98%	12.35%	6.53%	9.49%	6.53%	9.15%
31	9.13%	12.80%	9.13%	12.55%	6.64%	9.65%	6.64%	9.30%
32	9.28%	13.01%	9.28%	12.76%	6.75%	9.80%	6.75%	9.45%
33	9.44%	13.23%	9.44%	12.97%	6.86%	9.96%	6.86%	9.60%
34	9.60%	13.46%	9.60%	13.19%	6.97%	10.12%	6.97%	9.75%
35	9.76%	13.69%	9.76%	13.42%	7.08%	10.29%	7.08%	9.91%
36	9.93%	13.92%	9.93%	13.65%	7.20%	10.46%	7.20%	10.08%
37	10.09%	14.15%	10.09%	13.87%	7.32%	10.63%	7.32%	10.24%
38	10.24%	14.36%	10.24%	14.08%	7.44%	10.81%	7.44%	10.42%
39	10.38%	14.56%	10.38%	14.27%	7.56%	10.99%	7.56%	10.59%
40	10.53%	14.76%	10.53%	14.47%	7.69%	11.18%	7.69%	10.77%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan J (2.7% @ 55 non OCFA)		Plan H (2.5% @ 55 OCSD)		Plan N (2.0% @ 55)[1]		Plan B (OCTA)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
41	10.68%	14.97%	10.68%	14.68%	7.83%	11.37%	7.83%	10.96%
42	10.84%	15.20%	10.84%	14.90%	7.95%	11.56%	7.95%	11.14%
43	11.01%	15.43%	11.01%	15.13%	8.07%	11.73%	8.07%	11.30%
44	11.18%	15.67%	11.18%	15.36%	8.18%	11.89%	8.18%	11.46%
45	11.34%	15.89%	11.34%	15.58%	8.30%	12.06%	8.30%	11.62%
46	11.48%	16.09%	11.48%	15.77%	8.42%	12.23%	8.42%	11.79%
47	11.58%	16.23%	11.58%	15.91%	8.54%	12.41%	8.54%	11.96%
48	11.63%	16.31%	11.63%	15.99%	8.68%	12.60%	8.68%	12.15%
49	11.63%	16.30%	11.63%	15.98%	8.81%	12.80%	8.81%	12.34%
50	11.56%	16.20%	11.56%	15.88%	8.93%	12.98%	8.93%	12.51%
51	11.40%	15.98%	11.40%	15.67%	9.05%	13.14%	9.05%	12.67%
52	11.12%	15.59%	11.12%	15.29%	9.12%	13.26%	9.12%	12.77%
53	11.48%	16.10%	11.48%	15.78%	9.17%	13.32%	9.17%	12.84%
54	11.86%	16.63%	11.86%	16.30%	9.17%	13.32%	9.17%	12.83%
55	11.86%	16.63%	11.86%	16.30%	9.11%	13.23%	9.11%	12.75%
56	11.86%	16.63%	11.86%	16.30%	8.98%	13.05%	8.98%	12.58%
57	11.86%	16.63%	11.86%	16.30%	8.77%	12.74%	8.77%	12.28%
58	11.86%	16.63%	11.86%	16.30%	9.05%	13.15%	9.05%	12.67%
59	11.86%	16.63%	11.86%	16.30%	9.35%	13.58%	9.35%	13.09%
60	11.86%	16.63%	11.86%	16.30%	9.35%	13.58%	9.35%	13.09%
COLA Loading:		*40.19%*		*37.43%*		*45.29%*		*40.02%*

[1] Payable by members in Rate Group #9 and Rate Group #11.

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts: See Section 4, Exhibit I

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan B (non OCTA, non OCSD)		Plan J (2.7% @ 55 OCFA)		Plan P (1.62% @ 65)		Plan B (OCSD)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
15	5.23%	7.23%	7.18%	10.05%	5.23%	6.64%	5.23%	7.28%
16	5.23%	7.23%	7.18%	10.05%	5.23%	6.64%	5.23%	7.28%
17	5.31%	7.35%	7.30%	10.21%	5.31%	6.75%	5.31%	7.40%
18	5.40%	7.47%	7.42%	10.38%	5.40%	6.85%	5.40%	7.52%
19	5.49%	7.59%	7.54%	10.54%	5.49%	6.96%	5.49%	7.64%
20	5.57%	7.71%	7.66%	10.71%	5.57%	7.08%	5.57%	7.76%
21	5.66%	7.83%	7.78%	10.88%	5.66%	7.19%	5.66%	7.88%
22	5.75%	7.96%	7.90%	11.06%	5.75%	7.30%	5.75%	8.01%
23	5.85%	8.09%	8.03%	11.23%	5.85%	7.42%	5.85%	8.14%
24	5.94%	8.22%	8.16%	11.41%	5.94%	7.54%	5.94%	8.27%
25	6.03%	8.35%	8.29%	11.60%	6.03%	7.66%	6.03%	8.40%
26	6.13%	8.48%	8.42%	11.78%	6.13%	7.78%	6.13%	8.53%
27	6.23%	8.62%	8.56%	11.97%	6.23%	7.91%	6.23%	8.67%
28	6.33%	8.75%	8.70%	12.17%	6.33%	8.03%	6.33%	8.81%
29	6.43%	8.89%	8.84%	12.36%	6.43%	8.16%	6.43%	8.95%
30	6.53%	9.04%	8.98%	12.57%	6.53%	8.29%	6.53%	9.10%
31	6.64%	9.18%	9.13%	12.77%	6.64%	8.43%	6.64%	9.24%
32	6.75%	9.33%	9.28%	12.99%	6.75%	8.56%	6.75%	9.39%
33	6.86%	9.48%	9.44%	13.20%	6.86%	8.70%	6.86%	9.54%
34	6.97%	9.64%	9.60%	13.43%	6.97%	8.84%	6.97%	9.70%
35	7.08%	9.79%	9.76%	13.66%	7.08%	8.99%	7.08%	9.86%
36	7.20%	9.96%	9.93%	13.89%	7.20%	9.14%	7.20%	10.02%
37	7.32%	10.12%	10.09%	14.12%	7.32%	9.29%	7.32%	10.19%
38	7.44%	10.29%	10.24%	14.33%	7.44%	9.44%	7.44%	10.36%
39	7.56%	10.46%	10.38%	14.53%	7.56%	9.60%	7.56%	10.53%
40	7.69%	10.64%	10.53%	14.73%	7.69%	9.77%	7.69%	10.71%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan B (non OCTA, non OCSD)		Plan J (2.7% @ 55 OCFA)		Plan P (1.62% @ 65)		Plan B (OCSD)	
Entry Age	**Normal**	**Total**	**Normal**	**Total**	**Normal**	**Total**	**Normal**	**Total**
41	7.83%	10.83%	10.68%	14.94%	7.83%	9.94%	7.83%	10.90%
42	7.95%	11.00%	10.84%	15.16%	7.95%	10.10%	7.95%	11.07%
43	8.07%	11.17%	11.01%	15.40%	8.07%	10.25%	8.07%	11.24%
44	8.18%	11.32%	11.18%	15.64%	8.18%	10.39%	8.18%	11.39%
45	8.30%	11.48%	11.34%	15.86%	8.30%	10.54%	8.30%	11.55%
46	8.42%	11.64%	11.48%	16.05%	8.42%	10.69%	8.42%	11.72%
47	8.54%	11.82%	11.58%	16.19%	8.54%	10.85%	8.54%	11.89%
48	8.68%	12.00%	11.63%	16.27%	8.68%	11.01%	8.68%	12.08%
49	8.81%	12.19%	11.63%	16.27%	8.81%	11.18%	8.81%	12.26%
50	8.93%	12.36%	11.56%	16.17%	8.93%	11.34%	8.93%	12.44%
51	9.05%	12.51%	11.40%	15.95%	9.05%	11.48%	9.05%	12.59%
52	9.12%	12.62%	11.12%	15.56%	9.12%	11.58%	9.12%	12.70%
53	9.17%	12.68%	11.48%	16.06%	9.17%	11.64%	9.17%	12.76%
54	9.17%	12.68%	11.86%	16.59%	9.17%	11.63%	9.17%	12.76%
55	9.11%	12.60%	11.86%	16.59%	9.11%	11.56%	9.11%	12.68%
56	8.98%	12.43%	11.86%	16.59%	8.98%	11.41%	8.98%	12.51%
57	8.77%	12.13%	11.86%	16.59%	8.77%	11.13%	8.77%	12.21%
58	9.05%	12.52%	11.86%	16.59%	9.05%	11.49%	9.05%	12.60%
59	9.35%	12.93%	11.86%	16.59%	9.35%	11.87%	9.35%	13.02%
60	9.35%	12.93%	11.86%	16.59%	9.35%	11.87%	9.35%	13.02%
COLA Loading:		*38.32%*		*39.89%*		*26.95%*		*39.21%*

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts: See *Section 4, Exhibit I*

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan N (OCFA)		Plan S (City of SJC)		Plan H (2.5% @ 55 Law Library)	
Entry Age	Normal	Total	Normal	Total	Normal	Total
15	5.23%	7.69%	6.28%	8.74%	7.18%	9.90%
16	5.23%	7.69%	6.28%	8.74%	7.18%	9.90%
17	5.31%	7.81%	6.38%	8.88%	7.30%	10.06%
18	5.40%	7.94%	6.48%	9.03%	7.42%	10.22%
19	5.49%	8.06%	6.58%	9.17%	7.54%	10.39%
20	5.57%	8.19%	6.69%	9.32%	7.66%	10.55%
21	5.66%	8.32%	6.80%	9.47%	7.78%	10.72%
22	5.75%	8.46%	6.90%	9.62%	7.90%	10.89%
23	5.85%	8.59%	7.02%	9.77%	8.03%	11.07%
24	5.94%	8.73%	7.13%	9.93%	8.16%	11.24%
25	6.03%	8.87%	7.24%	10.09%	8.29%	11.43%
26	6.13%	9.01%	7.36%	10.25%	8.42%	11.61%
27	6.23%	9.16%	7.47%	10.42%	8.56%	11.80%
28	6.33%	9.30%	7.59%	10.58%	8.70%	11.99%
29	6.43%	9.45%	7.72%	10.75%	8.84%	12.18%
30	6.53%	9.60%	7.84%	10.92%	8.98%	12.38%
31	6.64%	9.76%	7.97%	11.10%	9.13%	12.59%
32	6.75%	9.92%	8.10%	11.28%	9.28%	12.79%
33	6.86%	10.08%	8.23%	11.46%	9.44%	13.01%
34	6.97%	10.24%	8.36%	11.65%	9.60%	13.23%
35	7.08%	10.41%	8.50%	11.84%	9.76%	13.46%
36	7.20%	10.58%	8.64%	12.03%	9.93%	13.69%
37	7.32%	10.76%	8.78%	12.23%	10.09%	13.91%
38	7.44%	10.94%	8.93%	12.44%	10.24%	14.12%
39	7.56%	11.12%	9.08%	12.65%	10.38%	14.31%
40	7.69%	11.31%	9.23%	12.87%	10.53%	14.51%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan N (OCFA)		Plan S (City of SJC)		Plan H (2.5% @ 55 Law Library)	
Entry Age	Normal	Total	Normal	Total	Normal	Total
41	7.83%	11.51%	9.39%	13.09%	10.68%	14.72%
42	7.95%	11.69%	9.55%	13.30%	10.84%	14.94%
43	8.07%	11.87%	9.69%	13.50%	11.01%	15.17%
44	8.18%	12.03%	9.82%	13.69%	11.18%	15.41%
45	8.30%	12.20%	9.96%	13.88%	11.34%	15.62%
46	8.42%	12.38%	10.10%	14.08%	11.48%	15.82%
47	8.54%	12.56%	10.25%	14.29%	11.58%	15.95%
48	8.68%	12.75%	10.41%	14.51%	11.63%	16.03%
49	8.81%	12.95%	10.57%	14.73%	11.63%	16.03%
50	8.93%	13.13%	10.72%	14.94%	11.56%	15.93%
51	9.05%	13.30%	10.85%	15.12%	11.40%	15.71%
52	9.12%	13.41%	10.95%	15.25%	11.12%	15.33%
53	9.17%	13.48%	11.00%	15.33%	11.48%	15.83%
54	9.17%	13.47%	11.00%	15.32%	11.86%	16.35%
55	9.11%	13.39%	10.93%	15.23%	11.86%	16.35%
56	8.98%	13.21%	10.78%	15.02%	11.86%	16.35%
57	8.77%	12.89%	10.52%	14.66%	11.86%	16.35%
58	9.05%	13.31%	10.86%	15.14%	11.86%	16.35%
59	9.35%	13.74%	11.22%	15.63%	11.86%	16.35%
60	9.35%	13.74%	11.22%	15.63%	11.86%	16.35%
COLA Loading:		*47.00%*		*39.34%*		*37.83%*

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts: See *Section 4, Exhibit I*

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Rate Group 1 (Plan U)		Rate Group 2 (Plan T)		Rate Group 2 (Plan U)		Rate Group 2 (Plan W)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
15	6.31%	8.54%	3.91%	5.24%	5.55%	7.55%	3.61%	4.72%
16	6.31%	8.54%	3.91%	5.24%	5.55%	7.55%	3.61%	4.72%
17	6.02%	8.15%	3.97%	5.33%	5.30%	7.20%	3.67%	4.80%
18	5.72%	7.74%	4.03%	5.41%	5.03%	6.84%	3.73%	4.88%
19	5.81%	7.87%	4.10%	5.50%	5.11%	6.95%	3.79%	4.95%
20	5.90%	8.00%	4.16%	5.59%	5.20%	7.06%	3.85%	5.03%
21	6.00%	8.13%	4.23%	5.68%	5.28%	7.18%	3.91%	5.11%
22	6.10%	8.26%	4.30%	5.77%	5.36%	7.30%	3.97%	5.20%
23	6.19%	8.39%	4.37%	5.86%	5.45%	7.41%	4.04%	5.28%
24	6.29%	8.53%	4.44%	5.96%	5.54%	7.53%	4.10%	5.37%
25	6.40%	8.66%	4.51%	6.05%	5.63%	7.65%	4.17%	5.45%
26	6.50%	8.80%	4.58%	6.15%	5.72%	7.78%	4.24%	5.54%
27	6.60%	8.94%	4.66%	6.25%	5.81%	7.90%	4.30%	5.63%
28	6.71%	9.09%	4.73%	6.35%	5.91%	8.03%	4.37%	5.72%
29	6.82%	9.23%	4.81%	6.45%	6.00%	8.16%	4.44%	5.81%
30	6.93%	9.38%	4.89%	6.56%	6.10%	8.29%	4.52%	5.90%
31	7.04%	9.53%	4.96%	6.66%	6.19%	8.42%	4.59%	6.00%
32	7.15%	9.69%	5.04%	6.77%	6.29%	8.56%	4.66%	6.10%
33	7.27%	9.84%	5.13%	6.88%	6.40%	8.70%	4.74%	6.20%
34	7.38%	10.00%	5.21%	6.99%	6.50%	8.84%	4.82%	6.30%
35	7.50%	10.16%	5.30%	7.11%	6.60%	8.98%	4.90%	6.40%
36	7.62%	10.33%	5.39%	7.23%	6.71%	9.12%	4.98%	6.51%
37	7.75%	10.49%	5.48%	7.35%	6.82%	9.27%	5.06%	6.62%
38	7.87%	10.66%	5.57%	7.47%	6.93%	9.42%	5.15%	6.73%
39	8.00%	10.84%	5.66%	7.60%	7.04%	9.57%	5.23%	6.85%
40	8.13%	11.01%	5.76%	7.73%	7.16%	9.73%	5.33%	6.97%
41	8.26%	11.19%	5.86%	7.87%	7.27%	9.89%	5.42%	7.09%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Rate Group 1 (Plan U)		Rate Group 2 (Plan T)		Rate Group 2 (Plan U)		Rate Group 2 (Plan W)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
42	8.40%	11.38%	5.96%	8.00%	7.39%	10.05%	5.51%	7.20%
43	8.54%	11.57%	6.05%	8.12%	7.52%	10.22%	5.59%	7.31%
44	8.68%	11.76%	6.14%	8.24%	7.64%	10.39%	5.67%	7.42%
45	8.83%	11.96%	6.22%	8.35%	7.77%	10.57%	5.75%	7.52%
46	8.98%	12.17%	6.32%	8.48%	7.90%	10.75%	5.84%	7.64%
47	9.14%	12.38%	6.41%	8.61%	8.04%	10.94%	5.93%	7.75%
48	9.30%	12.60%	6.52%	8.75%	8.18%	11.13%	6.02%	7.88%
49	9.45%	12.80%	6.62%	8.89%	8.32%	11.31%	6.12%	8.01%
50	9.60%	13.00%	6.72%	9.02%	8.45%	11.48%	6.21%	8.13%
51	9.73%	13.18%	6.81%	9.14%	8.56%	11.65%	6.30%	8.24%
52	9.87%	13.37%	6.88%	9.23%	8.69%	11.81%	6.36%	8.32%
53	10.02%	13.57%	6.93%	9.30%	8.82%	11.99%	6.40%	8.37%
54	10.17%	13.78%	6.94%	9.31%	8.95%	12.17%	6.41%	8.39%
55	10.34%	14.00%	6.91%	9.28%	9.10%	12.37%	6.39%	8.36%
56	10.50%	14.23%	6.85%	9.19%	9.24%	12.57%	6.33%	8.28%
57	10.66%	14.44%	6.73%	9.03%	9.38%	12.76%	6.22%	8.13%
58	10.80%	14.63%	6.94%	9.32%	9.51%	12.93%	6.42%	8.39%
59	10.91%	14.78%	7.17%	9.63%	9.60%	13.06%	6.63%	8.67%
60	10.98%	14.88%	7.17%	9.63%	9.67%	13.14%	6.63%	8.67%
61	11.00%	14.90%	7.17%	9.63%	9.68%	13.17%	6.63%	8.67%
62	10.97%	14.85%	7.17%	9.63%	9.65%	13.12%	6.63%	8.67%
63	10.86%	14.71%	7.17%	9.63%	9.56%	12.99%	6.63%	8.67%
64	10.67%	14.45%	7.17%	9.63%	9.39%	12.76%	6.63%	8.67%
65	11.01%	14.91%	7.17%	9.63%	9.69%	13.18%	6.63%	8.67%
66 & Over	11.37%	15.41%	7.17%	9.63%	10.01%	13.61%	6.63%	8.67%
COLA Loading:		*35.44%*		*34.21%*		*35.98%*		*30.78%*

Section 4: Actuarial Valuation Basis

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)

It is our understanding that in the determination of pension benefits under the CalPEPRA 2.5% at 67 formula and the Plan W 1.62% at 65 formula, the compensation that can be taken into account for 2020 is equal to $151,549 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2020 (reference: Section 7522.10(d)).

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Rate Group 3 (Plan U)		Rate Group 5 (Plan U)		Rate Group 9 (Plan U)		Rate Group 10 (Plan U)	
Entry Age	Normal	Total	Normal	Total	Normal	Total	Normal	Total
15	5.84%	7.90%	6.60%	8.97%	6.03%	8.11%	6.05%	8.20%
16	5.84%	7.90%	6.60%	8.97%	6.03%	8.11%	6.05%	8.20%
17	5.57%	7.54%	6.30%	8.56%	5.75%	7.73%	5.77%	7.82%
18	5.29%	7.16%	5.98%	8.13%	5.46%	7.34%	5.48%	7.43%
19	5.37%	7.27%	6.08%	8.26%	5.55%	7.46%	5.57%	7.55%
20	5.46%	7.39%	6.18%	8.40%	5.64%	7.59%	5.66%	7.67%
21	5.55%	7.51%	6.28%	8.53%	5.73%	7.71%	5.76%	7.80%
22	5.64%	7.63%	6.38%	8.67%	5.83%	7.83%	5.85%	7.92%
23	5.73%	7.76%	6.49%	8.81%	5.92%	7.96%	5.94%	8.05%
24	5.82%	7.88%	6.59%	8.96%	6.02%	8.09%	6.04%	8.18%
25	5.92%	8.01%	6.70%	9.10%	6.11%	8.22%	6.14%	8.31%
26	6.01%	8.14%	6.81%	9.25%	6.21%	8.35%	6.24%	8.45%
27	6.11%	8.27%	6.91%	9.40%	6.31%	8.49%	6.34%	8.58%
28	6.21%	8.40%	7.03%	9.55%	6.41%	8.62%	6.44%	8.72%
29	6.31%	8.54%	7.14%	9.70%	6.52%	8.76%	6.54%	8.86%
30	6.41%	8.68%	7.25%	9.86%	6.62%	8.90%	6.65%	9.00%
31	6.51%	8.82%	7.37%	10.01%	6.73%	9.05%	6.75%	9.15%
32	6.62%	8.96%	7.49%	10.18%	6.83%	9.19%	6.86%	9.30%
33	6.72%	9.10%	7.61%	10.34%	6.94%	9.34%	6.97%	9.44%
34	6.83%	9.25%	7.73%	10.51%	7.06%	9.49%	7.09%	9.60%
35	6.94%	9.40%	7.86%	10.67%	7.17%	9.64%	7.20%	9.75%
36	7.05%	9.55%	7.98%	10.85%	7.29%	9.80%	7.32%	9.91%
37	7.17%	9.70%	8.11%	11.02%	7.40%	9.96%	7.43%	10.07%
38	7.28%	9.86%	8.24%	11.20%	7.52%	10.12%	7.55%	10.23%
39	7.40%	10.02%	8.38%	11.38%	7.65%	10.28%	7.68%	10.40%
40	7.52%	10.18%	8.51%	11.57%	7.77%	10.45%	7.80%	10.57%
41	7.65%	10.35%	8.65%	11.76%	7.90%	10.62%	7.93%	10.74%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Rate Group 3 (Plan U)		Rate Group 5 (Plan U)		Rate Group 9 (Plan U)		Rate Group 10 (Plan U)	
Entry Age	**Normal**	**Total**	**Normal**	**Total**	**Normal**	**Total**	**Normal**	**Total**
42	7.77%	10.52%	8.80%	11.95%	8.03%	10.80%	8.06%	10.92%
43	7.90%	10.70%	8.94%	12.15%	8.16%	10.98%	8.19%	11.10%
44	8.03%	10.88%	9.09%	12.35%	8.30%	11.16%	8.33%	11.29%
45	8.17%	11.06%	9.25%	12.56%	8.44%	11.35%	8.47%	11.48%
46	8.31%	11.25%	9.40%	12.78%	8.58%	11.54%	8.62%	11.67%
47	8.45%	11.44%	9.57%	13.00%	8.73%	11.74%	8.77%	11.88%
48	8.60%	11.65%	9.74%	13.23%	8.89%	11.95%	8.92%	12.09%
49	8.75%	11.84%	9.90%	13.45%	9.03%	12.15%	9.07%	12.28%
50	8.88%	12.02%	10.05%	13.65%	9.17%	12.33%	9.21%	12.47%
51	9.00%	12.19%	10.19%	13.84%	9.30%	12.51%	9.34%	12.65%
52	9.13%	12.36%	10.34%	14.04%	9.43%	12.69%	9.47%	12.83%
53	9.27%	12.55%	10.49%	14.25%	9.57%	12.87%	9.61%	13.02%
54	9.41%	12.74%	10.65%	14.47%	9.72%	13.07%	9.76%	13.22%
55	9.56%	12.94%	10.82%	14.70%	9.88%	13.28%	9.92%	13.43%
56	9.72%	13.15%	11.00%	14.94%	10.04%	13.50%	10.08%	13.65%
57	9.86%	13.35%	11.16%	15.17%	10.19%	13.70%	10.23%	13.86%
58	10.00%	13.53%	11.31%	15.37%	10.33%	13.89%	10.37%	14.04%
59	10.10%	13.67%	11.43%	15.52%	10.43%	14.02%	10.47%	14.18%
60	10.16%	13.76%	11.50%	15.63%	10.50%	14.12%	10.54%	14.28%
61	10.18%	13.78%	11.52%	15.65%	10.51%	14.14%	10.56%	14.30%
62	10.15%	13.73%	11.48%	15.60%	10.48%	14.09%	10.52%	14.25%
63	10.05%	13.60%	11.37%	15.45%	10.38%	13.95%	10.42%	14.11%
64	9.87%	13.36%	11.17%	15.17%	10.19%	13.71%	10.23%	13.86%
65	10.19%	13.79%	11.53%	15.67%	10.52%	14.15%	10.57%	14.31%
66 & Over	10.52%	14.24%	11.91%	16.18%	10.87%	14.62%	10.91%	14.78%
COLA Loading:		*35.35%*		*35.88%*		*34.48%*		*35.45%*

Section 4: Actuarial Valuation Basis

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)

It is our understanding that in the determination of pension benefits under the CalPEPRA 2.5% at 67 formula and the Plan W 1.62% at 65 formula, the compensation that can be taken into account for 2020 is equal to $151,549 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2020 (reference: Section 7522.10(d)).

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Rate Group 11 (Plan U)		Rate Group 12 (Plan U)	
Entry Age	Normal	Total	Normal	Total
15	6.62%	8.90%	5.85%	7.76%
16	6.62%	8.90%	5.85%	7.76%
17	6.32%	8.49%	5.58%	7.40%
18	6.00%	8.06%	5.30%	7.03%
19	6.10%	8.19%	5.38%	7.15%
20	6.20%	8.33%	5.47%	7.26%
21	6.30%	8.46%	5.56%	7.38%
22	6.40%	8.60%	5.65%	7.50%
23	6.51%	8.74%	5.74%	7.62%
24	6.61%	8.88%	5.83%	7.74%
25	6.72%	9.02%	5.93%	7.87%
26	6.83%	9.17%	6.02%	8.00%
27	6.94%	9.32%	6.12%	8.13%
28	7.05%	9.47%	6.22%	8.26%
29	7.16%	9.62%	6.32%	8.39%
30	7.28%	9.77%	6.42%	8.52%
31	7.39%	9.93%	6.52%	8.66%
32	7.51%	10.09%	6.63%	8.80%
33	7.63%	10.25%	6.73%	8.94%
34	7.75%	10.42%	6.84%	9.08%
35	7.88%	10.58%	6.95%	9.23%
36	8.01%	10.75%	7.07%	9.38%
37	8.14%	10.93%	7.18%	9.53%
38	8.27%	11.11%	7.30%	9.69%
39	8.40%	11.29%	7.41%	9.84%
40	8.54%	11.47%	7.54%	10.00%
41	8.68%	11.66%	7.66%	10.17%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

General Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Rate Group 11 (Plan U)		Rate Group 12 (Plan U)	
Entry Age	**Normal**	**Total**	**Normal**	**Total**
42	8.82%	11.85%	7.79%	10.34%
43	8.97%	12.05%	7.91%	10.51%
44	9.12%	12.25%	8.05%	10.68%
45	9.27%	12.46%	8.18%	10.86%
46	9.43%	12.67%	8.32%	11.05%
47	9.60%	12.89%	8.47%	11.24%
48	9.77%	13.12%	8.62%	11.44%
49	9.93%	13.33%	8.76%	11.63%
50	10.08%	13.54%	8.89%	11.81%
51	10.22%	13.73%	9.02%	11.97%
52	10.37%	13.93%	9.15%	12.15%
53	10.52%	14.13%	9.28%	12.33%
54	10.68%	14.35%	9.43%	12.52%
55	10.85%	14.58%	9.58%	12.72%
56	11.03%	14.82%	9.73%	12.92%
57	11.20%	15.04%	9.88%	13.12%
58	11.35%	15.24%	10.01%	13.29%
59	11.46%	15.39%	10.11%	13.43%
60	11.54%	15.49%	10.18%	13.51%
61	11.55%	15.52%	10.20%	13.54%
62	11.52%	15.47%	10.16%	13.49%
63	11.40%	15.32%	10.06%	13.36%
64	11.20%	15.04%	9.88%	13.12%
65	11.56%	15.53%	10.20%	13.55%
66 & Over	11.94%	16.04%	10.54%	13.99%
COLA Loading:		*34.33%*		*32.76%*

Section 4: Actuarial Valuation Basis

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)

It is our understanding that in the determination of pension benefits under the CalPEPRA 2.5% at 67 formula and the Plan W 1.62% at 65 formula, the compensation that can be taken into account for 2020 is equal to $151,549 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2020 (reference: Section 7522.10(d)).

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

Safety Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan F (OCFA)		Plan F (Law Enforcement)		Plan F (Probation)	
Entry Age	Normal	Total	Normal	Total	Normal	Total
15	8.87%	15.06%	9.11%	15.59%	9.01%	15.05%
16	8.87%	15.06%	9.11%	15.59%	9.01%	15.05%
17	8.99%	15.26%	9.22%	15.80%	9.13%	15.24%
18	9.10%	15.46%	9.34%	16.00%	9.24%	15.44%
19	9.22%	15.67%	9.47%	16.21%	9.37%	15.65%
20	9.35%	15.87%	9.59%	16.43%	9.49%	15.85%
21	9.47%	16.09%	9.72%	16.64%	9.62%	16.06%
22	9.60%	16.30%	9.85%	16.86%	9.74%	16.28%
23	9.73%	16.52%	9.98%	17.09%	9.87%	16.50%
24	9.86%	16.75%	10.11%	17.32%	10.01%	16.72%
25	10.00%	16.98%	10.25%	17.55%	10.14%	16.95%
26	10.13%	17.21%	10.39%	17.79%	10.28%	17.18%
27	10.28%	17.45%	10.53%	18.04%	10.43%	17.42%
28	10.42%	17.70%	10.68%	18.29%	10.57%	17.67%
29	10.57%	17.96%	10.83%	18.56%	10.73%	17.92%
30	10.73%	18.22%	10.99%	18.82%	10.88%	18.18%
31	10.89%	18.50%	11.15%	19.10%	11.05%	18.45%
32	11.05%	18.77%	11.31%	19.38%	11.21%	18.72%
33	11.21%	19.04%	11.47%	19.65%	11.36%	18.99%
34	11.37%	19.31%	11.63%	19.92%	11.52%	19.25%
35	11.53%	19.59%	11.80%	20.20%	11.69%	19.52%
36	11.71%	19.89%	11.97%	20.50%	11.86%	19.82%
37	11.90%	20.21%	12.16%	20.82%	12.05%	20.13%
38	12.08%	20.52%	12.34%	21.13%	12.23%	20.44%
39	12.26%	20.83%	12.51%	21.43%	12.41%	20.73%
40	12.41%	21.07%	12.65%	21.66%	12.55%	20.96%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

Safety Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan F (OCFA)		Plan F (Law Enforcement)		Plan F (Probation)	
Entry Age	**Normal**	**Total**	**Normal**	**Total**	**Normal**	**Total**
41	12.52%	21.27%	12.75%	21.83%	12.65%	21.14%
42	12.59%	21.38%	12.80%	21.92%	12.71%	21.24%
43	12.60%	21.40%	12.79%	21.91%	12.71%	21.24%
44	12.56%	21.33%	12.72%	21.79%	12.66%	21.14%
45	12.44%	21.13%	12.57%	21.52%	12.52%	20.91%
46	12.21%	20.73%	12.28%	21.03%	12.25%	20.47%
47	11.77%	19.99%	11.77%	20.16%	11.77%	19.67%
48	12.14%	20.62%	12.14%	20.80%	12.14%	20.29%
49	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
50	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
51	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
52	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
53	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
54	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
55	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
56	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
57	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
58	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
59	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
60	12.54%	21.29%	12.54%	21.47%	12.54%	20.94%
COLA Loading:		*69.84%*		*71.26%*		*67.06%*

Interest:	7.00% per annum
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts:	See Section 4, Exhibit I

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

Safety Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan R (OCFA)		Plan R (Law Enforcement)	
Entry Age	Normal	Total	Normal	Total
15	8.87%	14.70%	9.11%	14.62%
16	8.87%	14.70%	9.11%	14.62%
17	8.99%	14.89%	9.22%	14.81%
18	9.10%	15.09%	9.34%	15.00%
19	9.22%	15.29%	9.47%	15.20%
20	9.35%	15.49%	9.59%	15.40%
21	9.47%	15.70%	9.72%	15.60%
22	9.60%	15.91%	9.85%	15.81%
23	9.73%	16.12%	9.98%	16.02%
24	9.86%	16.34%	10.11%	16.23%
25	10.00%	16.57%	10.25%	16.45%
26	10.13%	16.80%	10.39%	16.68%
27	10.28%	17.03%	10.53%	16.91%
28	10.42%	17.27%	10.68%	17.15%
29	10.57%	17.52%	10.83%	17.39%
30	10.73%	17.78%	10.99%	17.64%
31	10.89%	18.05%	11.15%	17.91%
32	11.05%	18.32%	11.31%	18.16%
33	11.21%	18.58%	11.47%	18.42%
34	11.37%	18.84%	11.63%	18.67%
35	11.53%	19.12%	11.80%	18.94%
36	11.71%	19.41%	11.97%	19.22%
37	11.90%	19.72%	12.16%	19.51%
38	12.08%	20.03%	12.34%	19.81%
39	12.26%	20.33%	12.51%	20.08%
40	12.41%	20.57%	12.65%	20.30%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

Safety Tier 2 Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Plan F (OCFA)		Plan F (Law Enforcement)	
Entry Age	**Normal**	**Total**	**Normal**	**Total**
41	12.52%	20.75%	12.75%	20.47%
42	12.59%	20.86%	12.80%	20.55%
43	12.60%	20.88%	12.79%	20.53%
44	12.56%	20.82%	12.72%	20.43%
45	12.44%	20.62%	12.57%	20.18%
46	12.21%	20.23%	12.28%	19.72%
47	11.77%	19.51%	11.77%	18.90%
48	12.14%	20.13%	12.14%	19.49%
49	12.54%	20.78%	12.54%	20.12%
50	12.54%	20.78%	12.54%	20.12%
51	12.54%	20.78%	12.54%	20.12%
52	12.54%	20.78%	12.54%	20.12%
53	12.54%	20.78%	12.54%	20.12%
54	12.54%	20.78%	12.54%	20.12%
55	12.54%	20.78%	12.54%	20.12%
56	12.54%	20.78%	12.54%	20.12%
57	12.54%	20.78%	12.54%	20.12%
58	12.54%	20.78%	12.54%	20.12%
59	12.54%	20.78%	12.54%	20.12%
60	12.54%	20.78%	12.54%	20.12%
COLA Loading:		*65.75%*		*60.53%*

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)
Additional Cashouts: See Section 4, Exhibit I

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

Safety CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation (as a % of monthly payroll)

	Rate Group 6 (Plan V)		Rate Group 7 (Plan V)		Rate Group 8 (Plan V)	
Entry Age	Normal	Total	Normal	Total	Normal	Total
15	9.83%	14.01%	10.51%	15.05%	9.20%	13.24%
16	9.83%	14.01%	10.51%	15.05%	9.20%	13.24%
17	9.96%	14.20%	10.64%	15.24%	9.32%	13.42%
18	10.09%	14.38%	10.78%	15.44%	9.44%	13.59%
19	10.22%	14.57%	10.92%	15.64%	9.57%	13.77%
20	10.35%	14.76%	11.07%	15.85%	9.69%	13.95%
21	10.49%	14.95%	11.21%	16.05%	9.82%	14.13%
22	10.63%	15.15%	11.36%	16.26%	9.95%	14.32%
23	10.77%	15.35%	11.51%	16.48%	10.08%	14.50%
24	10.91%	15.55%	11.66%	16.70%	10.21%	14.69%
25	11.05%	15.75%	11.81%	16.92%	10.34%	14.89%
26	11.20%	15.96%	11.97%	17.14%	10.48%	15.09%
27	11.35%	16.18%	12.13%	17.37%	10.62%	15.29%
28	11.50%	16.39%	12.29%	17.60%	10.76%	15.49%
29	11.65%	16.61%	12.46%	17.84%	10.91%	15.70%
30	11.81%	16.84%	12.62%	18.08%	11.06%	15.91%
31	11.97%	17.07%	12.80%	18.33%	11.21%	16.13%
32	12.14%	17.30%	12.97%	18.58%	11.36%	16.35%
33	12.31%	17.55%	13.16%	18.84%	11.52%	16.58%
34	12.48%	17.79%	13.34%	19.11%	11.68%	16.82%
35	12.66%	18.05%	13.53%	19.38%	11.85%	17.06%
36	12.85%	18.31%	13.73%	19.66%	12.02%	17.31%
37	13.04%	18.59%	13.93%	19.96%	12.20%	17.56%
38	13.24%	18.87%	14.15%	20.26%	12.39%	17.83%
39	13.43%	19.15%	14.36%	20.56%	12.57%	18.10%
40	13.63%	19.43%	14.57%	20.86%	12.76%	18.36%
41	13.82%	19.70%	14.77%	21.16%	12.94%	18.62%

Section 4: Actuarial Valuation Basis

Exhibit III: Member Contribution Rates (continued)

Safety CalPEPRA Members' Contribution Rates Based on the December 31, 2019 Actuarial Valuation
(as a % of monthly payroll)

	Rate Group 6 (Plan V)		Rate Group 7 (Plan V)		Rate Group 8 (Plan V)	
Entry Age	**Normal**	**Total**	**Normal**	**Total**	**Normal**	**Total**
42	14.03%	20.00%	14.99%	21.47%	13.13%	18.90%
43	14.25%	20.31%	15.23%	21.81%	13.34%	19.19%
44	14.48%	20.64%	15.48%	22.17%	13.56%	19.51%
45	14.72%	20.98%	15.73%	22.52%	13.77%	19.82%
46	14.94%	21.29%	15.97%	22.87%	13.98%	20.13%
47	15.12%	21.56%	16.16%	23.15%	14.16%	20.38%
48	15.27%	21.77%	16.32%	23.38%	14.29%	20.57%
49	15.36%	21.90%	16.42%	23.52%	14.38%	20.70%
50	15.39%	21.94%	16.45%	23.56%	14.41%	20.74%
51	15.37%	21.90%	16.42%	23.52%	14.38%	20.70%
52	15.25%	21.73%	16.30%	23.34%	14.27%	20.54%
53	14.99%	21.37%	16.03%	22.95%	14.04%	20.20%
54	14.52%	20.69%	15.51%	22.22%	13.59%	19.56%
55	14.97%	21.34%	16.00%	22.92%	14.02%	20.17%
56 & Over	15.46%	22.03%	16.52%	23.66%	14.47%	20.82%
COLA Loading:		*42.55%*		*43.21%*		*43.94%*

Interest: 7.00% per annum
Mortality: See *Section 4, Exhibit I*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See Section 4, Exhibit I)

It is our understanding that in the determination of pension benefits under the CalPEPRA 2.7% at 57 formula, the compensation that can be taken into account for 2020 is equal to $151,549 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2020 (reference: Section 7522.10(d)).

Section 4: Actuarial Valuation Basis

Exhibit IV: Funded Percentages By Rate Group

The funded percentages on a valuation value of assets basis by rate group provided for informational purposes only are as follows:

	December 31, 2019 Valuation	December 31, 2018 Valuation
General Members		
Rate Group #1 – Plans A, B and U (non-OCTA, non-OCSD)	82.53%	80.75%
Rate Group #2 – Plans I, J, O, P, S, T, U and W (County et al.)	70.64%	70.14%
Rate Group #3 – Plans B, G, H and U (OCSD)[1]	100.00%	98.91%
Rate Group #5 – Plans A, B and U (OCTA)	75.38%	75.00%
Rate Group #9 – Plans M, N and U (TCA)	99.29%	74.02%
Rate Group #10 – Plans I, J, M, N and U (OCFA)	82.58%	80.62%
Rate Group #11 – Plans M and N, future service, and U (Cemetery)	94.39%	99.65%
Rate Group #12 – Plans G, H, future service, and U (Law Library)	99.72%	97.84%
Safety Members		
Rate Group #6 – Plans E, F and V (Probation)	71.80%	70.34%
Rate Group #7 – Plans E, F, Q, R and V (Law Enforcement)	70.33%	69.67%
Rate Group #8 – Plans E, F, Q, R and V (OCFA)	79.69%	78.70%

[2] Reflects asset transfers of $18,631,000 and $14,589,000 as of December 31, 2019 and December 31, 2018, respectively, from O.C. Sanitation District UAAL Deferred Account to valuation assets.

Section 4: Actuarial Valuation Basis

Exhibit V: Reconciliation of Employer Contribution Rates by Rate Group

The reconciliation of the employer contribution rates for the General Rate Groups #1 to #5 are as follows:

	RG #1[1]	RG #2	RG #3	RG #5
Average Recommended Employer Contribution as of December 31, 2018 (before adjustments for additional UAAL contributions and phase-in)	16.09%	38.22%	12.83%	31.63%
• Adjustment to FY20-21 rates for additional UAAL contributions from OCSD and TCA	0.00%	0.00%	(0.86%)	0.00%
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	(0.74%)	(1.19%)	0.00%	(1.16%)
Average Recommended Employer Contribution as of December 31, 2018 (after adjustments for additional UAAL contributions and phase-in)	15.35%	37.03%	11.97%	30.47%
• Effect of investment loss (after smoothing)	0.08%	0.17%	0.22%	0.15%
• Effect of additional UAAL contributions from OCFA	0.00%	0.00%	0.00%	0.00%
• Effect of $18.6 million asset transfer from O.C. Sanitation District UAAL Deferred Account	0.00%	0.00%	(1.74%)	0.00%
• Effect of difference in actual versus expected contributions (including loss from phase-in)	0.14%	0.55%	0.15%	0.51%
• Effect of difference in actual versus expected COLA increases	0.14%	0.44%	0.46%	0.41%
• Effect of difference in actual versus expected salary increases	(0.60%)	(0.35%)	0.46%	(0.25%)
• Effect of growth in total payroll greater than expected	0.03%	0.10%	0.00%	(0.73%)
• Effect of other experience (gain)/loss[2]	(0.39%)	0.22%	0.41%	(0.30%)
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	0.74%	1.19%	0.00%	1.16%
Total change	0.14%	2.32%	(0.04%)	0.95%
Average Recommended Employer Contribution as of December 31, 2019	15.49%	39.35%	11.93%	31.42%

[1] Includes only the "net" UAAL contribution rate for County and IHSS Public Authority without reflecting the UAAL contributions required for Vector Control, Cypress Parks and Recreation, U.C.I. and DOE.
[2] Net of an adjustment to reflect 18-month delay between date of valuation and date of rate implementation for all actuarial experience.

Section 4: Actuarial Valuation Basis

Exhibit V: Reconciliation of Employer Contribution Rates by Rate Group (continued)

The reconciliation of the employer contribution rates for the General Rate Groups #9 to #12 are as follows:

	RG #9	RG #10	RG #11	RG #12
Average Recommended Employer Contribution as of December 31, 2018 (before adjustments for additional UAAL contributions and phase-in)	28.27%	28.54%	12.35%	15.35%
• Adjustment to FY20-21 rates for additional UAAL contributions from OCSD and TCA	(15.29%)	0.00%	0.00%	0.00%
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	0.00%	(0.94%)	(0.22%)[1]	0.00%
Average Recommended Employer Contribution as of December 31, 2018 (after adjustments for additional UAAL contributions and phase-in)	12.98%	27.60%	12.13%	15.35%
• Effect of investment loss (after smoothing)	0.14%	0.15%	0.14%	0.22%
• Effect of additional UAAL contributions from OCFA	0.00%	(1.55%)	0.00%	0.00%
• Effect of $18.6 million asset transfer from O.C. Sanitation District UAAL Deferred Account	0.00%	0.00%	0.00%	0.00%
• Effect of difference in actual versus expected contributions (including loss from phase-in)	(0.31%)	(0.20%)	0.12%	0.25%
• Effect of difference in actual versus expected COLA increases	0.29%	0.52%	0.18%	0.38%
• Effect of difference in actual versus expected salary increases	0.16%	0.44%	(0.17%)	(0.71%)
• Effect of growth in total payroll greater than expected	(0.09%)	(1.77%)	0.00%	0.02%
• Effect of other experience (gain)/loss[2,3]	0.05%	0.57%	2.22%	(1.83%)
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	0.00%	0.94%	0.22%[1]	0.00%
Total change	0.24%	(0.90%)	2.71%	(1.67%)
Average Recommended Employer Contribution as of December 31, 2019	13.22%	26.70%	14.84%	13.68%

1 The phase-in adjustment for Rate Group #11 has been adjusted from -0.48% to -0.22% so that the UAAL contribution won't become negative after applying the phase-in (we have limited that to 0%).
2 Net of an adjustment to reflect 18-month delay between date of valuation and date of rate implementation for all actuarial experience.
3 Effect of other experience (gain)/loss for RG #11 includes: 1.21% due to retirement loss and 1.07% due to previous unreported beneficiary. RG #12 includes: -0.76% due to retirement gain and -0.22% due to termination gain.

Section 4: Actuarial Valuation Basis

Exhibit V: Reconciliation of Employer Contribution Rates by Rate Group (continued)

The reconciliation of the employer contribution rates for the Safety Rate Groups are as follows:

	RG #6	RG #7	RG #8
Average Recommended Employer Contribution as of December 31, 2018 (before adjustments for additional UAAL contributions and phase-in)	57.36%	66.64%	48.99%
• Adjustment to FY20-21 rates for additional UAAL contributions from OCSD and TCA	0.00%	0.00%	0.00%
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	(2.13%)	(1.85%)	(1.15%)
Average Recommended Employer Contribution as of December 31, 2018 (after adjustments for additional UAAL contributions and phase-in)	55.23%	64.79%	47.84%
• Effect of investment loss (after smoothing)	0.24%	0.26%	0.23%
• Effect of additional UAAL contributions from OCFA	0.00%	0.00%	(0.60%)
• Effect of $18.6 million asset transfer from O.C. Sanitation District UAAL Deferred Account	0.00%	0.00%	0.00%
• Effect of difference in actual versus expected contributions (including loss from phase-in)	0.90%	0.41%	0.16%
• Effect of difference in actual versus expected COLA increases	0.53%	0.73%	0.52%
• Effect of difference in actual versus expected salary increases	(0.87%)	0.31%	0.30%
• Effect of growth in total payroll greater than expected	1.74%	(0.85%)	(1.82%)
• Effect of other experience (gain)/loss[1,2]	(0.21%)	0.05%	0.93%
• Effect of three-year phase-in of UAAL cost impact due to changes in actuarial assumptions	2.13%	1.85%	1.15%
Total change	4.46%	2.76%	0.87%
Average Recommended Employer Contribution as of December 31, 2019	59.69%	67.55%	48.71%

[1] Net of an adjustment to reflect 18-month delay between date of valuation and date of rate implementation for all actuarial experience.
[2] Effect of other experience (gain)/loss for RG #8 includes: 0.92% increase in the employer Normal Cost rate due to the 61 new hires from the City of Garden Grove. The average entry age has changed from 26.4 to 32.0.

Section 4: Actuarial Valuation Basis

Exhibit VI: Reconciliation of UAAL by Rate Group

The reconciliation of UAAL for the General Rate Groups #1 to #5 are as follows ($ in '000s):

		RG #1	RG #2	RG #3	RG #5
1	Unfunded Actuarial Accrued Liability at beginning of year (before adjustments for additional UAAL contributions)	$96,456	$3,429,915	$7,753	$241,221
	a) Additional UAAL contributions from OCSD and TCA[1]	0	0	(7,753)	0
2	Unfunded Actuarial Accrued Liability at beginning of year (after adjustments for additional UAAL contributions)	$96,456	$3,429,915	$0	$241,221
3	Total Normal Cost at middle of year	17,606	266,198	17,605	23,263
4	Expected employer and member contributions	(22,720)	(561,925)	(17,605)	(44,075)
5	Interest	6,672	233,557	0	16,543
6	Expected Unfunded Actuarial Accrued Liability at end of year	$98,014	$3,367,745	$0	$236,952
7	Changes due to:				
	a) Investment losses (on smoothed value of assets)	$1,338	$27,067	$2,347	$2,422
	b) Effect of additional UAAL contributions from OCFA, Vector Control, DOE, and UCI	(4,100)	0	0	0
	c) Transfer from O.C. Sanitation District UAAL Deferred Account	0	0	(18,631)	0
	d) Difference in actual versus expected contributions (including loss from phase-in)	1,801	88,824	1,603	8,112
	e) Difference in actual versus expected salary increases	(7,606)	(57,650)	4,962	(3,953)
	f) Difference in actual versus expected COLA increases	2,862	72,275	4,887	6,575
	g) Other experience (gain)/loss	(2,688)	55,487	4,832	(922)
	Total changes	$(8,393)	$186,003	$0	$12,234
8	Unfunded Actuarial Accrued Liability at end of year	$89,621	$3,553,748	$0	$249,186

[1] Effect of $8 million in additional contributions for O.C. Sanitation District to pay off their UAAL as of December 31, 2018.

Section 4: Actuarial Valuation Basis

Exhibit VI: Reconciliation of UAAL by Rate Group (continued)

The reconciliation of UAAL for the General Rate Groups #9 to #12 are as follows ($ in '000s):

		RG #9	RG #10	RG #11	RG #12
1	Unfunded Actuarial Accrued Liability at beginning of year (before adjustments for additional UAAL contributions)	$12,390	$47,228	$36	$233
	a) Additional UAAL contributions from OCSD and TCA[1]	(12,390)	0	0	0
2	Unfunded Actuarial Accrued Liability at beginning of year (after adjustments for additional UAAL contributions)	$0	$47,228	$36	$233
3	Total Normal Cost at middle of year	1,685	6,720	364	294
4	Expected employer and member contributions	(1,685)	(11,048)	(368)	(314)
5	Interest	0	3,127	3	19
6	Expected Unfunded Actuarial Accrued Liability at end of year	$0	$46,027	$35	$232
7	Changes due to:				
	a) Investment losses (on smoothed value of assets)	$146	$667	$34	$35
	b) Effect of additional UAAL contributions from OCFA, Vector Control, DOE, and UCI	0	(6,855)	0	0
	c) Transfer from O.C. Sanitation District UAAL Deferred Account	0	0	0	0
	d) Difference in actual versus expected contributions (including loss from phase-in)	(323)	(879)	29	39
	e) Difference in actual versus expected salary increases	168	1,951	(39)	(112)
	f) Difference in actual versus expected COLA increases	303	2,285	42	59
	g) Other experience (gain)/loss	79	2,907	547	(222)
	Total changes	$373	$76	$613	$(201)
8	Unfunded Actuarial Accrued Liability at end of year	$373	$46,103	$648	$31

[1] Effect of $12 million in additional contributions for Transportation Corridor Agency to pay off their UAAL as of December 31, 2018.

Section 4: Actuarial Valuation Basis

Exhibit VI: Reconciliation of UAAL by Rate Group (continued)

The reconciliation of UAAL for the Safety Rate Groups are as follows ($ in '000s):

		RG #6	RG #7	RG #8
1	Unfunded Actuarial Accrued Liability at beginning of year (before adjustments for additional UAAL contributions)	$259,769	$1,234,367	$379,561
	a) Additional UAAL contributions from OCSD and TCA	0	0	0
2	Unfunded Actuarial Accrued Liability at beginning of year (after adjustments for additional UAAL contributions)	$259,769	$1,234,367	$379,561
3	Total Normal Cost at middle of year	25,530	102,992	54,151
4	Expected employer and member contributions	(47,632)	(207,991)	(87,236)
5	Interest	17,747	83,704	25,786
6	Expected Unfunded Actuarial Accrued Liability at end of year	$255,414	$1,213,072	$372,262
7	Changes due to:			
	a) Investment losses (on smoothed value of assets)	$2,098	$9,602	$4,758
	b) Effect of additional UAAL contributions from OCFA, Vector Control, DOE, and UCI	0	0	(12,372)
	c) Transfer from O.C. Sanitation District UAAL Deferred Account	0	0	0
	d) Difference in actual versus expected contributions (including loss from phase-in)	7,992	14,963	3,254
	e) Difference in actual versus expected salary increases	(7,746)	11,137	6,172
	f) Difference in actual versus expected COLA increases	4,695	26,520	10,717
	g) Other experience (gain)/loss	1,024	12,801	3,788
	Total changes	$8,063	$75,023	$16,317
8	Unfunded Actuarial Accrued Liability at end of year	$263,477	$1,288,095	$388,579

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OCERS
EMPLOYEES RETIREMENT SYSTEM

Memorandum

DATE: June 15, 2020

TO: Members, Board of Retirement

FROM: Brenda Shott, Assistant CEO, Finance and Internal Operations; Tracy Bowman, Director of Finance

SUBJECT: **2019 AUDITED FINANCIAL STATEMENTS AND COMPREHENSIVE ANNUAL FINANCIAL REPORTS**

Recommendation

Approve the following recommendations presented to the Audit Committee during a meeting held on June 4, 2020:

1. Approve OCERS' audited financial statements for the year ended December 31, 2019
2. Direct staff to finalize OCERS' 2019 Comprehensive Annual Financial Report (CAFR)
3. Approve the Governmental Accounting Standards Board (GASB) Statement 67 Actuarial Valuation as of December 31, 2019
4. Receive and file Macias, Gini & O'Connell LLP's (MGO) "OCERS' Report to the Audit Committee for the Year Ended December 31, 2019" and their "Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*"

Background/Discussion

The attached draft of OCERS' 2019 CAFR, including the audited financial statements and related notes for the year ended December 31, 2019, are considered to be in substantially final form and include the unmodified (clean) audit opinion from MGO, OCERS' independent auditors. The audited financial statements and related notes are included in the Financial Section of OCERS' 2019 CAFR.

The attached Governmental Accounting Standards Board (GASB) Statement 67 Actuarial Valuation as of December 31, 2019 is used for reporting purposes and is separate and distinct from the funding actuarial valuation. This valuation has been audited by MGO and contains necessary information and schedules that have been incorporated into Note 9 and the Required Supplementary Information sections of OCERS' 2019 CAFR in compliance with GASB Statement No. 67, *Financial Reporting for Pension Plans*.

As part of the normal course of an annual financial statement audit, MGO has issued their "Report to the Audit Committee" that includes the required communications of the independent auditors, comments and recommendations based on their 2019 audit of OCERS and the status of prior year comments and recommendations reported to the Audit Committee related to their 2018 audit of OCERS (which there were none). MGO has also issued an "Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements, Performed in Accordance with Government Auditing Standards."

MGO presented their reports to the Audit Committee Meeting on June 4, 2020 and provided a detailed verbal report on their audit. Due to the short turn-around time between the Audit Committee meeting and the Regular Board meeting, those minutes are not yet available.

OCERS
EMPLOYEES RETIREMENT SYSTEM

Memorandum

California's Government Code Section 7504 requires all state and local retirement agencies, including OCERS, to submit annual financial information to the State Controller within six months of the end of the fiscal year end. The State Controller's Office (SCO) has an automated system to allow retirement systems to provide the prescribed report containing specific financial and plan information to the SCO (this report is referred to as the State Controller's Report). In addition to the State Controller's Report, OCERS is also required to submit the annual audited financial statements and the most current funding actuarial valuation. Once the Board approves the financial statements for the year ended December 31, 2019, staff will file a timely submission of the State Controller's Report and submit OCERS' 2019 CAFR and the Actuarial Valuation (for funding purposes) as of December 31, 2018 by the deadline of June 30, 2020.

Submitted by:

Tracy Bowman
Director of Finance

Approved by:

Brenda M Shott

Brenda Shott
Asst. CEO, Finance & Internal Operations

2011

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

2019 Audited Financial Statements

Presented on June 15, 2020

by

Brenda Shott and Tracy Bowman

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Recommendation

Approve the following recommendations presented to the Audit Committee during a meeting held on June 4, 2020:

1. Approve OCERS' audited financial statements for the year ended December 31, 2019
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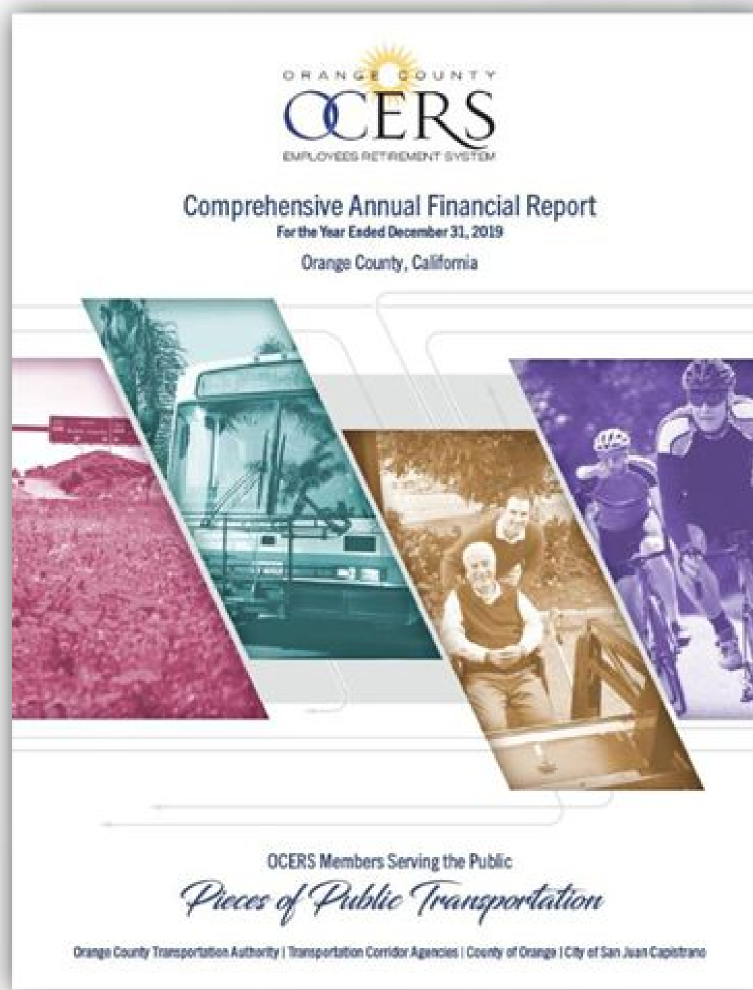
ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

2019 CAFR

- **Audit and preparation of CAFR performed and completed during Stay at Home Orders**
- MGO has issued an **"unqualified"** or **"clean"** opinion on the December 31, 2019 audited financial statements
- Preliminary unaudited financial statements provided to the Board in March
  - No material changes reflected in final audited version included in the CAFR
- Theme: OCERS Members Serving the Public
  - Pieces of Public Transportation
- Implemented GASB 84, *Fiduciary Activities*
- CAFR includes subsequent event disclosure related to impact of coronavirus COVID-19 pandemic



"We provide secure retirement and disability benefits with the highest standards of excellence."

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Financial Highlights – MD&A

- Net position totaled $17.1 billion, an increase of $2.3 billion or 15.4% from the prior year
  - ➢ Net investment income of $2.2 billion, or 14.41% vs. a net loss of -$331.2 million, or -1.67% in the prior year
  - ➢ Employee and employer contributions for pension and health care added $990.7 million
- Increases offset by member pension benefit payments of $887 million, an increase of 9.0% or $73.2 million from the prior year
- Net position restated by $15.5 million due to implementation of GASB 84

Table 2: Changes in Fiduciary Net Position
For the Years Ended December 31, 2019 and 2018
(Dollars in Thousands)

	12/31/2019	12/31/2018	Increase / (Decrease)	Percentage Change
Additions				
Employer Pension Contributions	$ 653,793	$ 580,905	$ 72,888	12.5%
Employer Health Care Contributions	56,899	57,056	(157)	-0.3%
Employee Pension Contributions	279,373	270,070	9,303	3.4%
Other Postemployment Contributions	613	-	613	
Net Investment Income/(Loss)	2,235,897	(331,206)	2,567,103	-775.1%
Total Additions	**3,226,575**	**576,825**	**2,649,750**	**459.4%**
Deductions				
Participant Benefits - Pension	887,003	813,775	73,228	9.0%
Participant Benefits - Health Care	40,030	38,367	1,663	4.3%
Death Benefits	650	570	80	14.0%
Member Withdrawals and Refunds	13,249	13,933	(684)	-4.9%
Other Postemployment Benefits	1,318	-	1,318	
Administrative Expenses - Pension	19,171	18,284	887	4.9%
Administrative Expenses - Health Care and OPEB 115	61	50	11	22.0%
Total Deductions	**961,482**	**884,979**	**76,503**	**8.6%**
Increase/(Decrease) in Net Position Restricted for Pension, Other Postemployment Benefits and OPEB 115	2,265,093	(308,154)	2,573,247	-835.1%
Net Position Restricted for Pension, Other Postemployment Benefits and OPEB 115				
Beginning of the Year, as Previously Reported	14,827,795	15,135,949		
Restatement of Net Position	15,496	-		
Beginning of the Year, as Restated	14,843,291	15,135,949		
End of the Year	**$ 17,108,384**	**$ 14,827,795**		

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ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Financial Highlights – MD&A (continued)

Table 3: Membership Data
As of December 31, 2019 and 2018

	12/31/2019	12/31/2018	Increase/ (Decrease)	Percentage Change
Active Members	22,257	21,929	328	1.5%
Retired Members	18,420	17,674	746	4.2%
Deferred Members	6,520	6,026	494	8.2%
Total Membership	47,197	45,629	1,568	3.4%

- Increases in member pension benefit payments can be attributed to an increase in the number of retirees receiving a benefit
  - Number of retirees increased by 4.2% or 746, for a total of 18,420 payees as of December 31, 2019
  - The average benefit paid to retired members and beneficiaries during 2019 was $48,154 vs. $46,044 in 2018, an increase of 4.6%

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ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Financial Highlights – MD&A (continued)

- CAFR includes information from the December 31, 2018 funding valuation, which is the most currently available information at the time the CAFR is completed
  - Funding status based on actuarial value of assets (which smooths market gains and losses over five years) was 72.43% versus 69.31% if market gains and losses were recognized immediately
  - In comparison, in the December 31, 2019 funding valuation to be presented at the June Board meeting, the funding status based on actuarial value of assets was 73.17% versus 75.36% if market gains and losses were recognized immediately

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ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

GASB 84, *Fiduciary Activities*

- Impact of GASB 84, *Fiduciary Activities*
  - Prior to implementation, assets were offset by liabilities and reported in the Statement of Fiduciary Net Position as an Agency Fund with zero impact on Net Position
  - Name of fund changed from OPEB 115 Agency Fund to OPEB 115 Custodial Fund
  - Custodial Fund will report activity for additions, deductions and net position in the Statement of Changes in Fiduciary Net Position and will report a net position balance going forward
  - Resulted in a restatement of beginning net position of $15.5 million

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ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

GASB 84, *Fiduciary Activities* (continued)

2019

Statement of Fiduciary Net Position

As of December 31, 2019
(with summarized comparative amounts as of December 31, 2018)
(Dollars in Thousands)

	Pension Trust Fund	Health Care Fund-County	Health Care Fund-OCFA	OPEB 115 Custodial Fund	Total Funds	Comparative Totals 2018
Assets						
Cash and Short-Term Investments						
Cash and Cash Equivalents	$ 415,160	$ 9,145	$ 1,032	$ 467	$ 425,804	$ 475,196
Securities Lending Collateral	192,379	4,238	478	-	197,095	321,770
Total Cash and Short-Term Investments	607,539	13,383	1,510	467	622,899	796,966
Receivables						
Investment Income	18,054	398	45	-	18,497	19,623
Securities Sales	335,681	7,394	835	-	343,910	118,301
Contributions	24,104	-	-	-	24,104	20,834
Foreign Currency Forward Contracts	514	11	1	-	526	64
Other Receivables	4,948	109	12	-	5,069	3,234
Total Receivables	383,301	7,912	893	-	392,106	162,056
Investments at Fair Value						
Global Public Equity	6,597,475	145,323	16,405	11,860	6,771,063	5,449,639
Private Equity	1,694,344	37,321	4,213	-	1,735,878	1,494,052
Core Fixed Income	2,787,092	61,391	6,930	5,694	2,861,107	2,644,944
Credit	1,574,316	34,678	3,915	-	1,612,909	1,726,250
Real Assets	2,198,809	48,433	5,467	-	2,252,709	2,671,001
Risk Mitigation	1,666,705	36,713	4,144	-	1,707,562	783,665
Absolute Return	944	21	2	-	967	1,386
Total Investments at Fair Value	16,519,685	363,880	41,076	17,554	16,942,195	14,770,937
Capital Assets, Net	16,060	-	-	-	16,060	18,542
Total Assets	17,526,585	385,175	43,479	18,021	17,973,260	15,748,501
Liabilities						
Obligations Under Securities Lending Program	192,379	4,238	478	-	197,095	321,770
Securities Purchased	301,621	6,644	750	-	309,015	234,056
Unearned Contributions	259,285	-	-	-	259,285	246,133
Foreign Currency Forward Contracts	196	4	-	-	200	2,366
Retiree Payroll Payable	73,559	3,446	798	-	77,803	72,555
Other	20,964	462	52	-	21,478	28,330
Due to Employer	-	-	-	-	-	15,496
Total Liabilities	848,004	14,794	2,078	-	864,876	920,706
Net Position Restricted for Pension, Other Postemployment Benefits and OPEB 115	$16,679,581	$ 370,381	$ 41,401	$ 18,021	$17,109,384	$14,827,795

2018

Statement of Fiduciary Net Position

As of December 31, 2018
(with summarized comparative amounts as of December 31, 2017)
(Dollars in Thousands)

	Pension Trust Fund	Health Care Fund-County	Health Care Fund-OCFA	OPEB 115 Agency Fund	Total Funds	Comparative Totals 2017
Assets						
Cash and Short-Term Investments						
Cash and Cash Equivalents	$ 463,805	$ 9,737	$ 1,236	$ 418	$ 475,196	$ 498,112
Securities Lending Collateral	314,333	6,599	838	-	321,770	194,196
Total Cash and Short-Term Investments	778,138	16,336	2,074	418	796,966	692,308
Receivables						
Investment Income	19,170	402	51	-	19,623	14,034
Securities Sales	115,567	2,426	308	-	118,301	153,988
Contributions	20,834	-	-	-	20,834	21,361
Foreign Currency Forward Contracts	63	1	-	-	64	71
Other Receivables	3,160	66	8	-	3,234	204,045
Total Receivables	158,794	2,895	367	-	162,056	393,499
Investments at Fair Value						
Global Public Equity	5,314,070	111,559	14,165	9,845	5,449,639	6,134,106
Private Equity	1,459,521	30,640	3,891	-	1,494,052	1,345,230
Core Fixed Income	2,578,702	54,135	6,874	5,233	2,644,944	2,061,710
Credit	1,686,353	35,402	4,495	-	1,726,250	2,011,759
Real Assets	2,609,269	54,777	6,955	-	2,671,001	2,471,818
Risk Mitigation	765,553	16,071	2,041	-	783,665	743,591
Absolute Return	1,354	28	4	-	1,386	2,400
Total Investments at Fair Value	14,414,822	302,612	38,425	15,078	14,770,937	14,770,714
Capital Assets, Net	18,542	-	-	-	18,542	20,570
Total Assets	15,370,296	321,843	40,866	15,496	15,748,501	15,877,191
Liabilities						
Obligations Under Securities Lending Program	314,333	6,599	838	-	321,770	194,196
Securities Purchased	228,647	4,800	609	-	234,056	198,510
Unearned Contributions	246,133	-	-	-	246,133	244,552
Foreign Currency Forward Contracts	2,311	49	6	-	2,366	399
Retiree Payroll Payable	69,527	2,728	300	-	72,555	66,244
Other	27,665	590	75	-	28,330	20,606
Due to Employer	-	-	-	15,496	15,496	16,635
Total Liabilities	888,616	14,766	1,828	15,496	920,706	741,242
Net Position Restricted for Pension and Other Postemployment Benefits	$ 14,481,680	$ 307,077	$ 39,038	$ -	$ 14,827,795	$ 15,135,949

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ORANGE COUNTY

OCERS

EMPLOYEES RETIREMENT SYSTEM

GASB 84, *Fiduciary Activities* (continued)

Statement of Changes in Fiduciary Net Position

2019

For the Year Ended December 31, 2019
(with summarized comparative amounts for the Year Ended December 31, 2018)
(Dollars in Thousands)

	Pension Trust Fund	Health Care Fund-County	Health Care Fund-OCFA	OPEB 115 Custodial Fund	Total Funds	Comparative Totals 2018
Additions						
Contributions						
Employer	$ 653,793	$ 54,788	$ 2,111	$ -	$ 710,692	$ 637,961
Employee	279,373	-	-	-	279,373	270,070
Other Postemployment Contributions	-	-	-	613	613	-
Total Contributions	933,166	54,788	2,111	613	990,678	908,031
Investment Income						
Net Appreciation / (Depreciation) in Fair Value of Investments	1,951,974	38,441	4,714	1,097	1,996,226	(476,680)
Dividends, Interest, & Other Investment Income	337,022	7,424	838	2,156	347,440	247,729
Securities Lending Income						
Gross Earnings	7,522	166	19	-	7,707	7,483
Less: Borrower Rebates and Bank Charges	(6,380)	(141)	(16)	-	(6,537)	(5,931)
Net Securities Lending Income	1,142	25	3	-	1,170	1,552
Total Investment Income / (Loss)	2,290,138	45,890	5,555	3,253	2,344,836	(227,399)
Investment Fees and Expenses	(106,330)	(2,342)	(264)	(3)	(108,939)	(103,807)
Net Investment Income / (Loss)	2,183,808	43,548	5,291	3,250	2,235,897	(331,206)
Total Additions	3,116,974	98,336	7,402	3,863	3,226,575	576,825
Deductions						
Participant Benefits	887,003	35,012	5,018	-	927,033	852,142
Death Benefits	650	-	-	-	650	570
Member Withdrawals and Refunds	13,249	-	-	-	13,249	13,933
Other Postemployment Benefits	-	-	-	1,318	1,318	-
Administrative Expenses	19,171	20	21	20	19,232	18,334
Total Deductions	920,073	35,032	5,039	1,338	961,482	884,979
Net Increase / (Decrease)	2,196,901	63,304	2,363	2,525	2,265,093	(308,154)
Net Position Restricted For Pension, Other Postemployment Benefits and OPEB 115, Beginning of Year	14,481,680	307,077	39,038	-	14,827,795	15,135,949
Restatement of Net Position	-	-	-	15,496	15,496	-
Net Position Restricted For Pension, Other Postemployment Benefits and OPEB 115, Beginning of Year as Restated	14,481,680	307,077	39,038	15,496	14,843,291	15,135,949
Ending Net Position Restricted For Pension, Other Postemployment Benefits and OPEB 115	$ 16,678,581	$ 370,381	$ 41,401	$ 18,021	$ 17,108,384	$ 14,827,795

Statement of Changes in Fiduciary Net Position

2018

For the Year Ended December 31, 2018
(with summarized comparative amounts for the Year Ended December 31, 2017)
(Dollars in Thousands)

	Pension Trust Fund	Health Care Fund-County	Health Care Fund-OCFA	Total Funds	Comparative Totals 2017
Additions					
Contributions					
Employer	$ 580,905	$ 52,520	$ 4,536	$ 637,961	$ 634,348
Employee	270,070	-	-	270,070	262,294
Total Contributions	850,975	52,520	4,536	908,031	896,642
Investment Income					
Net Appreciation / (Depreciation) in Fair Value of Investments	(466,741)	(8,839)	(1,100)	(476,680)	1,844,814
Dividends, Interest, & Other Investment Income	242,004	5,080	645	247,729	213,556
Securities Lending Income					
Gross Earnings	7,311	153	19	7,483	3,576
Less: Borrower Rebates and Bank Charges	(5,794)	(122)	(15)	(5,931)	(1,930)
Net Securities Lending Income	1,517	31	4	1,552	1,646
Total Investment Income / (Loss)	(223,220)	(3,728)	(451)	(227,399)	2,060,016
Investment Fees and Expenses	(101,408)	(2,129)	(270)	(103,807)	(81,145)
Net Investment Income / (Loss)	(324,628)	(5,857)	(721)	(331,206)	1,978,871
Total Additions	526,347	46,663	3,815	576,825	2,875,513
Deductions					
Participant Benefits	813,775	33,290	5,077	852,142	785,804
Death Benefits	570	-	-	570	694
Member Withdrawals and Refunds	13,933	-	-	13,933	13,866
Administrative Expenses	18,284	20	30	18,334	17,051
Total Deductions	846,562	33,310	5,107	884,979	817,415
Net Increase / (Decrease)	(320,215)	13,353	(1,292)	(308,154)	2,058,098
Net Position Restricted For Pension and Other Postemployment Benefits, Beginning of Year	14,801,895	293,724	40,330	15,135,949	13,077,851
Ending Net Position Restricted For Pension and Other Postemployment Benefits	$14,481,680	$ 307,077	$ 39,038	$14,827,795	$15,135,949

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ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Note 1 – Pension Plan Membership

OCERS Membership - General Members
As of December 31, 2019

Rate Group	Benefit Plan	Tier	Active Vested	Active Non-Vested	Retired Members & Beneficiaries	Deferred Members	Total
1	A	I	2	-	344	1	347
1	B	II	690	8	439	288	1,425
1	U	II-PEPRA	269	681	3	292	1,245
Rate Group 1 Total			961	689	786	581	3,017
2	A	I	-	-	2,906	11	2,917
2	B	II	-	-	1,917	681	2,598
2	I	I	21	-	1,141	-	1,162
2	J	II	8,791	140	5,976	2,315	17,222
2	P	II	166	16	8	85	275
2	S	II	9	7	1	5	22
2	T	II-PEPRA	876	4,064	3	1,226	6,169
2	U	II-PEPRA	47	201	-	48	296
2	W	II-PEPRA	-	1	-	-	1
Rate Group 2 Total			9,910	4,429	11,952	4,371	30,662
3	A	I	-	-	79	1	80
3	B	II	39	12	64	45	160
3	G	I	1	-	29	-	30
3	H	II	321	-	336	54	711
3	U	II-PEPRA	46	189	-	35	270
Rate Group 3 Total			407	201	508	135	1,251
4	H	II	-	-	1	-	1
Rate Group 4 Total			-	-	1	-	1
5	A	I	2	-	378	3	383
5	B	II	937	31	1,067	527	2,562
5	U	II-PEPRA	2	378	2	106	488
Rate Group 5 Total			941	409	1,447	636	3,433
9	A	I	-	-	4	-	4
9	B	II	-	-	10	11	21
9	N	II	29	1	40	42	112
9	U	II-PEPRA	3	28	1	14	46
Rate Group 9 Total			32	29	55	67	183
10	A	I	-	-	7	-	7
10	B	II	-	-	40	8	48
10	I	I	-	-	16	-	16
10	J	II	123	-	129	88	340
10	N	II	19	17	1	19	56
10	U	II-PEPRA	14	137	3	94	248
Rate Group 10 Total			156	154	196	209	715
11	A	I	-	-	4	-	4
11	B	II	-	-	3	-	3
11	N	II	15	-	6	2	23
11	U	II-PEPRA	1	8	-	-	9
Rate Group 11 Total			16	8	13	2	39
12	A	I	-	-	2	-	2
12	B	II	-	-	4	1	5
12	H	II	12	-	7	2	21
12	U	II-PEPRA	-	2	-	-	2
Rate Group 12 Total			12	2	13	3	30
Total General Members			12,435	5,921	14,971	6,004	39,331

OCERS Membership - Safety Members
As of December 31, 2019

Rate Group	Benefit Plan	Tier	Active Vested	Active Non-Vested	Retired Members & Beneficiaries	Deferred Members	Total
6	C	I	-	-	88	-	88
6	D	II	-	-	45	35	80
6	E	I	-	-	44	-	44
6	F	II	657	4	259	177	1,097
6	V	II-PEPRA	7	68	-	10	85
Rate Group 6 Total			664	72	436	222	1,394
7	C	I	-	-	462	-	462
7	D	II	-	-	263	43	306
7	E	I	-	-	281	-	281
7	F	II	1,018	-	1,232	91	2,341
7	R	II	375	15	2	33	425
7	V	II-PEPRA	138	513	4	27	682
Rate Group 7 Total			1,531	528	2,244	194	4,497
8	C	I	-	-	26	-	26
8	D	II	-	-	68	5	73
8	E	I	-	-	16	-	16
8	F	II	659	1	656	46	1,362
8	R	II	35	121	1	7	164
8	V	II-PEPRA	57	233	2	42	334
Rate Group 8 Total			751	355	769	100	1,975
Total Safety Members			2,946	955	3,449	516	7,866
Grand Total			15,381	6,876	18,420	6,520	47,197

Page 31 and 32

"We provide secure retirement and disability benefits with the highest standards of excellence."

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

GASB 67

- GASB 67 Valuation is prepared by Segal for ***reporting purposes only***
  - Information is incorporated into the Notes (Note 9) and Required Supplementary Information sections of the CAFR
  - Total Pension Liability (TPL) is based on rolling forward the TPL from the 2018 valuation to the December 31, 2019 measurement date
- 2019 Net Pension Liability (NPL) decreased from $6.2 billion to $5.1 billion, primarily due to higher than expected returns
  - 2019 NPL is amount used in GASB 68 proportionate share calculation

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Note 10 – Subsequent Event

Notes to the Basic Financial Statements

NOTE 10 : Subsequent Event

In March 2020, the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, has adversely affected workforces, customers, economies, and financial markets globally, potentially leading to an economic downturn. On March 19, 2020, Governor Gavin Newsom issued a Stay at Home Order and OCERS has been diligently working to maintain normal operation remotely. There has been no significant disruption to the operation since the Stay at Home Order and OCERS' investment performance has been closely monitored. OCERS' investment strategy is to maintain a well-diversified portfolio in order to mitigate the risk of market uncertainty. The System is exposed to general and private market risk. In a pension plan context, this is the risk that the long-term rate of return earned on the pension plan assets could be below the actuarially assumed rate of return, which is 7.00%. Market risk could impact the financial condition of the System and the plan participant actuarial determined contributions. The System's actuarial valuations use a five year smoothing method for investment returns; any contribution rate impact from the capital markets depends in large measure on how deep the future market downturn is, how long it lasts, and how it fits within the fiscal year reporting periods. There has not been any significant decline in OCERS' investment portfolio. The fair value of the System's investments as of December 31, 2019 and March 31, 2020 (based on available information) were $16.9 billion and $15.5 billion, respectively. The fair value of the portfolio declined approximately -8.87% during the quarter ended March 31, 2020, (based on available information). Constructed to protect assets in down markets, the OCERS' investment portfolio ranked in the top 7% of peer U.S. pension plans and in the top 11% for the quarter and trailing one-year period ended March 31, 2020, respectively. OCERS' defensive positioning has propelled the System to a top quartile ranking amongst other U.S. pensions for the trailing three- and five-year periods ended March 31, 2020. Subsequent to March 31, 2020 and through the date of issuance, the global markets have recouped approximately 50% of early 2020 losses and the OCERS' portfolio has responded accordingly.

"We provide secure retirement and disability benefits with the highest standards of excellence."

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Conclusion

Questions?

"We provide secure retirement and disability benefits with the highest standards of excellence."

Please refer to the Financial Reports on the OCERS' website (https://www.ocers.org/financial-reports) **to view the final version of the audited financial statements included in the Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 2019.**

Segal

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Vice President & Actuary
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180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com

Via Email

June 5, 2020

Mr. Steve Delaney
Chief Executive Officer
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701-3101

Re: Orange County Employees Retirement System (OCERS)
Addendum to Governmental Accounting Standards Board (GASB) Statement 67
Actuarial Valuation as of December 31, 2019

Dear Steve:

In our Governmental Accounting Standards Board (GASB) Statement 67 report dated May 6, 2020, we provide the Net Pension Liability (NPL) and other elements that are required for completing the Plan's financial reporting requirements under Statement 67. In this letter, we have provided as an Addendum to that report two additional schedules that the American Institute of Certified Public Accountants (AICPA) State and Local Government Expert Panel recommends be prepared by the Retirement System's actuary (Segal) for use in allocating the NPL and pension expense by employer before we issue the full companion report for the employer's financial reporting for OCERS under GASB Statement 68. It should be pointed out that we have prepared these schedules under our contract with OCERS. All statements made in this letter (and our full report for GASB 68) are statements by Segal and not the responsibility of OCERS.

These two schedules have been developed based on the assumptions, methods and results shown in our earlier GASB 67 report dated May 6, 2020. Exhibits A1 and A2 show the method used for allocating the NPL along with the NPL amounts allocated amongst all of the employers in OCERS as of December 31, 2018 and December 31, 2019, respectively. Exhibit B is a summary that shows the allocated NPL, deferred outflows and inflows of resources and pension expense by employer. Further information regarding GASB 68 including additional information that employers will need to disclose will be provided in a separate report.

The undersigned is a member of the American Academy of Actuaries and I meet the Qualification Standard of the American Academy of Actuaries to render the actuarial opinion herein.

Please give us a call if you have any questions.

Sincerely,

Andy Yeung

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

JY/bbf
Enclosures

cc: Tracy Bowman
Brenda Shott

Segal

Exhibit A1

Schedule of Employer Allocations as of December 31, 2018

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2018 to December 31, 2018

Employer	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$13,361,000	98.591%	$252,306,000	87.908%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	2,187,000	0.762%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	2,437,000	0.849%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	7,728,000	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	185,000	0.064%	0	0.000%
Local Agency Formation Comm.	0	0.000%	120,000	0.042%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	29,779,000	10.375%	0	0.000%
O.C. IHSS Public Authority	191,000	1.409%	0	0.000%	0	0.000%
Total for all Employers	**$13,552,000**	**100.000%**	**$287,014,000**	**100.000%**	**$7,728,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2018 to December 31, 2018

Employer	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	1,641,000	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	24,725,000	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$0**	**100.000%**	**$24,725,000**	**100.000%**	**$1,641,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2018 to December 31, 2018

Employer	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	171,000	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	169,000	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	8,206,000	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$8,206,000**	**100.000%**	**$171,000**	**100.000%**	**$169,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2018 to December 31, 2018

Employer	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$28,033,000	100.000%	$143,462,000	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	59,905,000	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$28,033,000**	**100.000%**	**$143,462,000**	**100.000%**	**$59,905,000**	**100.000%**

Note: Results may not total due to rounding

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2018 to December 31, 2018

Employer	Total Contributions [1]	Total Percentage
Orange County	$437,162,000	76.079%
O.C. Cemetery District	171,000	0.030%
O.C. Law Library	169,000	0.029%
O.C. Vector Control District	0	0.000%
O.C. Retirement System	2,187,000	0.381%
O.C. Fire Authority	68,111,000	11.854%
Cypress Recreation and Parks	0	0.000%
Department of Education	0	0.000%
Transportation Corridor Agency	1,641,000	0.286%
City of San Juan Capistrano	2,437,000	0.424%
O.C. Sanitation District	7,728,000	1.345%
O.C. Transportation Authority	24,725,000	4.303%
U.C.I.	0	0.000%
O.C. Children and Families Comm.	185,000	0.032%
Local Agency Formation Comm.	120,000	0.021%
Rancho Santa Margarita	0	0.000%
O.C. Superior Court	29,779,000	5.183%
O.C. IHSS Public Authority	191,000	0.033%
Total for all Employers	**$574,606,000**	**100.000%**

Note: Results may not total due to rounding.

[1] Excludes additional contributions of $23,437,000 made by O.C. Fire Authority towards the reduction of their UAALs, combined contributions of $3,916,000 made by Cypress Recreation and Parks, Department of Education and U.C.I. and combined employer pick-up contributions of $164,000.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Allocation of December 31, 2018 Net Pension Liability

Employer	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$71,865,137	62.935%	$3,246,653,910	87.685%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District[2]	2,492,695	2.183%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	28,844,760	0.779%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks[2]	408,781	0.358%	0	0.000%	0	0.000%
Department of Education[2]	3,517,372	3.080%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	32,142,058	0.868%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	29,029,145	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I. [2]	34,808,679	30.483%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	630,610	0.017%	0	0.000%
Local Agency Formation Comm.	0	0.000%	1,582,703	0.043%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	392,760,910	10.608%	0	0.000%
O.C. IHSS Public Authority	1,097,009	0.961%	0	0.000%	0	0.000%
Total for all Employers	**$114,189,673**	**100.000%**	**$3,702,614,951**	**100.000%**	**$29,029,145**	**100.000%**

Note: Results may not total due to rounding.

[2] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2017 to December 31, 2018 for the actual contributions, benefit payments and return on their VVAs during 2018. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2018. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2017).

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Allocation of December 31, 2018 Net Pension Liability

Employer	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	13,253,632	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	269,788,642	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	1,284	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$1,284**	**100.000%**	**$269,788,642**	**100.000%**	**$13,253,632**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Allocation of December 31, 2018 Net Pension Liability

Employer	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	962,119	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	573,252	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	55,836,641	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$55,836,641**	**100.000%**	**$962,119**	**100.000%**	**$573,252**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Allocation of December 31, 2018 Net Pension Liability

Employer	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$289,061,877	100.000%	$1,310,995,988	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	410,894,885	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$289,061,877**	**100.000%**	**$1,310,995,988**	**100.000%**	**$410,894,885**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Allocation of December 31, 2018 Net Pension Liability

Employer	Total NPL	Total Percentage
Orange County	$4,918,576,912	79.367%
O.C. Cemetery District	962,119	0.016%
O.C. Law Library	573,252	0.009%
O.C. Vector Control District[2]	2,492,695	0.040%
O.C. Retirement System	28,844,760	0.465%
O.C. Fire Authority	466,731,526	7.531%
Cypress Recreation and Parks[2]	408,781	0.007%
Department of Education[2]	3,517,372	0.057%
Transportation Corridor Agency	13,253,632	0.214%
City of San Juan Capistrano	32,142,058	0.519%
O.C. Sanitation District	29,029,145	0.468%
O.C. Transportation Authority	269,788,642	4.353%
U.C.I.[2]	34,808,679	0.562%
O.C. Children and Families Comm.	630,610	0.010%
Local Agency Formation Comm.	1,582,703	0.026%
Rancho Santa Margarita	1,284	0.000%
O.C. Superior Court	392,760,910	6.338%
O.C. IHSS Public Authority	1,097,009	0.018%
Total for all Employers	**$6,197,202,089**	**100.000%**

Note: Results may not total due to rounding.

[2] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2017 to December 31, 2018 for the actual contributions, benefit payments and return on their VVAs during 2018. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2018. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2017).

Exhibit A1 (continued)

Schedule of Employer Allocations as of December 31, 2018

Notes:

1. Based on the January 1, 2018 through December 31, 2018 employer contributions as provided by OCERS. These contributions have been adjusted to exclude employer paid member contributions and they have not been reduced for discount due to prepaid contributions. (It should be noted that we would also have included transfers made from the County Investment Account had those transfers been made in 2018.)

2a. The Net Pension Liability (NPL) for each Rate Group is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The TPL for each Rate Group is obtained from internal valuation results. The Plan's Fiduciary Net Position for each Rate Group is estimated by adjusting the Valuation Value of Assets (VVA) for each membership class by the ratio of the total OCERS Plan's Fiduciary Net Position (excluding the balance of the County Investment Account) to total OCERS VVA. As previously directed by OCERS, the County Investment Account is then allocated among the four County Rate Groups using the proportions of County POB contributions made during 2018. Again, as there were no such County POB contributions made during 2018, we have continued to apply the same proportions determined in 2014 for each of the four County Rate Groups to allocate the $131,890,000 in the County Investment Accout as of December 31, 2018. These amounts are provided in item 3. The O.C. Sanitation District UAAL Deferred Account is allocated entirely to Rate Group #3 and the remaining balance of $14,589,000 in that account has been transferred at the end of the year to partially offset the actuarial losses (primarily from investment after smoothing) during 2018. The balance of the O.C. Sanitation District UAAL Deferred Account is $0 at the end of the year after the transfer.

b. Each of General Rate Groups #3, #4, #5, #9, #10, #11 and #12 and Safety Rate Groups #6, #7 and #8 have only one active employer, so all of the NPL for that Rate Group is allocated to the corresponding employer.

c. For General Rate Groups #1 and #2, the NPL is allocated based on the actual employer contributions within the General Rate Group.
   - The NPL for Rate Group #1 was adjusted by the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I. prior to allocating the net NPL to the other employers in Rate Group #1 as the NPLs for these four employers were calculated separately.
   - Calculate ratio of employer's contributions to the total contributions for the Rate Group. For this purpose, the employer contributions exclude the following amounts:

   (i) Rate Group #1 (Department of Education): $301,000

(ii) Rate Group #1 (U.C.I.): $2,875,000

(iii) Rate Group #1 (Cypress Recreation and Parks): $740,000

- Multiply this ratio (unrounded) by the NPL for the Rate Group to determine the employer's proportionate share of the NPL for the Rate Group.
- The UAAL contributions referenced in (i), (ii) and (iii) above are adjusted with interest to December 31, 2018 and are used to reduce the NPL for the three employers as of December 31, 2018.

3. The percentages of contributions by employer are not exactly equal to the percentages we use to allocate the NPL by employer because the NPL for the County has been reduced to reflect the portion of the County Investment Account that has been allocated among the four County Rate Groups. The amounts of the County Investment Account that have been allocated to those Rate Groups are as follows:

Rate Group #1:	$4,873,766
Rate Group #2:	81,058,036
Rate Group #6:	8,424,297
Rate Group #7:	37,533,901
Total:	$131,890,000

In addition, the NPL for Rate Group #2 was allocated prior to applying the adjusted balance of the $1,744,454 in additional UAAL contributions made by O.C. Children and Families Commission on November 15, 2017. That balance is equal to $1,809,390 as of December 31, 2018 when adjusted with interest for the entire year and UAAL contribution offset starting from July 1, 2018 to December 31, 2018. We would continue to maintain the outstanding balance of the additional UAAL contributions for use in determining the NPL for this employer.

4. If the employer is in several Rate Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Rate Group. Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

Exhibit A2

Schedule of Employer Allocations as of December 31, 2019

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2019 to December 31, 2019

Employer	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$13,232,000	98.599%	$264,402,000	87.836%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	2,503,000	0.832%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	2,444,000	0.812%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	8,056,000	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	106,000	0.035%	0	0.000%
Local Agency Formation Comm.	0	0.000%	139,000	0.046%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	31,424,000	10.439%	0	0.000%
O.C. IHSS Public Authority	188,000	1.401%	0	0.000%	0	0.000%
Total for all Employers	**$13,420,000**	**100.000%**	**$301,018,000**	**100.000%**	**$8,056,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2019 to December 31, 2019

Employer	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	1,248,000	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	26,415,000	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$0**	**100.000%**	**$26,415,000**	**100.000%**	**$1,248,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2019 to December 31, 2019

Employer	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	187,000	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	118,000	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	8,578,000	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$8,578,000**	**100.000%**	**$187,000**	**100.000%**	**$118,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2019 to December 31, 2019

Employer	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$30,025,000	100.000%	$151,060,000	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	61,888,000	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$30,025,000**	**100.000%**	**$151,060,000**	**100.000%**	**$61,888,000**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2019 to December 31, 2019

Employer	Total Contributions [3]	Total Percentage
Orange County	$458,719,000	76.197%
O.C. Cemetery District	187,000	0.031%
O.C. Law Library	118,000	0.020%
O.C. Vector Control District	0	0.000%
O.C. Retirement System	2,503,000	0.416%
O.C. Fire Authority	70,466,000	11.705%
Cypress Recreation and Parks	0	0.000%
Department of Education	0	0.000%
Transportation Corridor Agency	1,248,000	0.207%
City of San Juan Capistrano	2,444,000	0.406%
O.C. Sanitation District	8,056,000	1.338%
O.C. Transportation Authority	26,415,000	4.388%
U.C.I.	0	0.000%
O.C. Children and Families Comm.	106,000	0.018%
Local Agency Formation Comm.	139,000	0.023%
Rancho Santa Margarita	0	0.000%
O.C. Superior Court	31,424,000	5.220%
O.C. IHSS Public Authority	188,000	0.031%
Total for all Employers	**$602,013,000**	**100.000%**

Note: Results may not total due to rounding.

[3] Excludes combined additional contributions of $69,858,000 made by O.C. Fire Authority, Transportation Corridor Agency and O.C. Sanitation District towards the reduction of their UAALs, combined contributions of $3,934,000 made by O.C. Vector Control District, Department of Education and U.C.I. and combined employer pick-up contributions of $35,000.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Allocation of December 31, 2019 Net Pension Liability

Employer	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$45,068,171	57.238%	$2,741,111,450	87.527%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District[4]	(625,500)	(0.794%)	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	26,824,264	0.857%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks[4]	262,415	0.333%	0	0.000%	0	0.000%
Department of Education[4]	3,099,339	3.936%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	26,191,970	0.836%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	(49,446,617)	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.[4]	30,213,739	38.373%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	(646,472)	(0.021%)	0	0.000%
Local Agency Formation Comm.	0	0.000%	1,489,642	0.048%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	336,766,149	10.753%	0	0.000%
O.C. IHSS Public Authority	719,301	0.914%	0	0.000%	0	0.000%
Total for all Employers	**$78,737,465**	**100.000%**	**$3,131,737,003**	**100.000%**	**$(49,446,617)**	**100.000%**

Note: Results may not total due to rounding.

[4] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2018 to December 31, 2019 for the actual contributions, benefit payments and return on their VVAs during 2019. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2019. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2018).

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Allocation of December 31, 2019 Net Pension Liability

Employer	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	(1,753,164)	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	224,284,548	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	(2,214)	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$(2,214)**	**100.000%**	**$224,284,548**	**100.000%**	**$(1,753,164)**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Allocation of December 31, 2019 Net Pension Liability

Employer	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	(228,119)	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	(74,515)	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	32,453,715	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$32,453,715**	**100.000%**	**$(228,119)**	**100.000%**	**$(74,515)**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Allocation of December 31, 2019 Net Pension Liability

Employer	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$235,494,376	100.000%	$1,102,538,243	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	321,941,742	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$235,494,376**	**100.000%**	**$1,102,538,243**	**100.000%**	**$321,941,742**	**100.000%**

Note: Results may not total due to rounding.

Exhibit A2 (continued)

Schedule of Employer Allocations as of December 31, 2019

Allocation of December 31, 2019 Net Pension Liability

Employer	Total NPL	Total Percentage
Orange County	$4,124,212,240	81.254%
O.C. Cemetery District	(228,119)	(0.004%)
O.C. Law Library	(74,515)	(0.001%)
O.C. Vector Control District[4]	(625,500)	(0.012%)
O.C. Retirement System	26,824,264	0.529%
O.C. Fire Authority	354,395,457	6.982%
Cypress Recreation and Parks[4]	262,415	0.005%
Department of Education[4]	3,099,339	0.061%
Transportation Corridor Agency	(1,753,164)	(0.035%)
City of San Juan Capistrano	26,191,970	0.516%
O.C. Sanitation District	(49,446,617)	(0.974%)
O.C. Transportation Authority	224,284,548	4.419%
U.C.I.[4]	30,213,739	0.595%
O.C. Children and Families Comm.	(646,472)	(0.013%)
Local Agency Formation Comm.	1,489,642	0.029%
Rancho Santa Margarita	(2,214)	(0.000%)
O.C. Superior Court	336,766,149	6.635%
O.C. IHSS Public Authority	719,301	0.014%
Total for all Employers	**$5,075,682,463**	**100.000%**

Note: Results may not total due to rounding.

[4] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2018 to December 31, 2019 for the actual contributions, benefit payments and return on their VVAs during 2019. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2019. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2018).

Schedule of Employer Allocations as of December 31, 2019

Notes:

1. Based on the January 1, 2019 through December 31, 2019 employer contributions as provided by OCERS. These contributions have been adjusted to exclude employer paid member contributions and they have not been reduced for discount due to prepaid contributions. (It should be noted that we would also have included transfers made from the County Investment Account had those transfers been made in 2019.)

2a. The Net Pension Liability (NPL) for each Rate Group is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The TPL for each Rate Group is obtained from internal valuation results. The Plan's Fiduciary Net Position for each Rate Group is estimated by adjusting the Valuation Value of Assets (VVA) for each membership class by the ratio of the total OCERS Plan's Fiduciary Net Position (excluding the balance of the County Investment Account and the O.C. Sanitation District UAAL Deferred Account) to total OCERS VVA. As previously directed by OCERS, the County Investment Account is then allocated among the four County Rate Groups using the proportions of County POB contributions made during 2019. Again, as there were no such County POB contributions made during 2019, we have continued to apply the same proportions determined in 2014 for each of the four County Rate Groups to allocate the $150,416,000 in the County Investment Accout as of December 31, 2019. These amounts are provided in item 3. The O.C. Sanitation District UAAL Deferred Account is allocated entirely to Rate Group #3 and the balance of that account has been reduced by from $30,688,000 to $12,057,000 at the end of the year to mitigate the additional UAAL due to actuarial losses (and that UAAL was measured on a VVA basis). Nonetheless, the balance of the O.C. Sanitation District UAAL Deferred Account was used to reduce the NPL for the O.C. Sanitation District as of the measurement date.

b. Each of General Rate Groups #3, #4, #5, #9, #10, #11 and #12 and Safety Rate Groups #6, #7 and #8 have only one active employer, so all of the NPL for that Rate Group is allocated to the corresponding employer.

c. For General Rate Groups #1 and #2, the NPL is allocated based on the actual employer contributions within the General Rate Group.

- The NPL for Rate Group #1 was adjusted by the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I. prior to allocating the net NPL to the other employers in Rate Group #1 as the NPLs for these four employers were calculated separately.
- Calculate ratio of employer's contributions to the total contributions for the Rate Group. For this purpose, the employer contributions exclude the following amounts:

(i) Rate Group #1 (Department of Education):	$267,000
(ii) Rate Group #1 (U.C.I.):	$2,789,000
(iii) Rate Group #1 (O.C. Vector Control District):	$878,000

- Multiply this ratio (unrounded) by the NPL for the Rate Group to determine the employer's proportionate share of the NPL for the Rate Group.
- The UAAL contributions referenced in (i), (ii) and (iii) above are adjusted with interest to December 31, 2019 and are used to reduce the NPL for the three employers as of December 31, 2019.

The percentages of contributions by employer are not exactly equal to the percentages we use to allocate the NPL by employer because the NPL for the County has been reduced to reflect the portion of the County Investment Account that has been allocated among the four County Rate Groups. The amounts of the County Investment Account that have been allocated to those Rate Groups are as follows:

Rate Group #1:	$5,558,363
Rate Group #2:	92,443,896
Rate Group #6:	9,607,620
Rate Group #7:	42,806,121
Total:	$150,416,000

In addition, the NPL for Rate Group #2 was allocated prior to applying the adjusted balance of the $1,744,454 in additional UAAL contributions made by O.C. Children and Families Commission on November 15, 2017. That balance is equal to $1,809,390 as of December 31, 2018 as shown on Exhibit A1 and is equal to $1,782,458 as of December 31, 2019 when adjusted with interest for the entire year and UAAL contribution offset starting from January 1, 2019 to December 31, 2019. We would continue to maintain the outstanding balance of the additional UAAL contributions for use in determining the NPL for this employer.

4. If the employer is in several Rate Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Rate Group. Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

Exhibit B

Schedule of Pension Amounts by Employer as of December 31, 2019 Measurement Date

Deferred Outflows of Resources	**Orange County**	**O.C. Cemetery District**	**O.C. Law Library**	**O.C. Vector Control District**	**O.C. Retirement System**
Differences Between Expected and Actual Experience	$13,982,779	$103,588	$43,407	$170,770	$0
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	587,160,184	556,607	580,153	1,491,917	3,773,899
Changes of Assumptions	322,870,826	244,428	214,778	435,411	2,018,023
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	18,170,596	0	9,214	0	3,962,866
Total Deferred Outflows of Resources	$942,184,385	$904,623	$847,552	$2,098,098	$9,754,788
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	$206,914,979	$582,255	$409,176	$1,511,789	$1,273,114
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	997,095,584	911,694	921,702	2,404,780	6,362,377
Changes of Assumptions	6,642,961	5,895	30,514	0	62,731
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	4,789,699	0	449,137	0	218,343
Total Deferred Inflows of Resources	$1,215,443,223	$1,499,844	$1,810,529	$3,916,569	$7,916,565
Net Pension Liability as of December 31, 2018	$4,918,576,912	$962,119	$573,252	$2,492,695	$28,844,760
Net Pension Liability as of December 31, 2019	$4,124,212,240	$(228,119)	$(74,515)	$(625,500)	$26,824,264
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	$449,535,284	$127,197	$232,335	$(351,264)	$2,317,279
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,270,138	0	(372,508)	0	1,153,331
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	$455,805,422	$127,197	$(140,173)	$(351,264)	$3,470,610

Exhibit B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2019 Measurement Date

Deferred Outflows of Resources	O.C. Fire Authority	Cypress Recreation and Parks	Department of Education	Transportation Corridor Agency	City of San Juan Capistrano
Differences Between Expected and Actual Experience	$24,478,887	$2,252,572	$380,618	$615,484	$0
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	85,355,117	211,982	540,022	1,872,077	3,684,941
Changes of Assumptions	29,267,911	70,336	177,787	880,388	1,970,455
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	0	0	0	887,243
Total Deferred Outflows of Resources	$139,101,915	$2,534,890	$1,098,427	$3,367,949	$6,542,639
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	$38,937,675	$0	$678,741	$940,190	$1,243,105
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	144,282,784	1,844,790	858,174	3,760,486	6,212,405
Changes of Assumptions	130,986	0	10,085	28,116	61,252
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	0	0	0	1,975,710
Total Deferred Inflows of Resources	$183,351,445	$1,844,790	$1,547,000	$4,728,792	$9,492,472
Net Pension Liability as of December 31, 2018	$466,731,526	$408,781	$3,517,372	$13,253,632	$32,142,058
Net Pension Liability as of December 31, 2019	$354,395,457	$262,415	$3,099,339	$(1,753,164)	$26,191,970
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	$67,124,196	$4,345	$271,328	$1,376,160	$2,262,657
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	0	0	0	(298,375)
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	$67,124,196	$4,345	$271,328	$1,376,160	$1,964,282

Exhibit B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2019 Measurement Date

Deferred Outflows of Resources	O.C. Sanitation District	O.C. Transportation Authority	U.C.I.	O.C. Children and Families Comm.	Local Agency Formation Comm.
Differences Between Expected and Actual Experience	$9,606,499	$2,331,117	$1,790,493	$0	$0
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	39,421,678	39,326,279	4,449,052	(90,952)	209,577
Changes of Assumptions	12,311,067	21,920,909	1,425,191	(48,635)	112,068
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	449,137	0	0	0	246,158
Total Deferred Outflows of Resources	$61,788,381	$63,578,305	$7,664,736	$(139,587)	$567,803
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	$5,416,832	$21,768,391	$2,432,087	$(30,682)	$70,700
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	64,842,567	66,279,519	7,119,985	(153,335)	353,324
Changes of Assumptions	372,978	595,454	79,608	(1,512)	3,484
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	9,214	0	0	1,652,118	77,447
Total Deferred Inflows of Resources	$70,641,591	$88,643,364	$9,631,680	$1,466,589	$504,955
Net Pension Liability as of December 31, 2018	$29,029,145	$269,788,642	$34,808,679	$630,610	$1,582,703
Net Pension Liability as of December 31, 2019	$(49,446,617)	$224,284,548	$30,213,739	$(646,472)	$1,489,642
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	$10,009,584	$26,336,223	$2,168,623	$(55,847)	$128,686
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	372,508	0	0	(539,747)	58,155
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	$10,382,092	$26,336,223	$2,168,623	$(595,594)	$186,841

Exhibit B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2019 Measurement Date

Deferred Outflows of Resources	Rancho Santa Margarita	O.C. Superior Court	O.C. IHSS Public Authority	Total for all Employers
Differences Between Expected and Actual Experience	$1,242	$0	$0	$55,757,456
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	3,008	47,379,540	243,386	816,168,467
Changes of Assumptions	480	25,335,345	173,542	419,380,310
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	4,270,636	84,750	28,080,600
Total Deferred Outflows of Resources	$4,730	$76,985,521	$501,678	$1,319,386,833
Deferred Inflows of Resources				
Differences Between Expected and Actual Experience	$5,388	$15,983,355	$237,210	$298,374,305
Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	5,535	79,876,681	396,090	1,383,375,142
Changes of Assumptions	29	787,559	3,713	8,813,853
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	18,899,874	9,058	28,080,600
Total Deferred Inflows of Resources	$10,952	$115,547,469	$646,071	$1,718,643,900
Net Pension Liability as of December 31, 2018	$1,284	$392,760,910	$1,097,009	$6,197,202,089
Net Pension Liability as of December 31, 2019	$(2,214)	$336,766,149	$719,301	$5,075,682,463
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions				
Proportionate Share of Allocable Plan Pension Expense	$(95)	$29,092,356	$169,172	$590,748,219
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	(6,685,009)	41,507	0
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	$(95)	$22,407,347	$210,679	$590,748,219

Schedule of Pension Amounts by Employer as of December 31, 2019 Measurement Date

Notes:

Amounts shown in this exhibit were allocated by employer based on the Employer Allocation Percentage calculated in Exhibit A2.

In determining the pension expense:

- Any differences between projected and actual investment earnings on pension plan investments are recognized over a period of five years beginning with the year in which they occur.
- Current-period (i.e., 2019) differences between expected and actual experience and changes of assumptions are recognized over the average of the expected remaining service lives of all employees that are provided with pensions through OCERS determined as of December 31, 2018 (the beginning of the measurement period ending December 31, 2019) and is 5.86 years.
- Prior-period differences between expected and actual experience and changes of assumptions are continued to be recognized based on the expected remaining service lives of all employees calculated as of those prior measurement dates.

The average of the expected remaining service lives of all employees was 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 members.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

There was a decrease in the total employer pension expense from $783.7 million calculated last year to $590.7 million calculated this year. The primary cause of the decrease was due to an investment gain of $1.2 billion with $234.2 million being recognized in this year's expense.

Note: Results may not total due to rounding.


Orange County Employees Retirement System
FY 2019 Audit Results
PRESENTED BY
Linda Hurley
Partner
June 4, 2020
MGO
Certified Public Accountants

MGO Certified Public Accountants

Overview

Deliverables/Report Products:

- **Independent Auditor's Report – Basic Financial Statements**
- **Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed In Accordance with Government Auditing Standards**
- **Schedule of Allocated Pension Amounts by Employer**
- **Required Communications**

MGO Certified Public Accountants

Audit Results

Basic Financial Statements:

- **Framework**
  - U.S. Generally Accepted Accounting Principles
  - U.S. Generally Accepted Auditing Standards
  - Government Auditing Standards

- **Unmodified Opinion on Financial Statements**

- **Unmodified Opinion on Schedule of Allocated Pension Amounts by Employer**

MGO Certified Public Accountants

Audit Results

Required Communications:

- **Qualitative Aspects of Significant Accounting Practices**
  - Significant Accounting Policies
  - Significant Accounting Estimates
  - Financial Statement Disclosures
- **Identified or Suspected Fraud**
- **Significant Difficulties Encountered during the Audit**
- **Uncorrected and Corrected Misstatements**
- **Disagreements with Management**
- **Representations Requested from Management**
- **Management's Consultations with Other Accountants**
- **Other Significant Matters, Findings, or Issues**

Questions?

MGO Certified Public Accountants

MGO Certified Public Accountants

June 4, 2020

To the Audit Committee of the
Orange County Employees Retirement System
Santa Ana, California

We have audited the financial statements the Orange County Employees Retirement System (System) as of and for the year ended December 31, 2019 and have issued our report thereon dated June 4, 2020. Professional standards require that we advise you of the following matters relating to our audit.

Our Responsibility in Relation to the Financial Statement Audit

As communicated in our meeting with the Audit Committee on April 20, 2020, our responsibility, as described by professional standards, is to form and express an opinion about whether the financial statements that have been prepared by management with your oversight are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of your respective responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing 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 over financial reporting. Accordingly, as part of our audit, we considered the internal control of the System solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We conducted our audit consistent with the planned scope and timing we previously communicated to you.

Compliance with All Ethics Requirements Regarding Independence

The engagement team, others in our firm, as appropriate, our firm, and our network firms have complied with all relevant ethical requirements regarding independence.

Macias Gini & O'Connell LLP
4675 MacArthur Court, Suite 600
Newport Beach, CA 92660

Qualitative Aspects of the Entity's Significant Accounting Practices

Significant Accounting Policies

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the System is included in Note 2 to the basic financial statements. As described in Note 2 and Note 6 to the basic financial statements, the System implemented the provisions of Governmental Accounting Standards Board (GASB) Statement No. 84, *Fiduciary Activities*, for the year ended December 31, 2019, and the financial statements and the related disclosures reflect the changes as required by GASB 84. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Significant Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

The most sensitive accounting estimates affecting the financial statements are:

- Actuarial valuations of the total pension liability and actuarially determined contributions for the Defined Benefit Pension Plan.

  The actuarial pension data contained in Note 9 to the basic financial statements and required supplementary information is based on actuarial calculations performed by the System's actuary in accordance with the parameters set forth in GASB Statement No. 67, *Financial Reporting for Pension Plans – an amendment of GASB Statement No. 25*. The actuarial pension valuation is sensitive to the underlying assumptions, including the discount rate.

- Fair value of real assets, private equity, absolute return, risk mitigation and diversified credit investments, including derivative investments, and related income.

  Directly held real estate investment fair values are based on recent estimates provided by independent third-party appraisers. Fair values for timber, energy and agriculture are based on independent appraisals and/or estimates made in good faith by the general partner or management. Commingled real estate funds are based on the investment's net asset value per share provided by the investment manager firms/general partners. The fair value of commodities is determined by quoted market prices. The fair value of private equity and absolute return investments that are not publicly traded were determined by management, in consultation with the general partner and valuation specialists, based on the net asset value per share (or its equivalent) of OCERS' ownership interest in partner's capital. The fair values of diversified credit investments and risk mitigation funds structured as partnerships are based on net asset value per share of the investment. The fair values for diversified credit investments comprised of mortgages, direct lending and energy-based credit funds are based on the general partner's estimates considering factors such as market quotes, earnings-multiple analysis or discounted cash flow analysis.

We evaluated the key factors and assumptions used to develop these accounting estimates and determined that they are reasonable in relation to the basic financial statements taken as a whole.

Financial Statement Disclosures

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the System's financial statements relate to:

- Participating employers' net pension liability, which is based on the total pension liability determined in the actuarial valuation as of December 31, 2018, and rolled forward to December 31, 2019, and the related sensitivity analysis. As described in Note 9 to the basic financial statements, the actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and these amounts and assumptions are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

Identified or Suspected Fraud

We have identified no information that indicates that fraud may have occurred.

Significant Difficulties Encountered during the Audit

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

Uncorrected and Corrected Misstatements

For purposes of this communication, professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole. There were no such misstatements identified other than those that are clearly trivial.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the System's financial statements or the auditor's report. No such disagreements arose during the course of the audit.

Representations Requested from Management

We have requested certain written representations from management, which are included in the attached letter dated June 4, 2020.

Management's Consultations with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

Other Significant Matters, Findings, or Issues

In the normal course of our professional association with the System, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, operating and regulatory conditions affecting the entity, and operational plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as the System's auditors.

Other Matters

We applied certain limited procedures to Management's Discussion and Analysis, the Schedule of Changes in Net Pension Liability of Participating Employers, Schedule of Investment Returns, Schedule of Employer Contributions and Notes to the Required Supplementary Information, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on other supplementary information, which accompanies the financial statements, but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

We were not engaged to report on the introductory, investment, actuarial, statistical, and glossary sections, which accompany the financial statements, but are not RSI. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

This report is intended solely for the information and use of the Audit Committee and management of the System and is not intended to be and should not be used by anyone other than these specified parties.

Macias Gini & O'Connell LLP

Newport Beach, CA

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Active Participating Employers:

CITY OF SAN JUAN CAPISTRANO

COUNTY OF ORANGE

ORANGE COUNTY CEMETERY DISTRICT

ORANGE COUNTY CHILDREN & FAMILIES COMMISSION

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM

ORANGE COUNTY FIRE AUTHORITY

ORANGE COUNTY IN-HOME SUPPORTIVE SERVICES PUBLIC AUTHORITY

ORANGE COUNTY LOCAL AGENCY FORMATION COMMISSION

ORANGE COUNTY PUBLIC LAW LIBRARY

ORANGE COUNTY SANITATION DISTRICT

ORANGE COUNTY TRANSPORTATION AUTHORITY

SUPERIOR COURT OF CALIFORNIA, COUNTY OF ORANGE

TRANSPORTATION CORRIDOR AGENCIES

June 4, 2020

Macias Gini & O'Connell LLP
4675 MacArthur Court, Suite 600
Newport Beach, CA 92660

This representation letter is provided in connection with your audit of the financial statements of Orange County Employees' Retirement System (the System) as of December 31, 2019, and for the year then ended, and the related notes to the financial statements, for the purpose of expressing an opinion on whether the basic financial statements present fairly, in all material respects, the financial position and the results of operations of the System in accordance with accounting principles generally accepted for governments in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement.

We confirm that, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves as of the date of this letter:

Financial Statements

1. We have fulfilled our responsibilities, as set out in your FY 2019 Audit Service Plan presented to the Audit Committee on April 20, 2020, for the preparation and fair presentation of the financial statements in accordance with U.S. GAAP and for the preparation of the supplementary information in accordance with the applicable criteria.

2. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

3. We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.

4. We acknowledge our responsibility for compliance with the laws, regulations, and provisions of contracts and grant agreements.

5. We have reviewed, approved, and taken responsibility for the financial statements and related notes.

6. We have a process to track the status of audit findings and recommendations.

7. We have identified and communicated to you all previous audits, attestation engagements, and other studies related to the audit objectives and whether related recommendations have been implemented.

8. We have provided our views on reported findings, conclusions, and recommendations, as well as our planned corrective actions, for the report.

9. Significant assumptions used by us in making accounting estimates, including those measured at fair value, are reasonable.

10. Related party relationships and transactions have been appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP.

11. All events subsequent to the date of the financial statements and for which U.S. GAAP requires adjustment or disclosure have been adjusted or disclosed.

12. The effects of all known actual or possible litigation and claims have been accounted for and disclosed in accordance with U.S. GAAP.

13. Components of fiduciary net position (restricted) are properly classified.

14. Additions and deductions have been appropriately classified in the statement of changes in fiduciary net position.

15. Capital assets, including infrastructure assets, are properly capitalized, reported, and if applicable, depreciated.

16. All required supplementary information (RSI), including that required by Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting For Pension Plans — an Amendment of GASB Statement No. 25* (GASB 67), is measured and presented within the prescribed guidelines and the methods of measurement and presentation have not changed from those used in the prior period. We have disclosed to you any significant assumptions and interpretations underlying the measurement and presentation of the RSI.

17. With regard to investments and other instruments reported at fair value:
    - The underlying assumptions are reasonable and they appropriately reflect management's intent and ability to carry out its stated courses of action.
    - The measurement methods and related assumptions used in determining fair value are appropriate in the circumstances and have been consistently applied.
    - The disclosures related to fair values are complete, adequate, and in accordance with U.S. GAAP.
    - Subsequent events that require adjustments to the fair value measurements and disclosures are included in the financial statements.

Information Provided

18. We have provided you with:
    - Access to all information, of which we are aware that is relevant to the preparation and fair presentation of the financial statements of the various opinion units referred to above, such as records, documentation, meeting minutes, and other matters;
    - Additional information that you have requested from us for the purpose of the audit; and
    - Unrestricted access to persons within the System from whom you determined it necessary to obtain audit evidence.
    - Plan instruments, trust, participation and investment management agreements, insurance contracts, or investment contracts and amendments to such documents entered into during the year, including amendments to comply with applicable laws.
    - Actuarial Reports supporting the funded status and required contributions prepared for the plan and plan sponsors for which the System administers 401(h) accounts.

19. All transactions have been recorded in the accounting records and are reflected in the financial statements.

20. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.

21. We have provided to you our analysis of the System's ability to continue as a going concern, including significant conditions and events present.

22. We have no knowledge of any fraud or suspected fraud that affects the System and involves:
    - Management;
    - Employees who have significant roles in internal control; or
    - Others where the fraud could have a material effect on the financial statements.

23. We have no knowledge of any allegations of fraud, or suspected fraud, affecting the System's financial statements communicated by employees, former employees, vendors, regulators, or others.

24. We have disclosed to you all known actual or possible litigation, claims, and assessments whose effects should be considered when preparing the financial statements.

25. We have disclosed to you the identity of the System's related parties and all the related party relationships and transactions of which we are aware.

26. There have been no communications from regulatory agencies concerning noncompliance with or deficiencies in accounting, internal control, or financial reporting practices.

27. The System has no plans or intentions that may materially affect the carrying value or classification of assets and liabilities.

28. The System has no guarantees, whether written or oral, under which the System is contingently liable.

Macias Gini & O'Connell LLP
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29. We have disclosed to you all significant estimates and material concentrations known to management that are required to be disclosed in accordance with GASB Statement No. 62 (GASB 62), *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*. Significant estimates are estimates at the balance sheet date that could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets or geographic areas for which events could occur that would significantly disrupt normal finances within the next year.

30. We have identified and disclosed to you the laws, regulations, and provisions of contracts and grant agreements that could have a direct and material effect on financial statement amounts, including legal and contractual provisions for reporting specific activities in separate funds.

31. There are no:
    - Violations or possible violations of laws or regulations, or provisions of contracts or grant agreements whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency, including applicable budget laws and regulations.
    - Unasserted claims or assessments that our lawyer has advised are probable of assertion and must be disclosed in accordance with GASB 62.
    - Other liabilities or gain or loss contingencies that are required to be accrued or disclosed by GASB 62
    - Continuing disclosure consent decree agreements or filings with the Securities and Exchange Commission and we have filed updates on a timely basis in accordance with the agreements (Rule 240, 15c2-12).

32. The System has satisfactory title to all owned assets, and there are no liens or encumbrances on such assets nor has any asset or future revenue been pledged as collateral.

33. We have complied with all aspects of grant agreements and other contractual agreements that would have a material effect on the financial statements in the event of noncompliance.

Government—specific

34. The System is qualified under the appropriate section of the Internal Revenue Code and we intend to continue as a qualified System. The System's Board has operated the System in a manner that did not jeopardize this tax status.

35. There are no material violations of finance-related legal and contractual provisions with respect to real estate related debt or other contractual obligations, and all unfunded commitments have been properly disclosed in the notes to the financial statements.

36. All required filings of the System's documents with the appropriate agencies have been made.

37. Provisions for uncollectible receivables have been properly identified and recorded.

38. The amounts and terms of outstanding loans on real estate investments have been properly disclosed. There are no outstanding loans in default, and the System has complied with the loan limits and provisions specified in the System's investment policies.

39. Alternative investment fair values are based upon the net asset values provided by general partners and investment advisors and further supported by audited financial statements. We believe that these values best approximate fair value as of December 31, 2019.

40. Financial instruments with concentrations of credit risk have been properly recorded or disclosed in the financial statements.

41. The System believes that it has properly identified all derivative instruments and the fair values of all derivatives have been determined based on prevailing market prices or by using financial models that we believe are the most appropriate models for valuing such instruments and that incorporate market data and other assumptions that we have determined to be reasonable and appropriate.

42. Derivative instruments are properly classified and disclosed in accordance with the provisions of GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments* (GASB 53). In addition, none of the derivatives held by the System met the definition of hedging transactions under GASB 53.

43. Arrangements with financial institutions involving securities lending agreements, compensating balances, or other arrangements involving restrictions on cash balances and line-of-credit or similar arrangements, have been properly recorded or disclosed in the financial statements.

44. Deposit and investment risks have been properly and fully disclosed in accordance with the provisions of GASB Statement No. 40, *Deposit an Investment Risk Disclosures, an amendment of GASB Statement No. 3* (GASB 40), and investments are properly valued.

45. We believe that the System's investments considered to be highly sensitive to interest rate changes, as described in paragraph 16 of GASB 40 are adequately disclosed in Note 3 to the basic financial statements.

46. We believe that the System's derivative instruments considered to be highly sensitive to interest rate changes, as described in paragraph 76(b) of GASB 53, are adequately disclosed in Note 3 to the basic financial statements.

47. We are in agreement with the methods and approach used by investment general partners, investment advisors and appraisers in determining the fair value of real estate investments, alternative investments, and other investments where no readily ascertainable market value exists.

48. The System has properly recorded contributions, which are due pursuant to legal requirements for the defined benefit pension plan.

49. The System has properly recorded benefit payments, when benefits are currently due and payable in accordance with benefit terms for the defined benefit pension plan.

50. We have evaluated and implemented the relevant provisions of GASB Statement No. 84, *Fiduciary Activities* (GASB 84). The implementation of GASB 84 resulted in the Orange County Transportation Authority (OCTA) 115 Agency Fund being reclassified as a custodial fund and has been renamed the OCTA 115 Custodial Fund. The System has properly presented the custodial fund's balances and activities in the Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position, respectively, and disclosed the beginning net position restatement in note 6 to the basic financial statements.

51. The System is responsible for determining the fair value of certain investments as required by GASB Statement No. 72, *Fair Value Measurement and Application* (GASB 72). The amounts reported present the System's best estimate of their fair value of investments. In accordance with GASB 72, the System disclosed the methods and significant assumptions used to estimate the fair value of its investments and has properly classified and reported investments, including the classification and disclosure of the leveling of investments in accordance with GASB 72.

52. The methods and significant assumptions used to estimate fair values of financial instruments, including non-readily marketable securities are proper based on the provision of GASB 67 and GASB 72, and are summarized as follows:
    - The measurement methods, including the related assumptions, used in determining fair value were appropriate and were consistently applied.
    - The fair values of publically traded investments are generally based on published market prices and quotations from major investment firms.
    - International investments have been translated to U.S. dollars based on quoted exchange rates
    - Short-term investments are reported at cost or amortized cost, which approximates fair value
    - Real estate investment fair values are determined by management based on net asset values provided by general partners as reflected in the related partnerships' December 31, 2019 financial statements and recent estimates provided by the System's contract real estate advisors or independent appraisers. The methods and significant assumptions used result in a measure of fair value appropriate for financial statement measurement and disclosure purposes.
    - Private equity, real return and absolute return investment fair values were determined by management, in consultation with the general partner and valuation specialists, based on the net asset value per share (or its equivalent) of OCERS' ownership interest in partner's capital.
    - The fair values of diversified credit investments structured as partnerships are based on net asset value per share of the investment. The fair values for diversified credit investments comprised of mortgages, direct lending and energy-based credit funds are based on the general partner's estimates considering factors such as market quotes, earnings-multiple analysis or discounted cash flow analysis.

53. We agree with the work of appraisal specialists in evaluating the appraised value of real estate investment held by the System and have adequately considered the qualifications of the specialist in determining amounts and disclosures reflected in the financial statements and underlying accounting records. We did not give any instructions, nor cause any instructions to be given, to the specialists with respect to values or amount derived in an attempt to bias their work, and we are not aware of any matters that have affected the independence or objectivity.

54. With respect to the System's investment holdings:
    - There have been no material declines in fair value as of the financial statements date through the date of this letter.
    - All investment holdings, other than alternative and real estate investments, are considered to be marketable and the System has sufficient liquidity to pay obligations as they become due.

55. Premium pay has been properly reported to the System's actuary and reflected in the most recent actuarial valuation.

56. Actuarial data contained in the financial statements, relating to the defined benefit pension plan, was derived in accordance with the parameters set forth in GASB 67, and the actuarial methods and significant assumptions used to prepare the pension plan actuarial valuation report as of December 31, 2018, rolled forward to December 31, 2019, is consistent with Actuarial Standards of Practice and the provisions of GASB 67.

57. The discount rate used to measure the total pension liability of the participating employers of the defined benefit pension plan is equal to the plan's long-term expected rate of return and appropriate tests have been performed to determine that:
    - The defined benefit pension plan's fiduciary net position is projected (in conformity with GASB 67, paragraph 41-43) to be sufficient to make projected benefit payments (determined in conformity with GASB 67 paragraph 39), and
    - The defined benefit pension plan's assets are expected to be invested using a strategy to achieve that return.

58. The member census data provided to the System's third-party actuaries for the purpose of determining the total pension liability and other actuarially determined amounts in the financial statements is complete and accurate. Any inaccuracies in the member census data would not cause a material misstatement in the calculation of the total pension liability.

59. There were no known omissions of participant's census data used by the System's actuary for the purpose of determining the employer's total pension liability, net pension liability, actuarially determined contributions, and other actuarially determined amounts reflected in the financial statements for the defined benefit pension plan. In the event there were omissions, we believe such omissions do not materially impact the Systems' financial statements.

60. Management is aware that GASB Statement No. 82, *Pension Issues — an Amendment of GASB Statements No. 67, No. 68, and No. 73*, requires employer-paid member contributions

in the defined benefit pension plan be reported as member contributions if those amounts are included in salary expense. Due to system constraints, management is unable to determine whether employers that make contributions on behalf of members have reported such amounts as salary expense, and therefore all employer paid member contributions have been reported as member contributions. Management believes that any amounts currently reported as member contributions that should have been reported as employer contributions are not material to the basic financial statements.

61. For the defined benefit pension plan, we believe that the actuarial assumptions and methods used by the System's third-party actuary for purposes of financial reporting in accordance with generally accepted accounting principles are appropriate in the circumstances. We have no knowledge or belief that would make such assumptions or methods inappropriate in the circumstances. We did not give any, nor cause any, instructions to be given to the Systems' actuary with respect to values or amounts derived and we are not aware of any matters to have impacted the objectivity of the System's actuary.

62. The significant assumptions and other inputs used to measure the total pension and net pension liability of the cost-sharing multiple employer defined benefit pension plan have been properly disclosed in Note 9 to the basic financial statements.

63. We understand that the County of Orange (County) and Orange County Fire Authority (OCFA) accept responsibility for reporting their OPEB plans. OCERS maintains the 401(h) accounts for County and OCFA OPEB funds invested with OCERS, but OCERS does not have reporting responsibility under GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, for the OPEB plans.

64. With respect to the Other Supplementary Information:

    - We acknowledge our responsibility for presenting the Statement of Changes in Assets & Liabilities–OPEB Agency Fund, Schedule of Administrative Expenses, Schedule of Payments for Professional Services, and Schedule of Investment Expenses (the Schedules) in accordance with accounting principles generally accepted in the United States of America, and we believe the Schedules, including its form and content, is fairly presented in accordance with accounting principles generally accepted in the United States of America. The methods of measurement and presentation of the Schedules have not changed from those used in the prior period, and we have disclosed to you any significant assumptions or interpretations underlying the measurement and presentation of the supplementary information.

65. Management's discussion and analysis (MD&A) is based on facts, decisions, or conditions currently known to management and does not contain forecasts or other prospective information.

66. We have properly allocated certain assets, liabilities, and additions to the County and OCFA Health Care Funds in an accurate and systematic manner and believe the allocations to comply with the underlying participation and trust agreements and to be fairly presented in accordance with general accepted accounting principles.

67. We have accurately calculated and credited the investment earnings of the respective Health Care Funds for the County and the OCFA in a manner consistent with each of the respective agreements.

68. We have evaluated and classified any subsequent events as recognized or nonrecognized through the date of this letter. No events, including instances of noncompliance, have occurred subsequent to the balance sheet date and through the date of this letter that would require adjustment to or disclosure in the aforementioned financial statements, except for the following related to the COVID-19 pandemic:

    o In March 2020, the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, has adversely affected workforces, customers, economies, and financial markets globally, potentially leading to an economic downturn. On March 19, 2020, Governor Gavin Newsom issued a Stay at Home Order and OCERS has been diligently working to maintain normal operation remotely. There has been no significant disruption to the operation since the Stay at Home Order and OCERS' investment performance has been closely monitored. OCERS' investment strategy is to maintain a well-diversified portfolio in order to mitigate the risk of market uncertainty. The System is exposed to general and private market risk. In a pension plan context, this is the risk that the long-term rate of return earned on the pension plan assets could be below the actuarially assumed rate of return, which is 7.00%. Market risk could impact the financial condition of the System and the plan participant actuarial determined contributions. The System's actuarial valuations use a five year smoothing method for investment returns; any contribution rate impact from the capital markets depends in large measure on how deep the future market downturn is, how long it lasts, and how it fits within the fiscal year reporting periods. There has not been any significant decline in OCERS' investment portfolio. The fair value of the System's investments as of December 31, 2019 and March 31, 2020 (based on available information) were $16.9 billion and $15.5 billion, respectively. The fair value of the portfolio declined approximately -8.87% during the quarter ended March 31, 2020, (based on available information). Constructed to protect assets in down markets, the OCERS' investment portfolio ranked in the top 7% of peer U.S. pension plans and in the top 11% for the quarter and trailing one-year period ended March 31, 2020, respectively. OCERS' defensive positioning has propelled the System to a top quartile ranking amongst other U.S. pensions for the trailing three- and five-year periods ended March 31, 2020. Subsequent to March 31, 2020 and through the date of issurance, the global markets have recouped approximately 50% of early 2020 losses and the OCERS' portfolio has responded accordingly.

69. We have inquired of the System's actuaries, legal counsel, investment personnel, and other individuals in the organization who have specialized knowledge relating to the amounts, disclosures and assertions in the financial statements. We made such inquiries as we considered appropriate to support the written representations contained in this letter.

Macias Gini & O'Connell LLP
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Steve Delaney, Chief Executive Officer

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Brenda Shott, Assistant CEO, Internal Operations

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Molly Murphy, CFA, Chief Investment Officer

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Tracy Bowman, Director of Finance

MGO Certified Public Accountants

Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed In Accordance With *Government Auditing Standards*

To the Board of Retirement of the
Orange County Employees Retirement System
Santa Ana, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Orange County Employees Retirement System (the System), California, as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the System's basic financial statements, and have issued our report thereon dated June 4, 2020. Our report contained emphasis-of-matter paragraphs that describes the System's implementation of Governmental Accounting Standards Board Statement No. 84, *Fiduciary Activities*, for the year ended December 31, 2019 and the net pension liability as of December 31, 2019.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the System's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Macias Gini & O'Connell LLP

Newport Beach, California
June 4, 2020

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Memorandum

DATE: June 4, 2020

TO: Members of the Board of Retirement

FROM: Brenda Shott, Assistant CEO, Finance and Internal Operations; Tracy Bowman, Director of Finance

SUBJECT: **GASB 68 VALUATION AND AUDIT REPORT**

Recommendations

Approve the following recommendations from the Audit Committee during a meeting held on June 6, 2019:

1. Approve OCERS' audited Schedule of Allocated Pension Amounts by Employer as of and for the Year Ended December 31, 2019.
2. Approve the Governmental Accounting Standards Board (GASB) Statement 68 Actuarial Valuation as of December 31, 2019 for distribution to employers.

Background/Discussion

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement No. 27*, requires employers to record their proportionate share of the total pension liability less the plan's fiduciary net position (i.e., net pension liability) on the face of their financial statements. A proportionate share of the total pension expense and collective deferred inflows of resources and deferred outflows of resources of the pension trust fund at OCERS will also be shown on the face of each employer's financial statements.

Net Pension Liability vs. Unfunded Actuarial Accrued Liability

The attached GASB 68 valuation is used for financial reporting purposes and was prepared by Segal Consulting. This report is *separate and distinct from the funding actuarial valuation*. The net pension liability (NPL) shown in Exhibit 2 of the GASB 68 valuation as of December 31, 2019 is $5.1 billion compared to the unfunded actuarial accrued liability (UAAL) of $5.9 billion in the funding actuarial valuation as of December 31, 2019. The differences between the NPL and the UAAL are a direct result of the different liability and asset values used in measuring these amounts. The primary differences can be attributed to NPL being calculated using the Plan's current market value of assets, including the proceeds available in the County Investment Account, and the UAAL is calculated by adjusting the market value of assets for asset smoothing per OCERS Actuarial Funding Policy and excluding the County Investment Account reserves. Differences are also created by timing differences of when actuarial gains and losses are recognized in the liability calculation for financial reporting purposes compared to funding valuation purposes.

Schedule of Allocated Pension Amounts by Employer

The attached Schedule of Allocated Pension Amounts by Employer as of and for the Year Ended December 31, 2019 and related notes were audited by OCERS' independent auditor, Macias Gini & O'Connell LLP (MGO).

The proportionate share allocation is based on rate groups. All rate groups, with the exception of rate groups 1 and 2, have only one active employer, so all of the NPL for those rate groups is allocated to that employer. For rate groups 1 and 2, the NPL is allocated based on the actual employer contributions within the rate group

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Memorandum

and excludes employers with inactive membership. If an employer participates in several rate groups, the employer's total proportionate share of the NPL is the sum of its allocated NPL from each rate group.

The audit report and GASB 68 valuation, once approved by the Audit Committee and Board of Retirement, will be made available to participating employers with the following disclaimer:

> *To complete its financial statements, each participating employer will need to record its own proportionate share of collective pension amounts for all benefits provided through OCERS'cost-sharing multiple-employer defined benefit pension plan. OCERS has provided a schedule of pension amounts by employer, prepared by independent actuary Segal Consulting, in accordance with the methodology set forth in GASB 68, based on data maintained and provided by OCERS. This schedule has been audited by independent auditor, MGO. Please note that OCERS is not responsible for employers' compliance with the requirements of GASB 68. Employers are solely responsible for accurately presenting their financial statements within the requirements of GASB 68.*

Submitted by:	**Approved by:**
Tracy Bowman	Brenda Shott
Director of Finance	Asst. CEO, Finance & Internal Operations

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ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

GASB 68 Valuation and Audit Report

Presented on June 15, 2020

by

Brenda Shott and Tracy Bowman

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Recommendation

Approve the following recommendations from the Audit Committee during a meeting held on June 4, 2020:

1. Approve OCERS' audited Schedule of Allocated Pension Amounts by Employer as of and for the Year Ended December 31, 2019
2. Approve the Governmental Accounting Standards Board (GASB) Statement 68 Actuarial Valuation as of December 31, 2019 for distribution to employers

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Overview

- This information is needed by Employers for their annual financial reporting.
- **Reports are prepared for GASB reporting purposes only - there are no actionable decisions to be made on content.**
- This item is brought before you because the Audit Committee Charter requires approval of all audit reports.

"We provide secure retirement and disability benefits with the highest standards of excellence."

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Audit Report on GASB 68 Schedules

- Using the NPL calculated for GASB 67, Segal prepares the Schedule of Allocated Pension Amounts by Employer (included in Appendix B of the full GASB 68 valuation - Section 3)
- MGO audits this schedule which includes amounts and information required for GASB 68 reporting for each employer
- MGO has issued a "clean opinion" on the 2019 schedule and related notes which will allow our Employers' auditors to rely on MGO's work, avoiding multiple audits of OCERS' information.

"We provide secure retirement and disability benefits with the highest standards of excellence."

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Conclusion

Questions?

"We provide secure retirement and disability benefits with the highest standards of excellence."

Orange County Employees Retirement System (OCERS)

Governmental Accounting Standards Board Statement 68 (GASB 68) Actuarial Valuation

Actuarial Valuation Based on December 31, 2019 Measurement Date for Employer Reporting as of June 30, 2020

Segal

Segal

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

June 4, 2020

Board of Retirement
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statement 68 Actuarial Valuation based on December 31, 2019 measurement date for employer reporting as of June 30, 2020. It contains various information that will need to be disclosed in order for OCERS employers to comply with GASB Statement 68.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist Orange County Employees Retirement System (OCERS) in preparing items related to the pension plan in their financial report. The census and financial information on which our calculations were based were prepared by OCERS. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

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

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

Sincerely,

Segal

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

JY/jl

Table of Contents

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board (GASB) Statement 68 for employer reporting as of June 30, 2020. The results used in preparing this GASB 68 report are comparable to those used in preparing the Governmental Accounting Standards Board (GASB) Statement 67 report for the plan based on a reporting date and a measurement date as of December 31, 2019. This valuation is based on:

- The benefit provisions of OCERS, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of December 31, 2018, provided by OCERS;
- The assets of the Plan as of December 31, 2019, provided by OCERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2019 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2019 valuation.

General observations on GASB 68 actuarial valuation

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

Section 1: Actuarial Valuation Summary

4. For this report, the reporting dates for the employers are June 30, 2020 and 2019. The NPL's measured as of December 31, 2019 and 2018 have been determined by rolling forward the TPL as of December 31, 2018 and 2017, respectively. The Plan's Fiduciary Net Positions were valued as of the measurement dates. In addition, any changes in actuarial assumptions or plan provisions that occurred between the valuation date and the measurement date have been reflected.

Highlights of the valuation

1. The NPL decreased from $6,197.2 million as of December 31, 2018 to $5,075.7 million as of December 31, 2019 primarily as a result a 14.79%[1] return on the market value of assets during 2019 that was higher than the assumed return of 7.00% of approximately $1,171 million. The decrease in the total employer Pension Expense from $783.7 million calculated last year to $590.7 million calculated this year was mainly due to this investment gain. Changes in these values during the last two fiscal years ending December 31, 2019 and December 31, 2018 can be found in *Section 2, Schedule of changes in Net Pension Liability* on page 17.
2. The discount rate used to determine the TPL and NPL as of both December 31, 2019 and 2018 was 7.00% following the same assumption used by the System in the pension funding valuations as of the same dates. The detailed calculation of the discount rate of 7.00% used in the calculation of the TPL and NPL as of December 31, 2019 can be found in *Section 3, Appendix A*. Various other information that is required to be disclosed can be found throughout *Section 2*.
3. The Plan's Fiduciary Net Position of $14,481,680,000 as of December 31, 2018 is equal to the final market value of assets in the Pension Trust Fund as of December 31, 2018. This differs from the $14,349,790,000 market value of assets used in our December 31, 2018 funding valuation because the funding valuation excludes $131,890,000 in the County Investment Account. (The balance of the O.C. Sanitation District Deferred Account as of December 31, 2018 was $0 after a transfer of $14,589,000 to offset a portion of the District's UAAL as of December 31, 2018.)

   The Plan's Fiduciary Net Position of $16,678,581,000 as of December 31, 2019 is equal to the final market value of assets in the Pension Trust Fund as of December 31, 2019. This differs from the $16,516,108,000 market value of assets used in our December 31, 2019 funding valuation because the funding valuation excludes $150,416,000 in the County Investment Account and $12,057,000 in O.C. Sanitation District UAAL Deferred Account (after transfer of $18,631,000 to offset the District's entire UAAL as of December 31, 2019).

[1] As documented in the funding valuation report, return on market value was calculated using a modified dollar-weighted approach based on pension plan assets net of accounting liabilities. Actual investment gain on net pension plan assets was $2,123,258,000 during 2019 after including both the administrative expenses and discount for prepaid contributions while excluding the gains credited to County Investment Account and O.C. Sanitation District UAAL Deferred Account. Without these adjustments, the actual investment gain was $2,183,808,000.

Section 1: Actuarial Valuation Summary

4. In Appendix B, we show the Schedule of Pension Amounts by Employer. The expanded information shown in Appendix B has been used to prepare the Schedules that show the Pension Expense as well as the Deferred Outflows of Resources and Deferred Inflows of Resources.
5. Results shown in this report exclude any employer contributions made after the measurement date of December 31, 2019. Employers should consult with their auditors to determine the deferred outflow that should be created for these contributions.
6. All Rate Groups except Rate Groups #1 and #2 only have one active employer, so all of the NPL for those Rate Groups is allocated to that employer.

   For Rate Groups #1[2] and #2, the NPL is allocated based on the actual employer contributions within the Rate Group. The steps we used are as follows:

   - Calculate ratio of employer's contributions to the total contributions for the Rate Group.
   - Multiply this ratio by the NPL for the Rate Group to determine the employer's proportionate share of the NPL for the Rate Group.

   If the employer is in several Rate Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Rate Group. Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers. The NPL allocation can be found in the Schedule of Determination of Proportionate Share in Section 2.
7. The Coronavirus (COVID-19) pandemic is rapidly evolving and is having a significant impact on the US economy in 2020, including most retirement 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 December 31, 2019
   - Changes in interest rates since December 31, 2019
   - Short-term or long-term impacts on mortality of the covered population
   - The potential for federal or state fiscal relief

   Each of the above factors could significantly impact these results. The above factors generally will not have an impact on the December 31, 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.

[2] The NPL for Rate Group #1 was adjusted by the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I. prior to allocating the net NPL to the other employers in Rate Group #1 as the NPLs for these four employers were calculated separately.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Reporting Date for Employer under GASB 68[1]		June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Disclosure elements for fiscal year ending December 31:	• Service cost[2]	$499,255,591	$491,372,822
	• Total Pension Liability	21,754,263,463	20,678,882,089
	• Plan's Fiduciary Net Position	16,678,581,000	14,481,680,000
	• Net Pension Liability	5,075,682,463	6,197,202,089
	• Pension expense	590,748,219	783,713,497
Schedule of contributions For plan year ending December 31:	• Actuarially determined contributions[3]	$583,057,000	$556,728,000[4]
	• Actual contributions[3]	653,793,000	580,905,000[4]
	• Contribution deficiency / (excess)[5]	(70,736,000)	(24,177,000)
Demographic data for plan year ending December 31:	• Number of retired members and beneficiaries	18,420	17,674
	• Number of inactive vested members	6,520	6,026
	• Number of active members	22,257	21,929
Key assumptions as of December 31:	• Investment rate of return	7.00%	7.00%
	• Inflation rate	2.75%	2.75%
	• Projected salary increases[6]	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%

[1] The reporting date and measurement date for the plan are December 31, 2019 and December 31, 2018.
[2] The service cost is based on the previous year's valuation, meaning the 2019 and 2018 measurement date values are based on the valuations as of December 31, 2018 and December 31, 2017, respectively. Both service costs have been calculated using the assumptions shown in the December 31, 2018 measurement date column, as there had been no changes in the actuarial assumptions between the December 31, 2017 and December 31, 2018 valuations.
[3] Reduced by discount for prepaid contributions and transfer from County Investment Account, if any.
[4] Exclude transfer of $14,589,000 from O.C. Sanitation District Deferred UAAL Account required to offset UAAL increase.
[5] Includes additional contributions made by employers toward the reduction of their UAAL. Details are shown in Schedule of Contributions on page 20.
[6] For measurement dates December 31, 2019 and December 31, 2018, includes inflation at 2.75% plus real across-the-board salary increases of 0.50% plus merit and promotion increases.

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

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

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

Plan of Benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan 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 OCERS. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	This valuation is based on the market value of assets as of the measurement date, as provided by OCERS.
Actuarial Assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return based on a yield or index rate of 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). 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.

Section 1: Actuarial Valuation Summary

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

The valuation is prepared at the request of 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 OCERS 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 OCERS, it is not a fiduciary in its capacity as actuaries and consultants with respect to OCERS.

Section 2: GASB 68 Information

General information about the pension plan

Plan Description

Plan administration. The Orange County Employees Retirement System (OCERS) was established by the County of Orange in 1945. OCERS is administered by the Board of Retirement and governed by the County Employees' Retirement Law of 1937 (California Government Code Section 31450 et. seq.). OCERS is a cost-sharing multiple employer public employee retirement system whose main function is to provide service retirement, disability, death and survivor benefits to the Safety and General members employed by the County of Orange. OCERS also provides retirement benefits to the employee members of the Orange County Courts, the Orange County Retirement System, two cities and thirteen special districts.

The management of OCERS is vested with the Orange County Board of Retirement. The Board consists of nine members and one alternate. The County Treasurer is a member of the Board of Retirement by law. Four members are appointed by the Board of Supervisors, one of whom may be a County Supervisor. Two members are elected by the General membership; one member and one alternate are elected by the Safety membership, one member is elected by the retired members of the System. All members of the Board of Retirement serve terms of three years except for the County Treasurer whose term runs concurrent with the County Treasurer term.

Plan membership. At December 31, 2019, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	18,420
Inactive vested members entitled to but not yet receiving benefits	6,520
Active members	22,257
Total	**47,197**

Note: Data as of December 31, 2019 is not used in the measurement of the TPL as of December 31, 2019.

Section 2: GASB 68 Information

Benefits provided. OCERS provides service retirement, disability, death and survivor benefits to eligible employees. All regular full-time employees of the County of Orange or contracting agencies who work a minimum of 20 hours per week become members of OCERS effective on the first day of employment in an eligible position. There are separate retirement plans for General and Safety member employees. Safety membership is extended to those involved in active law enforcement, fire suppression, and certain probation officers. Any new Safety member who becomes a member on or after January 1, 2013 is designated PEPRA Safety and is subject to the provisions of California Public Employees' Pension Reform Act of 2013 (PEPRA), California Government Code 7522 et seq. All other employees are classified as General members. New General members employed on or after January 1, 2013 are designated as PEPRA General subject to the provisions of California Government Code 7522 et. seq.

General members hired prior to January 1, 2013, including all members of Plan T and Plan W hired on or after January 1, 2013, are eligible to retire once they attain the age of 50 and have acquired ten or more years of retirement service credit. A member with thirty years of service is eligible to retire regardless of age. General members who are first hired on or after January 1, 2013, excluding members of Plan T and Plan W, are eligible to retire once they have attained the age of 52, and have acquired five years of retirement service credit.

Safety members hired prior to January 1, 2013, are eligible to retire once they attain the age of 50 and have acquired ten or more years of retirement service credit. A member with twenty years of service is eligible to retire regardless of age. Safety members who are first hired on or after January 1, 2013, are eligible to retire once they have attained the age of 50, and have acquired five years of retirement service credit.

All General and Safety members can also retire at the age of 70 regardless of service.

The retirement benefit the member will receive is based upon age at retirement, final average compensation, years of retirement service credit and retirement plan and tier.

General member benefits are calculated pursuant to the provisions of Sections 31676.01, 31676.1, 31676.12, 31676.16, 31676.18 or 31676.19. For Section 31676.01, the monthly allowance is equal to 1/90th of final compensation times years of accrued retirement service credit times age factor from that Section. For Section 31676.1, the monthly allowance is equal to 1/60th of final compensation times years of accrued retirement service credit times age factor from that Section. For Sections 31676.12, 31676.16, 31676.18 or 31676.19, the monthly allowance is equal to 1/50th of final compensation times years of accrued retirement service credit times age factor from the corresponding Section. General member benefits for those who are first hired on or after January 1, 2013, excluding members of Plan T and Plan W, are calculated pursuant to the provision of California Government Code Section 7522.20(a). The monthly allowance is equal to the final compensation multiplied by years of accrued retirement credit multiplied by the age factor from Section 7522.20(a).

Safety member benefits are calculated pursuant to the provisions of California Government Code Sections 31664.1 and 31664.2. The monthly allowance is equal to 3% of final compensation times years of accrued retirement service credit times age factor from the corresponding Section. Safety member benefits for those who are first hired on or after January 1, 2013, are calculated pursuant to the provision of California Government Code Section 7522.25(d). The monthly allowance is equal to the final compensation multiplied by years of accrued retirement credit multiplied by the age factor from Section 7522.25(d).

Section 2: GASB 68 Information

For members with membership dates before January 1, 2013, including all members of Plan T and Plan W hired on or after January 1, 2013, the maximum monthly retirement allowance is 100% of final compensation. There is no maximum for members with membership dates on or after January 1, 2013, excluding members of Plan T and Plan W.

Final average compensation consists of the highest 12 consecutive months for a General Tier 1 or Safety Tier 1 member and the highest 36 consecutive months for a General Tier 2, General PEPRA, Safety Tier 2 or Safety PEPRA member.

The member may elect an unmodified retirement allowance, or choose an optional retirement allowance. The unmodified retirement allowance provides the highest monthly benefit and a 60% continuance to an eligible surviving spouse or domestic partner. An eligible surviving spouse or domestic partner is one married to or registered with the member one year prior to the effective retirement date. Certain surviving spouses or domestic partners may also be eligible if marriage or domestic partnership was at least two years prior to the date of death and the surviving spouse or domestic partner has attained age 55. There are four optional retirement allowances the member may choose. Each of the optional retirement allowances requires a reduction in the unmodified retirement allowance in order to allow the member the ability to provide certain benefits to a surviving spouse, domestic partner, or named beneficiary having an insurable interest in the life of the member.

OCERS provides an annual cost-of-living benefit to all retirees. The cost-of-living adjustment, based upon the Consumer Price Index for All Urban Consumers for the Los Angeles-Long Beach-Anaheim Area, is capped at 3.0%.

The County of Orange and contracting agencies contribute to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Retirement. Employer contribution rates are adopted annually based upon recommendations received from OCERS' actuary after the completion of the annual actuarial valuation. The average employer contribution rate for the first six months of calendar year 2019 or the second half of fiscal year 2018-2019 (based on the December 31, 2016 valuation) was 36.56%[1] of compensation. The average employer contribution rate for the last six months of calendar year 2019 or the first half of fiscal year 2019-2020 (based on the December 31, 2017 valuation) was 37.97%[1] of compensation.

All members are required to make contributions to OCERS regardless of the retirement plan or tier in which they are included. The average member contribution rate for the first six months of calendar year 2019 or the second half of fiscal year 2018-2019 (based on the December 31, 2016 valuation) was 12.01%[2] of compensation. The average member contribution rate for the last six months of calendar year 2019 or the first half of fiscal year 2019-2020 (based on the December 31, 2017 valuation) was 12.63%[2] of compensation.

1 These employer contribution rates may be higher or lower than the composite rate for 2019 as shown on page 18 of this report because these rates have not been adjusted to reflect any pick-ups or reverse pick-ups. These employer contribution rates also do not reflect the shift in payroll to the lower cost plans from the valuation date to the date of rate implementation.

2 It should be noted that these member contribution rates provided above have not been adjusted to reflect any pick-ups or reverse pick-ups.

Section 2: GASB 68 Information

Net Pension Liability

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of the Net Pension Liability		
Total Pension Liability	$21,754,263,463	$20,678,882,089
Plan's Fiduciary Net Position	(16,678,581,000)	(14,481,680,000)
Net Pension Liability	$5,075,682,463	$6,197,202,089
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	76.67%	70.03%

The Net Pension Liability (NPL) was measured as of December 31, 2019 and 2018. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date while the Total Pension Liability (TPL) was determined based upon rolling forward the TPL from actuarial valuations as of December 31, 2018 and 2017, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of December 31, 2019 and 2018 are the same as those used in the OCERS actuarial valuations as of December 31, 2019 and 2018, respectively.

Actuarial assumptions. The TPLs as of December 31, 2019 and 2018 were determined by actuarial valuations as of December 31, 2018 and 2017, respectively. The actuarial assumptions used were based on the results of an experience study for the period from January 1, 2014 through December 31, 2016 and they are the same assumptions used in the December 31, 2019 and 2018 funding valuations for OCERS. In particular, the following actuarial assumptions were applied to all periods included in the measurements:

Inflation	2.75%
Salary Increases	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%, vary by service, including inflation
Investment Rate of Return	7.00%, net of pension plan investment expense, including inflation
Other Assumptions	See analysis of actuarial experience during the period January 1, 2014 through December 31, 2016

Section 2: GASB 68 Information

Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments[1] was determined in 2017 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 investment expenses are shown in the following table. This information was used in the derivation of the long-term expected investment rate of return assumption for the December 31, 2019 and 2018 actuarial valuations. This information will change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
Global Equity	35.0%	6.38%
Core Bonds	13.0%	1.03%
High Yield Bonds	4.0%	3.52%
Bank Loan	2.0%	2.86%
TIPS	4.0%	0.96%
Emerging Market Debt	4.0%	3.78%
Real Estate	10.0%	4.33%
Core Infrastructure	2.0%	5.48%
Natural Resources	10.0%	7.86%
Risk Mitigation	5.0%	4.66%
Mezzanine/Distressed Debts	3.0%	6.53%
Private Equity	8.0%	9.48%
Total	**100.00%**	

[1] Note that the investment return assumption for funding purposes is developed net of both investment and administrative expenses; however, the same investment return assumption is used for financial reporting purposes, where it is considered gross of administrative expenses.

Section 2: GASB 68 Information

Discount rate. The discount rate used to measure the TPL was 7.00% as of December 31, 2019 and 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 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 Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both December 31, 2019 and 2018.

Section 2: GASB 68 Information

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL as of December 31, 2019, calculated using the discount rate of 7.00%, as well as what the NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Orange County	$6,456,264,720	$4,124,212,240	$2,227,308,689
O.C. Cemetery District	1,360,254	(228,119)	(1,520,109)
O.C. Law Library	1,563,992	(74,515)	(1,407,285)
O.C. Vector Control District	3,315,913	(625,500)	(3,831,466)
O.C. Retirement System	41,265,624	26,824,264	15,077,587
O.C. Fire Authority	664,737,575	354,395,457	101,961,573
Cypress Recreation and Parks	1,631,167	262,415	(850,935)
Department of Education	4,877,710	3,099,339	1,652,803
Transportation Corridor Agency	5,792,435	(1,753,164)	(7,890,793)
City of San Juan Capistrano	40,292,922	26,191,970	14,722,183
O.C. Sanitation District	58,125,867	(49,446,617)	(136,946,632)
O.C. Transportation Authority	370,129,397	224,284,548	105,653,594
U.C.I.	45,586,926	30,213,739	17,709,109
O.C. Children and Families Comm.	(34,892)	(646,472)	(1,143,934)
Local Agency Formation Comm.	2,291,619	1,489,642	837,309
Rancho Santa Margarita	4,604	(2,214)	(7,760)
O.C. Superior Court	518,070,697	336,766,149	189,292,092
O.C. IHSS Public Authority	1,466,876	719,301	111,220
Total for all Employers	**$8,216,743,406**	**$5,075,682,463**	**$2,520,727,245**

Section 2: GASB 68 Information

Schedule of changes in Net Pension Liability — Last two plan years

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Total Pension Liability		
• Service cost	$499,255,591	$491,372,822
• Interest	1,452,644,872	1,379,917,267
• Change of benefit terms	0	0
• Differences between expected and actual experience	24,382,911	(118,124,401)
• Changes of assumptions	0	0
• Benefit payments, including refunds of member contributions	(900,902,000)	(828,278,000)
• Transfer of members among Rate Groups	0	0
• Other	0	0
Net change in Total Pension Liability	**$1,075,381,374**	**$924,887,688**
Total Pension Liability – beginning	**20,678,882,089**	**19,753,994,401**
Total Pension Liability – ending	**$21,754,263,463**	**$20,678,882,089**
Plan's Fiduciary Net Position		
• Contributions – employer[1]	$653,793,000	$580,905,000[2(2)]
• Contributions – member	279,373,000	270,070,000
• Net investment income	2,183,808,000	(324,628,000)
• Benefit payments, including refunds of member contributions	(900,902,000)	(828,278,000)
• Transfer of members among Rate Groups	0	0
• Administrative expense	(19,171,000)	(18,284,000)
• Other	0	0
Net change in Plan's Fiduciary Net Position	**$2,196,901,000**	**$(320,215,000)**
Plan's Fiduciary Net Position – beginning	**14,481,680,000**	**14,801,895,000**
Plan's Fiduciary Net Position – ending	**$16,678,581,000**	**$14,481,680,000**
Net Pension Liability – ending	**$5,075,682,463**	**$6,197,202,089**
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	**76.67%**	**70.03%**
Covered payroll[3]	**$1,783,054,000**	**$1,718,798,000**
Plan Net Pension Liability as percentage of covered payroll	**284.66%**	**360.55%**

[1] Reduced by discount for prepaid contributions and transfer from County Investment Account, if any
[2] $14,589,000 transfer from O.C. Sanitation District Deferred UAAL Account required to offset UAAL increase for the actuarial losses as of December 31, 2018 has been excluded from this amount.
[3] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of employer contributions — Last ten fiscal years

Year Ended December 31	Actuarially Determined Contributions[1,2]	Contributions in Relation to the Actuarially Determined Contributions[1,2]	Contribution Deficiency / (Excess)	Covered Payroll[3]	Contributions as a Percentage of Covered Payroll[1,2]
2010	$372,437,000	$372,437,000	$0	$1,511,569,000	24.64%
2011	387,585,000	387,585,000	0	1,498,914,000	25.86%
2012	406,521,000	406,521,000	0	1,497,475,000	27.15%
2013	426,020,000	427,095,000[4]	(1,075,000)	1,494,745,000	28.57%
2014	476,320,000	625,520,000[5]	(149,200,000)	1,513,206,000	41.34%
2015	502,886,000	571,298,000[6]	(68,412,000)	1,521,036,000	37.56%
2016	521,447,000	567,196,000[7]	(45,749,000)	1,602,675,000	35.40%
2017	536,726,000[8]	572,104,000[8,9]	(35,378,000)	1,678,322,000	34.09%
2018	556,728,000[10]	580,905,000[10,11]	(24,177,000)	1,718,798,000	33.80%
2019	583,057,000	653,793,000[12]	(70,736,000)	1,783,054,000	36.67%

1 Reduced by transfers from County Investment Account (funded by pension obligation proceeds held by OCERS). Those transfers are as follows:

Plan Year Ended December 31	Transfers from County Investment Account	Plan Year Ended December 31	Transfers from County Investment Account
2010	$11,000,000	2015	$0
2011	11,000,000	2016	0
2012	5,500,000	2017	0
2013	5,000,000	2018	0
2014	5,000,000	2019	0

2 Reduced by discount for prepaid contributions.
3 Covered payroll represents payroll on which contributions to the pension plan are based.
4 Includes additional contributions of $1,075,000 made by O.C. Fire Authority towards the reduction of their UAAL.
5 Includes additional contributions of $1,663,000 made by O.C. Cemetery District, $22,537,000 made by O.C. Fire Authority and $125,000,000 made by O.C. Sanitation District towards the reduction of their UAAL.
6 Includes additional contributions of $18,412,000 made by O.C. Fire Authority and $50,000,000 made by O.C. Sanitation District towards the reduction of their UAAL.
7 Includes additional contributions of $5,133,000 made by O.C. Fire Authority, $1,500,000 made by Law Library and $5,587,000 made by O.C. Sanitation District towards the reduction of their UAAL as well as $33,529,000 made by O.C. Sanitation District to their UAAL Deferred Account.
8 $24,042,000 transfer from O.C. Sanitation District Deferred UAAL Account required to offset UAAL increase for the assumption changes has been excluded from both these amounts.
9 Includes additional contributions of $32,096,000 made by O.C. Fire Authority, $1,538,000 made by Law Library and $1,744,000 made by O.C. Children and Families Commission towards the reduction of their UAAL.
10 $14,589,000 transfer from O.C. Sanitation District Deferred UAAL Account required to offset UAAL increase for the actuarial losses as of December 31, 2018 has been excluded from both these amounts.
11 Includes additional contributions of $23,437,000 made by O.C. Fire Authority and $740,000 made by Cypress Recreation and Parks District towards the reduction of their UAAL.
12 Includes additional contributions of $19,043,000 made by O.C. Fire Authority, $878,000 made by O.C. Vector Control, $12,815,000 Transportation Corridor and $8,116,000 made by O.C. Sanitation District towards the reduction of their UAAL as well as $29,884,000 made by O.C. Sanitation District to their UAAL Deferred Account.

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Notes to Schedule:

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

Valuation Date:	Actuarially determined contribution rates for the first six months of calendar year 2019 or the second half of fiscal year 2018-2019 are calculated based on the December 31, 2016 valuation. Actuarially determined contribution rates for the last six months of calendar year 2019 or the first half of fiscal year 2019-2020 are calculated based on the December 31, 2017 valuation.
Actuarial Cost Method:	Entry Age Actuarial Cost Method
Amortization Method	Level percent of payroll for total unfunded actuarial accrued liability
Remaining Amortization Period:	Effective December 31, 2013, the outstanding balance of the UAAL from the December 31, 2012 valuation was combined and re-amortized over a declining 20-year period. Any changes in UAAL due to actuarial gains or losses or due to changes in assumptions or methods will be amortized over separate 20-year periods. Any changes in UAAL due to plan amendments will be amortized over separate 15-year periods and any change in UAAL due to early retirement incentive programs will be amortized over a separate period of up to 5 years.
Asset Valuation Method:	The Actuarial Value of Assets is determined by recognizing any difference between the actual and the expected market return over a five-year period. The Valuation Value of Assets is the Actuarial Value of Assets reduced by the value of the non-valuation reserves.

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Actuarial assumptions

Valuation Date	December 31, 2016 valuation	December 31, 2017 Valuation
Investment rate of return:	7.25%, net of pension plan investment expense, including inflation	7.00%, net of pension plan investment expense, including inflation
Inflation rate:	3.00%	2.75%
Real across-the-board salary increase:	0.50%	0.50%
Projected salary increases:	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%, vary by service, including inflation	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%, vary by service, including inflation
Cost of living adjustments:	3.00% of retirement income	2.75% of retirement income
Other assumptions:	Same as those used in the December 31, 2016 funding actuarial valuation	Same as those used in the December 31, 2017 funding actuarial valuation

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Determination of proportionate share

Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2018 to December 31, 2018

	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$13,361,000	98.591%	$252,306,000	87.908%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	2,187,000	0.762%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	2,437,000	0.849%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	7,728,000	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	185,000	0.064%	0	0.000%
Local Agency Formation Comm.	0	0.000%	120,000	0.042%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	29,779,000	10.375%	0	0.000%
O.C. IHSS Public Authority	191,000	1.409%	0	0.000%	0	0.000%
Total for all Employers	**$13,552,000**	**100.000%**	**$287,014,000**	**100.000%**	**$7,728,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2018 to December 31, 2018

	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	1,641,000	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	24,725,000	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$0**	**100.000%**	**$24,725,000**	**100.000%**	**$1,641,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2018 to December 31, 2018

	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	171,000	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	169,000	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	8,206,000	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$8,206,000**	**100.000%**	**$171,000**	**100.000%**	**$169,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2018 to December 31, 2018

	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$28,033,000	100.000%	$143,462,000	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	59,905,000	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$28,033,000**	**100.000%**	**$143,462,000**	**100.000%**	**$59,905,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2018 to December 31, 2018

	Total Contributions[1]	Total Percentage
Orange County	$437,162,000	76.079%
O.C. Cemetery District	171,000	0.030%
O.C. Law Library	169,000	0.029%
O.C. Vector Control District	0	0.000%
O.C. Retirement System	2,187,000	0.381%
O.C. Fire Authority	68,111,000	11.854%
Cypress Recreation and Parks	0	0.000%
Department of Education	0	0.000%
Transportation Corridor Agency	1,641,000	0.286%
City of San Juan Capistrano	2,437,000	0.424%
O.C. Sanitation District	7,728,000	1.345%
O.C. Transportation Authority	24,725,000	4.303%
U.C.I.	0	0.000%
O.C. Children and Families Comm.	185,000	0.032%
Local Agency Formation Comm.	120,000	0.021%
Rancho Santa Margarita	0	0.000%
O.C. Superior Court	29,779,000	5.183%
O.C. IHSS Public Authority	191,000	0.033%
Total for all Employers	**$574,606,000**	**100.000%**

Note: Results may not total due to rounding.

[1] Excludes additional contributions of $23,437,000 made by O.C. Fire Authority towards the reduction of their UAALs, combined contributions of $3,916,000 made by Cypress Recreation and Parks, Department of Education and U.C.I. and combined employer pick-up contributions of $164,000.

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Allocation of December 31, 2018 Net Pension Liability

	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$71,865,137	62.935%	$3,246,653,910	87.685%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District[1]	2,492,695	2.183%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	28,844,760	0.779%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks[1]	408,781	0.358%	0	0.000%	0	0.000%
Department of Education[1]	3,517,372	3.080%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	32,142,058	0.868%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	29,029,145	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.[1]	34,808,679	30.483%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	630,610	0.017%	0	0.000%
Local Agency Formation Comm.	0	0.000%	1,582,703	0.043%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	392,760,910	10.608%	0	0.000%
O.C. IHSS Public Authority	1,097,009	0.961%	0	0.000%	0	0.000%
Total for all Employers	**$114,189,673**	**100.000%**	**$3,702,614,951**	**100.000%**	**$29,029,145**	**100.000%**

Note: Results may not total due to rounding.

[1] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2017 to December 31, 2018 for the actual contributions, benefit payments and return on their VVAs during 2018. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2018. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2017).

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Allocation of December 31, 2018 Net Pension Liability

	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	13,253,632	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	269,788,642	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	1,284	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$1,284**	**100.000%**	**$269,788,642**	**100.000%**	**$13,253,632**	**100.000%**

Note: Results may not total due to rounding.

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Allocation of December 31, 2018 Net Pension Liability

	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	962,119	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	573,252	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	55,836,641	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$55,836,641**	**100.000%**	**$962,119**	**100.000%**	**$573,252**	**100.000%**

Note: Results may not total due to rounding.

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Allocation of December 31, 2018 Net Pension Liability

	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$289,061,877	100.000%	$1,310,995,988	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	410,894,885	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$289,061,877**	**100.000%**	**$1,310,995,988**	**100.000%**	**$410,894,885**	**100.000%**

Note: Results may not total due to rounding.

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Allocation of December 31, 2018 Net Pension Liability

	Total NPL	Total Percentage
Orange County	$4,918,576,912	79.367%
O.C. Cemetery District	962,119	0.016%
O.C. Law Library	573,252	0.009%
O.C. Vector Control District[2]	2,492,695	0.040%
O.C. Retirement System	28,844,760	0.465%
O.C. Fire Authority	466,731,526	7.531%
Cypress Recreation and Parks[2]	408,781	0.007%
Department of Education[2]	3,517,372	0.057%
Transportation Corridor Agency	13,253,632	0.214%
City of San Juan Capistrano	32,142,058	0.519%
O.C. Sanitation District	29,029,145	0.468%
O.C. Transportation Authority	269,788,642	4.353%
U.C.I.[2]	34,808,679	0.562%
O.C. Children and Families Comm.	630,610	0.010%
Local Agency Formation Comm.	1,582,703	0.026%
Rancho Santa Margarita	1,284	0.000%
O.C. Superior Court	392,760,910	6.338%
O.C. IHSS Public Authority	1,097,009	0.018%
Total for all Employers	**$6,197,202,089**	**100.000%**

Note: Results may not total due to rounding.

[2] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2017 to December 31, 2018 for the actual contributions, benefit payments and return on their VVAs during 2018. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2018. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2017).

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Notes regarding determination of proportionate share as of December 31, 2018 measurement date

1. Based on the January 1, 2018 through December 31, 2018 employer contributions as provided by OCERS. These contributions have been adjusted to exclude employer paid member contributions and they have not been reduced for discount due to prepaid contributions. (It should be noted that we would also have included transfers made from the County Investment Account had those transfers been made in 2018.)

2.
   a. The Net Pension Liability (NPL) for each Rate Group is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The TPL for each Rate Group is obtained from internal valuation results. The Plan's Fiduciary Net Position for each Rate Group is estimated by adjusting the Valuation Value of Assets (VVA) for each membership class by the ratio of the total OCERS Plan's Fiduciary Net Position (excluding the balance of the County Investment Account) to total OCERS VVA. As previously directed by OCERS, the County Investment Account is then allocated among the four County Rate Groups using the proportions of County POB contributions made during 2018. Again, as there were no such County POB contributions made during 2018, we have continued to apply the same proportions determined in 2014 for each of the four County Rate Groups to allocate the $131,890,000 in the County Investment Account as of December 31, 2018. These amounts are provided in item 3. The O.C. Sanitation District UAAL Deferred Account is allocated entirely to Rate Group #3 and the remaining balance of $14,589,000 in that account has been transferred at the end of the year to partially offset the actuarial losses (primarily from investment after smoothing) during 2018. The balance of the O.C. Sanitation District UAAL Deferred Account is $0 at the end of the year after the transfer.
   b. Each of General Rate Groups #3, #4, #5, #9, #10, #11 and #12 and Safety Rate Groups #6, #7 and #8 have only one active employer, so all of the NPL for that Rate Group is allocated to the corresponding employer.
   c. For General Rate Groups #1 and #2, the NPL is allocated based on the actual employer contributions within the General Rate Group.
      - The NPL for Rate Group #1 was adjusted by the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I. prior to allocating the net NPL to the other employers in Rate Group #1 as the NPLs for these four employers were calculated separately.

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- Calculate ratio of employer's contributions to the total contributions for the Rate Group. For this purpose, the employer contributions exclude the following amounts:
  1) Rate Group #1 (Department of Education): $301,000
  2) Rate Group #1 (U.C.I.): $2,875,000
  3) Rate Group #1 (Cypress Recreation and Parks): $740,000
- Multiply this ratio (unrounded) by the NPL for the Rate Group to determine the employer's proportionate share of the NPL for the Rate Group.
- The UAAL contributions referenced in (i), (ii) and (iii) above are adjusted with interest to December 31, 2018 and are used to reduce the NPL for the three employers as of December 31, 2018.

3. The percentages of contributions by employer are not exactly equal to the percentages we use to allocate the NPL by employer because the NPL for the County has been reduced to reflect the portion of the County Investment Account that has been allocated among the four County Rate Groups. The amounts of the County Investment Account that have been allocated to those Rate Groups are as follows:

Rate Group #1:	$4,873,766
Rate Group #2:	81,058,036
Rate Group #6:	8,424,297
Rate Group #7:	37,533,901
Total:	**$131,890,000**

   In addition, the NPL for Rate Group #2 was allocated prior to applying the adjusted balance of the $1,744,454 in additional UAAL contributions made by O.C. Children and Families Commission on November 15, 2017. That balance is equal to $1,809,390 as of December 31, 2018 when adjusted with interest for the entire year and UAAL contribution offset starting from July 1, 2018 to December 31, 2018. We would continue to maintain the outstanding balance of the additional UAAL contributions for use in determining the NPL for this employer.

4. If the employer is in several Rate Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Rate Group. Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2019 to December 31, 2019

	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$13,232,000	98.599%	$264,402,000	87.836%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	2,503,000	0.832%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	2,444,000	0.812%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	8,056,000	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	106,000	0.035%	0	0.000%
Local Agency Formation Comm.	0	0.000%	139,000	0.046%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	31,424,000	10.439%	0	0.000%
O.C. IHSS Public Authority	188,000	1.401%	0	0.000%	0	0.000%
Total for all Employers	**$13,420,000**	**100.000%**	**$301,018,000**	**100.000%**	**$8,056,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2019 to December 31, 2019

	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	1,248,000	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	26,415,000	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$0**	**100.000%**	**$26,415,000**	**100.000%**	**$1,248,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2019 to December 31, 2019

	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	187,000	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	118,000	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	8,578,000	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$8,578,000**	**100.000%**	**$187,000**	**100.000%**	**$118,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2019 to December 31, 2019

	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$30,025,000	100.000%	$151,060,000	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	61,888,000	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$30,025,000**	**100.000%**	**$151,060,000**	**100.000%**	**$61,888,000**	**100.000%**

Note: Results may not total due to rounding.

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Actual Contributions (Excluding Employer Paid Member Contributions and Not Reduced for Discount Due to Prepaid Contributions) by Employer and Rate Group

January 1, 2019 to December 31, 2019

	Total Contributions[3]	Total Percentage
Orange County	$458,719,000	76.197%
O.C. Cemetery District	187,000	0.031%
O.C. Law Library	118,000	0.020%
O.C. Vector Control District	0	0.000%
O.C. Retirement System	2,503,000	0.416%
O.C. Fire Authority	70,466,000	11.705%
Cypress Recreation and Parks	0	0.000%
Department of Education	0	0.000%
Transportation Corridor Agency	1,248,000	0.207%
City of San Juan Capistrano	2,444,000	0.406%
O.C. Sanitation District	8,056,000	1.338%
O.C. Transportation Authority	26,415,000	4.388%
U.C.I.	0	0.000%
O.C. Children and Families Comm.	106,000	0.018%
Local Agency Formation Comm.	139,000	0.023%
Rancho Santa Margarita	0	0.000%
O.C. Superior Court	31,424,000	5.220%
O.C. IHSS Public Authority	188,000	0.031%
Total for all Employers	**$602,013,000**	**100.000%**

Note: Results may not total due to rounding.

[3] Excludes combined additional contributions of $69,858,000 made by O.C. Fire Authority, Transportation Corridor Agency and O.C. Sanitation District towards the reduction of their UAALs, combined contributions of $3,934,000 made by O.C. Vector Control District, Department of Education and U.C.I. and combined employer pick-up contributions of $35,000.

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Allocation of December 31, 2019 Net Pension Liability

	Rate Group #1	Rate Group #1 Percentage	Rate Group #2	Rate Group #2 Percentage	Rate Group #3	Rate Group #3 Percentage
Orange County	$45,068,171	57.238%	$2,741,111,450	87.527%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District[4]	(625,500)	(0.794%)	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	26,824,264	0.857%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks[4]	262,415	0.333%	0	0.000%	0	0.000%
Department of Education[4]	3,099,339	3.936%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	26,191,970	0.836%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	(49,446,617)	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.[4]	30,213,739	38.373%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	(646,472)	(0.021%)	0	0.000%
Local Agency Formation Comm.	0	0.000%	1,489,642	0.048%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	336,766,149	10.753%	0	0.000%
O.C. IHSS Public Authority	719,301	0.914%	0	0.000%	0	0.000%
Total for all Employers	**$78,737,465**	**100.000%**	**$3,131,737,003**	**100.000%**	**$(49,446,617)**	**100.000%**

Note: Results may not total due to rounding.

[4] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2018 to December 31, 2019 for the actual contributions, benefit payments and return on their VVAs during 2019. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2019. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2018).

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Allocation of December 31, 2019 Net Pension Liability

	Rate Group #4	Rate Group #4 Percentage	Rate Group #5	Rate Group #5 Percentage	Rate Group #9	Rate Group #9 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	(1,753,164)	100.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	224,284,548	100.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	(2,214)	100.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$(2,214)**	**100.000%**	**$224,284,548**	**100.000%**	**$(1,753,164)**	**100.000%**

Note: Results may not total due to rounding.

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Allocation of December 31, 2019 Net Pension Liability

	Rate Group #10	Rate Group #10 Percentage	Rate Group #11	Rate Group #11 Percentage	Rate Group #12	Rate Group #12 Percentage
Orange County	$0	0.000%	$0	0.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	(228,119)	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	(74,515)	100.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	32,453,715	100.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$32,453,715**	**100.000%**	**$(228,119)**	**100.000%**	**$(74,515)**	**100.000%**

Note: Results may not total due to rounding.

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Allocation of December 31, 2019 Net Pension Liability

	Rate Group #6	Rate Group #6 Percentage	Rate Group #7	Rate Group #7 Percentage	Rate Group #8	Rate Group #8 Percentage
Orange County	$235,494,376	100.000%	$1,102,538,243	100.000%	$0	0.000%
O.C. Cemetery District	0	0.000%	0	0.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	0	0.000%
O.C. Vector Control District	0	0.000%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	0	0.000%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	321,941,742	100.000%
Cypress Recreation and Parks	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	**$235,494,376**	**100.000%**	**$1,102,538,243**	**100.000%**	**$321,941,742**	**100.000%**

Note: Results may not total due to rounding.

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Allocation of December 31, 2019 Net Pension Liability

	Total NPL	Total Percentage
Orange County	$4,124,212,240	81.254%
O.C. Cemetery District	(228,119)	(0.004%)
O.C. Law Library	(74,515)	(0.001%)
O.C. Vector Control District[5]	(625,500)	(0.012%)
O.C. Retirement System	26,824,264	0.529%
O.C. Fire Authority	354,395,457	6.982%
Cypress Recreation and Parks[5]	262,415	0.005%
Department of Education[5]	3,099,339	0.061%
Transportation Corridor Agency	(1,753,164)	(0.035%)
City of San Juan Capistrano	26,191,970	0.516%
O.C. Sanitation District	(49,446,617)	(0.974%)
O.C. Transportation Authority	224,284,548	4.419%
U.C.I.[5]	30,213,739	0.595%
O.C. Children and Families Comm.	(646,472)	(0.013%)
Local Agency Formation Comm.	1,489,642	0.029%
Rancho Santa Margarita	(2,214)	(0.000%)
O.C. Superior Court	336,766,149	6.635%
O.C. IHSS Public Authority	719,301	0.014%
Total for all Employers	**$5,075,682,463**	**100.000%**

Note: Results may not total due to rounding.

[5] In determining the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2018 to December 31, 2019 for the actual contributions, benefit payments and return on their VVAs during 2019. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2019. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2018).

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Notes regarding determination of proportionate share as of December 31, 2019 measurement date

5. Based on the January 1, 2019 through December 31, 2019 employer contributions as provided by OCERS. These contributions have been adjusted to exclude employer paid member contributions and they have not been reduced for discount due to prepaid contributions. (It should be noted that we would also have included transfers made from the County Investment Account had those transfers been made in 2019.)

6.
   a. The Net Pension Liability (NPL) for each Rate Group is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The TPL for each Rate Group is obtained from internal valuation results. The Plan's Fiduciary Net Position for each Rate Group is estimated by adjusting the Valuation Value of Assets (VVA) for each membership class by the ratio of the total OCERS Plan's Fiduciary Net Position (excluding the balance of the County Investment Account and the O.C. Sanitation District UAAL Deferred Account) to total OCERS VVA. As previously directed by OCERS, the County Investment Account is then allocated among the four County Rate Groups using the proportions of County POB contributions made during 2019. Again, as there were no such County POB contributions made during 2019, we have continued to apply the same proportions determined in 2014 for each of the four County Rate Groups to allocate the $150,416,000 in the County Investment Account as of December 31, 2019. These amounts are provided in item 3. The O.C. Sanitation District UAAL Deferred Account is allocated entirely to Rate Group #3 and the balance of that account has been reduced by from $30,688,000 to $12,057,000 at the end of the year to mitigate the additional UAAL due to actuarial losses (and that UAAL was measured on a VVA basis). Nonetheless, the balance of the O.C. Sanitation District UAAL Deferred Account was used to reduce the NPL for the O.C. Sanitation District as of the measurement date.
   b. Each of General Rate Groups #3, #4, #5, #9, #10, #11 and #12 and Safety Rate Groups #6, #7 and #8 have only one active employer, so all of the NPL for that Rate Group is allocated to the corresponding employer.
   c. For General Rate Groups #1 and #2, the NPL is allocated based on the actual employer contributions within the General Rate Group.
      - The NPL for Rate Group #1 was adjusted by the NPLs for the O.C. Vector Control District, Cypress Recreation and Parks, Department of Education and U.C.I. prior to allocating the net NPL to the other employers in Rate Group #1 as the NPLs for these four employers were calculated separately.

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- Calculate ratio of employer's contributions to the total contributions for the Rate Group. For this purpose, the employer contributions exclude the following amounts:
  1) Rate Group #1 (Department of Education): $267,000
  2) Rate Group #1 (U.C.I.): $2,789,000
  3) Rate Group #1 (Cypress Recreation and Parks): $878,000
- Multiply this ratio (unrounded) by the NPL for the Rate Group to determine the employer's proportionate share of the NPL for the Rate Group.
- The UAAL contributions referenced in (i), (ii) and (iii) above are adjusted with interest to December 31, 2019 and are used to reduced the NPL for the three employers as of December 31, 2019.

7. The percentages of contributions by employer are not exactly equal to the percentages we use to allocate the NPL by employer because the NPL for the County has been reduced to reflect the portion of the County Investment Account that has been allocated among the four County Rate Groups. The amounts of the County Investment Account that have been allocated to those Rate Groups are as follows:

Rate Group #1:	$5,558,363
Rate Group #2:	92,443,896
Rate Group #6:	9,607,620
Rate Group #7:	42,806,121
Total:	**$150,416,000**

In addition, the NPL for Rate Group #2 was allocated prior to applying the adjusted balance of the $1,744,454 in additional UAAL contributions made by O.C. Children and Families Commission on November 15, 2017. That balance is equal to $1,809,390 as of December 31, 2018 and is equal to $1,782,458 as of December 31, 2019 when adjusted with interest for the entire year and UAAL contribution offset starting from January 1, 2019 to December 31, 2019. We would continue to maintain the outstanding balance of the additional UAAL contributions for use in determining the NPL for this employer.

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8. If the employer is in several Rate Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Rate Group. Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

   For the active employers, the following items are allocated based on the corresponding proportionate share within each Rate Group:

   a. Net Pension Liability
   b. Service cost
   c. Interest on the Total Pension Liability
   d. Expensed portion of current-period benefit changes
   e. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability
   f. Expensed portion of current-period changes of assumptions or other inputs
   g. Member contributions
   h. Projected earnings on plan investments
   i. Expensed portion of current-period differences between actual and projected earnings on plan investments
   j. Administrative expense
   k. Recognition of beginning of year deferred outflows of resources as pension expense
   l. Recognition of beginning of year deferred inflows of resources as pension expense

Section 2: GASB 68 Information

Pension expense

Total for All Employers

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$499,255,591	$491,372,822
• Interest on the Total Pension Liability	1,452,644,872	1,379,917,267
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	4,160,905	(19,987,206)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(279,408,000)	(270,234,000)
• Projected earnings on plan investments	(1,012,912,065)	(1,035,650,701)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(234,179,185)	272,055,741
• Administrative expense	19,171,000	18,284,000
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	613,106,124	399,004,768
• Recognition of beginning of year deferred inflows of resources as pension expense	(471,091,023)	(451,049,194)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$590,748,219**	**$783,713,497**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

Orange County

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$366,249,523	$361,704,111
• Interest on the Total Pension Liability	1,076,190,936	1,025,915,198
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(971,449)	2,225,549
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(2,795,814)	(14,167,674)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(213,046,536)	(207,127,558)
• Projected earnings on plan investments	(730,206,990)	(748,179,749)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(168,900,852)	195,956,417
• Administrative expense	13,419,571	13,464,032
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	449,703,448	298,563,409
• Recognition of beginning of year deferred inflows of resources as pension expense	(341,078,002)	(327,351,945)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	7,241,587	5,016,038
Pension Expense	**$455,805,422**	**$606,017,828**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Cemetery District

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$351,892	$348,025
• Interest on the Total Pension Liability	730,794	708,227
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(83,319)	24,792
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(153,000)	(141,000)
• Projected earnings on plan investments	(684,372)	(696,211)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(155,024)	185,536
• Administrative expense	6,821	6,553
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	415,056	232,446
• Recognition of beginning of year deferred inflows of resources as pension expense	(301,651)	(301,651)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$127,197**	**$366,717**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Law Library

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$303,555	$322,890
• Interest on the Total Pension Liability	757,369	710,772
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	8,931	(59,333)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(159,000)	(159,000)
• Projected earnings on plan investments	(701,619)	(726,252)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(158,795)	193,384
• Administrative expense	5,567	6,897
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	862,354	782,777
• Recognition of beginning of year deferred inflows of resources as pension expense	(686,027)	(626,694)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	(372,508)	(372,508)
Pension Expense	**$(140,173)**	**$72,933**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Vector Control District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$0	$0
• Interest on the Total Pension Liability	1,838,973	1,848,812
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(63,304)	(196,473)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	0	0
• Projected earnings on plan investments	(1,749,918)	(1,848,408)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(395,310)	497,306
• Administrative expense	18,033	0
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	1,062,703	721,308
• Recognition of beginning of year deferred inflows of resources as pension expense	(1,062,441)	(865,968)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$(351,264)**	**$156,577**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Retirement System

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$2,204,272	$1,995,184
• Interest on the Total Pension Liability	6,886,777	5,980,605
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	449,510	368,482
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(10,876)	(79,280)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(1,499,664)	(1,344,479)
• Projected earnings on plan investments	(4,653,533)	(4,355,868)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,072,280)	1,144,155
• Administrative expense	81,847	75,152
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	2,728,584	1,591,215
• Recognition of beginning of year deferred inflows of resources as pension expense	(2,347,848)	(2,056,153)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	703,821	335,339
Pension Expense	**$3,470,610**	**$3,654,352**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Fire Authority

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$58,846,217	$57,116,725
• Interest on the Total Pension Liability	143,191,634	132,967,401
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	4,913,957	(2,961,807)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(25,523,000)	(23,623,000)
• Projected earnings on plan investments	(107,793,739)	(107,511,750)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(24,840,760)	28,451,707
• Administrative expense	2,331,831	2,443,231
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	60,681,021	37,792,896
• Recognition of beginning of year deferred inflows of resources as pension expense	(44,682,965)	(41,721,158)
• Net amortization of deferred amounts from changes in proportion and differences between employer’s contributions and proportionate share of contributions	0	0
Pension Expense	**$67,124,196**	**$82,954,245**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

Cypress Recreation and Parks

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$0	$0
• Interest on the Total Pension Liability	308,444	300,934
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	20,711	3,345
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	0	0
• Projected earnings on plan investments	(271,334)	(259,495)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(60,969)	70,660
• Administrative expense	0	15,899
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	807,951	733,946
• Recognition of beginning of year deferred inflows of resources as pension expense	(800,458)	(800,458)
• Net amortization of deferred amounts from changes in proportion and differences between employer’s contributions and proportionate share of contributions	0	0
Pension Expense	**$4,345**	**$64,831**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

Department of Education

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$0	$0
• Interest on the Total Pension Liability	846,896	856,137
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	44,534	34,113
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	0	0
• Projected earnings on plan investments	(590,740)	(675,747)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(134,644)	180,008
• Administrative expense	5,494	6,477
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	596,709	382,586
• Recognition of beginning of year deferred inflows of resources as pension expense	(496,921)	(504,215)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$271,328**	**$279,359**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

Transportation Corridor Agency

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$1,628,951	$1,693,722
• Interest on the Total Pension Liability	3,487,510	3,137,101
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	111,634	(31,117)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(748,000)	(840,000)
• Projected earnings on plan investments	(2,907,084)	(2,396,991)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(683,108)	624,025
• Administrative expense	303,189	51,803
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	1,317,753	806,977
• Recognition of beginning of year deferred inflows of resources as pension expense	(1,134,685)	(1,103,568)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$1,376,160**	**$1,941,952**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

City of San Juan Capistrano

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	December 31, 2019	December 31, 2018
Components of Pension Expense		
• Service cost	$2,152,313	$2,223,256
• Interest on the Total Pension Liability	6,724,443	6,664,259
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(197,603)	(24,181)
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(10,620)	(88,342)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(1,464,314)	(1,498,168)
• Projected earnings on plan investments	(4,543,841)	(4,853,795)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,047,004)	1,274,945
• Administrative expense	79,918	83,742
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	2,664,267	1,773,109
• Recognition of beginning of year deferred inflows of resources as pension expense	(2,292,505)	(2,291,196)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	(100,772)	(76,591)
Pension Expense	**$1,964,282**	**$3,187,038**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Sanitation District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$17,019,396	$16,436,454
• Interest on the Total Pension Liability	49,777,766	46,856,849
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	1,527,660	558,074
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(7,999,000)	(7,825,000)
• Projected earnings on plan investments	(46,959,052)	(48,767,818)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(10,929,917)	13,140,559
• Administrative expense	1,103,626	327,747
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	25,093,591	12,786,061
• Recognition of beginning of year deferred inflows of resources as pension expense	(18,624,486)	(18,624,486)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	372,508	372,508
Pension Expense	**$10,382,092**	**$15,260,948**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Transportation Authority

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$22,489,191	$21,969,087
• Interest on the Total Pension Liability	67,523,163	64,268,721
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	434,162	(2,053,634)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(9,822,000)	(9,162,000)
• Projected earnings on plan investments	(48,088,883)	(49,856,360)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(11,118,571)	13,108,760
• Administrative expense	721,096	705,212
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	29,054,915	18,923,272
• Recognition of beginning of year deferred inflows of resources as pension expense	(24,856,850)	(22,803,216)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$26,336,223**	**$35,099,842**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

U.C.I

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$0	$0
• Interest on the Total Pension Liability	7,314,482	7,453,561
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	217,420	115,980
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	0	0
• Projected earnings on plan investments	(4,883,758)	(5,577,083)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,113,640)	1,483,017
• Administrative expense	57,294	61,773
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	3,586,875	1,987,876
• Recognition of beginning of year deferred inflows of resources as pension expense	(3,010,050)	(3,684,569)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$2,168,623**	**$1,840,555**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Children and Families Comm.

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$(53,122)	$43,618
• Interest on the Total Pension Liability	(165,973)	130,749
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(189,450)	(61,098)
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	262	(1,733)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	36,142	(29,393)
• Projected earnings on plan investments	112,151	(95,229)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	25,842	25,014
• Administrative expense	(1,973)	1,643
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	(65,760)	34,787
• Recognition of beginning of year deferred inflows of resources as pension expense	56,584	(44,952)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	(350,297)	(289,199)
Pension Expense	**$(595,594)**	**$(285,793)**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

Local Agency Formation Comm.

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$122,410	$109,475
• Interest on the Total Pension Liability	382,446	328,154
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	26,906	2,334
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(604)	(4,350)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(83,281)	(73,771)
• Projected earnings on plan investments	(258,426)	(239,005)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(59,547)	62,779
• Administrative expense	4,545	4,124
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	151,527	87,309
• Recognition of beginning of year deferred inflows of resources as pension expense	(130,384)	(112,820)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	31,249	28,915
Pension Expense	**$186,841**	**$193,144**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

Rancho Santa Margarita

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$0	$0
• Interest on the Total Pension Liability	3,220	3,220
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	133	132
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	0	0
• Projected earnings on plan investments	(3,076)	(3,328)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(884)	586
• Administrative expense	0	0
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	3,874	4,028
• Recognition of beginning of year deferred inflows of resources as pension expense	(3,362)	(3,362)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	**$(95)**	**$1,276**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. Superior Court

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Components of Pension Expense		
• Service cost	$27,673,610	$27,167,159
• Interest on the Total Pension Liability	86,460,274	81,434,123
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	878,732	(2,508,769)
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(136,545)	(1,079,499)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(18,827,583)	(18,306,917)
• Projected earnings on plan investments	(58,422,939)	(59,311,106)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(13,461,975)	15,579,236
• Administrative expense	1,027,549	1,023,291
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	34,256,104	21,666,565
• Recognition of beginning of year deferred inflows of resources as pension expense	(29,476,139)	(27,997,338)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	(7,563,741)	(5,054,972)
Pension Expense	**$22,407,347**	**$32,611,773**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Pension expense (continued)

O.C. IHSS Public Authority

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2020 December 31, 2019	June 30, 2019 December 31, 2018
• Service cost	$267,383	$243,116
• Interest on the Total Pension Liability	385,718	352,444
• Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	3,354	(2,317)
• Expensed portion of current-period benefit changes	0	0
• Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(17,417)	(400)
• Expensed portion of current-period changes of assumptions or other inputs	0	0
• Member contributions[1]	(118,764)	(103,714)
• Projected earnings on plan investments	(304,912)	(296,506)
• Expensed portion of current-period differences between actual and projected earnings on plan investments	(71,747)	77,647
• Administrative expense	6,592	6,424
• Other	0	0
• Recognition of beginning of year deferred outflows of resources as pension expense	185,152	134,201
• Recognition of beginning of year deferred inflows of resources as pension expense	(162,833)	(155,445)
• Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	38,153	40,470
Pension Expense	**$210,679**	**$295,920**

[1] Member contributions include employer paid member contributions, if any.

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources

Total For All Employers

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$28,080,600	$30,727,591
• Changes of assumptions or other inputs	419,380,310	585,314,769
• Difference between projected and actual earnings on pension plan investments	816,168,467	1,258,427,015
• Difference between expected and actual experience in the Total Pension Liability	55,757,456	18,724,448
• **Total Deferred Outflows of Resources**	**$1,319,386,833**	**$1,893,193,823**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$28,080,600	$30,727,591
• Changes of assumptions or other inputs	8,813,853	57,779,687
• Difference between projected and actual earnings on pension plan investments	1,383,375,142	691,386,466
• Difference between expected and actual experience in the Total Pension Liability	298,374,305	454,047,301
• **Total Deferred Inflows of Resources**	**$1,718,643,900**	**$1,233,941,045**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$142,015,101
2021	$(197,815,147)	32,203,133
2022	(106,623,593)	123,394,687
2023	148,545,006	378,563,286
2024	(246,941,719)	(16,923,429)
2025	3,578,386	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Orange County

		June 30, 2020	June 30, 2019
Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$18,170,596	$25,452,653
• Changes of assumptions or other inputs		322,870,826	451,779,162
• Difference between projected and actual earnings on pension plan investments		587,160,184	907,051,313
• Difference between expected and actual experience in the Total Pension Liability		13,982,779	10,053,569
• **Total Deferred Outflows of Resources**		**$942,184,385**	**$1,394,336,697**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$4,789,699	$108,921
• Changes of assumptions or other inputs		6,642,961	43,625,464
• Difference between projected and actual earnings on pension plan investments		997,095,584	498,410,128
• Difference between expected and actual experience in the Total Pension Liability		206,914,979	315,142,849
• **Total Deferred Inflows of Resources**		**$1,215,443,223**	**$857,287,362**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$115,938,471
	2021	$(135,857,568)	36,829,538
	2022	(67,712,535)	105,067,064
	2023	116,022,910	289,031,435
	2024	(182,471,793)	(9,817,173)
	2025	(3,239,852)	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Cemetery District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	244,428	325,633
• Difference between projected and actual earnings on pension plan investments	556,607	859,393
• Difference between expected and actual experience in the Total Pension Liability	103,588	134,653
• **Total Deferred Outflows of Resources**	**$904,623**	**$1,319,679**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	5,895	38,647
• Difference between projected and actual earnings on pension plan investments	911,694	450,507
• Difference between expected and actual experience in the Total Pension Liability	582,255	287,311
• **Total Deferred Inflows of Resources**	**$1,499,844**	**$776,465**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$113,405
2021	$(181,116)	57,227
2022	(145,381)	92,962
2023	18,248	256,591
2024	(215,315)	23,029
2025	(71,657)	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Law Library

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68	June 30, 2020 December 31, 2019	June 30, 2019 December 31, 2018
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$9,214	$60,420
• Changes of assumptions or other inputs	214,778	286,133
• Difference between projected and actual earnings on pension plan investments	580,153	1,371,152
• Difference between expected and actual experience in the Total Pension Liability	43,407	0
• **Total Deferred Outflows of Resources**	**$847,552**	**$1,717,705**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$449,137	$872,851
• Changes of assumptions or other inputs	30,514	200,032
• Difference between projected and actual earnings on pension plan investments	921,702	437,711
• Difference between expected and actual experience in the Total Pension Liability	409,176	774,494
• **Total Deferred Inflows of Resources**	**$1,810,529**	**$2,285,088**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$(196,181)
2021	$(666,537)	(516,673)
2022	(145,192)	4,672
2023	44,331	194,195
2024	(203,262)	(53,396)
2025	7,683	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Vector Control District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	435,411	580,065
• Difference between projected and actual earnings on pension plan investments	1,491,917	2,352,302
• Difference between expected and actual experience in the Total Pension Liability	170,770	228,434
• **Total Deferred Outflows of Resources**	**$2,098,098**	**$3,160,801**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributios[1]	$0	$0
• Changes of assumptions or other inputs	0	0
• Difference between projected and actual earnings on pension plan investments	2,404,780	1,278,263
• Difference between expected and actual experience in the Total Pension Liability	1,511,789	1,811,847
• **Total Deferred Inflows of Resources**	**$3,916,569**	**$3,090,110**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$262
2021	$(821,430)	(362,816)
2022	(349,110)	109,504
2023	41,921	500,535
2024	(635,409)	(176,794)
2025	(54,443)	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Retirement System

Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$3,962,866	$2,594,615
• Changes of assumptions or other inputs		2,018,023	2,445,231
• Difference between projected and actual earnings on pension plan investments		3,773,899	5,304,404
• Difference between expected and actual experience in the Total Pension Liability		0	0
• **Total Deferred Outflows of Resources**		**$9,754,788**	**$10,344,250**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$218,343	$330,892
• Changes of assumptions or other inputs		62,731	374,031
• Difference between projected and actual earnings on pension plan investments		6,362,377	2,919,627
• Difference between expected and actual experience in the Total Pension Liability		1,273,114	1,894,371
• **Total Deferred Inflows of Resources**		**$7,916,565**	**$5,518,921**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$1,050,111
	2021	$27,575	652,140
	2022	246,502	826,474
	2023	1,558,040	2,027,486
	2024	(371,122)	269,118
	2025	377,228	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Fire Authority

Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1(1)]		$0	$0
• Changes of assumptions or other inputs		29,267,911	44,462,250
• Difference between projected and actual earnings on pension plan investments		85,355,117	130,602,672
• Difference between expected and actual experience in the Total Pension Liability		24,478,887	703,034
• **Total Deferred Outflows of Resources**		**$139,101,915**	**$175,767,956**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		130,986	858,688
• Difference between projected and actual earnings on pension plan investments		144,282,784	69,359,310
• Difference between expected and actual experience in the Total Pension Liability		38,937,675	58,320,223
• **Total Deferred Inflows of Resources**		**$183,351,445**	**$128,538,221**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$15,998,056
	2021	$(22,142,217)	(2,215,414)
	2022	(14,700,769)	5,226,034
	2023	10,935,776	30,862,579
	2024	(22,568,325)	(2,641,520)
	2025	4,226,005	0
	2026	0	0
	Thereafter	0	0

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

Deferred outflows of resources and deferred inflows of resources (continued)

Cypress Recreation and Parks

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	70,336	93,704
• Difference between projected and actual earnings on pension plan investments	211,982	282,642
• Difference between expected and actual experience in the Total Pension Liability	2,252,572	2,865,838
• **Total Deferred Outflows of Resources**	**$2,534,890**	**$3,242,184**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	0	0
• Difference between projected and actual earnings on pension plan investments	1,844,790	2,401,373
• Difference between expected and actual experience in the Total Pension Liability	0	0
• **Total Deferred Inflows of Resources**	**$1,844,790**	**$2,401,373**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$7,493
2021	$(32,765)	7,493
2022	(32,764)	7,494
2023	767,695	807,953
2024	(29,879)	10,378
2025	17,813	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Department of Education

Reporting Date for Employer under GASB 68		June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		177,787	236,853
• Difference between projected and actual earnings on pension plan investments		540,022	872,456
• Difference between expected and actual experience in the Total Pension Liability		380,618	369,390
• **Total Deferred Outflows of Resources**		**$1,098,427**	**$1,478,699**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		10,085	66,119
• Difference between projected and actual earnings on pension plan investments		858,174	499,033
• Difference between expected and actual experience in the Total Pension Liability		678,741	940,191
• **Total Deferred Inflows of Resources**		**$1,547,000**	**$1,505,343**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$99,788
	2021	$(237,096)	(146,986)
	2022	(166,861)	(76,751)
	2023	(22,380)	67,730
	2024	(60,537)	29,575
	2025	38,301	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Transportation Corridor Agency

Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		880,388	1,172,875
• Difference between projected and actual earnings on pension plan investments		1,872,077	2,855,534
• Difference between expected and actual experience in the Total Pension Liability		615,484	114,750
• **Total Deferred Outflows of Resources**		**$3,367,949**	**$4,143,159**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		28,116	184,306
• Difference between projected and actual earnings on pension plan investments		3,760,486	1,588,385
• Difference between expected and actual experience in the Total Pension Liability		940,190	1,358,355
• **Total Deferred Inflows of Resources**		**$4,728,792**	**$3,131,046**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$183,068
	2021	$(519,370)	52,104
	2022	(387,284)	184,190
	2023	49,310	620,784
	2024	(599,506)	(28,033)
	2025	96,007	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

City of San Juan Capistrano

Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1(1)]		$887,243	$1,434,064
• Changes of assumptions or other inputs		1,970,455	2,724,750
• Difference between projected and actual earnings on pension plan investments		3,684,941	5,910,760
• Difference between expected and actual experience in the Total Pension Liability		0	0
• **Total Deferred Outflows of Resources**		**$6,542,639**	**$10,069,574**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$1,975,710	$1,662,955
• Changes of assumptions or other inputs		61,252	416,787
• Difference between projected and actual earnings on pension plan investments		6,212,405	3,253,375
• Difference between expected and actual experience in the Total Pension Liability		1,243,105	2,110,920
• **Total Deferred Inflows of Resources**		**$9,492,472**	**$7,444,037**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$285,103
	2021	$(1,477,829)	(218,881)
	2022	(718,794)	558,425
	2023	771,469	2,093,974
	2024	(1,345,609)	(93,084)
	2025	(179,070)	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Sanitation District

		June 30, 2020	June 30, 2019
Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$449,137	$872,851
• Changes of assumptions or other inputs		12,311,067	16,401,122
• Difference between projected and actual earnings on pension plan investments		39,421,678	59,867,140
• Difference between expected and actual experience in the Total Pension Liability		9,606,499	2,740,145
• **Total Deferred Outflows of Resources**		**$61,788,381**	**$79,881,258**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$9,214	$60,420
• Changes of assumptions or other inputs		372,978	2,445,073
• Difference between projected and actual earnings on pension plan investments		64,842,567	32,687,002
• Difference between expected and actual experience in the Total Pension Liability		5,416,832	10,405,119
• **Total Deferred Inflows of Resources**		**$70,641,591**	**$45,597,614**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$6,841,613
	2021	$(5,922,898)	3,479,359
	2022	(2,855,374)	6,546,883
	2023	7,473,909	16,876,166
	2024	(8,862,635)	539,623
	2025	1,313,788	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Transportation Authority

Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		21,920,909	29,203,603
• Difference between projected and actual earnings on pension plan investments		39,326,279	60,889,928
• Difference between expected and actual experience in the Total Pension Liability		2,331,117	429,659
• **Total Deferred Outflows of Resources**		**$63,578,305**	**$90,523,190**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		595,454	3,903,525
• Difference between projected and actual earnings on pension plan investments		66,279,519	33,794,383
• Difference between expected and actual experience in the Total Pension Liability		21,768,391	31,328,024
• **Total Deferred Inflows of Resources**		**$88,643,364**	**$69,025,932**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$4,198,065
	2021	$(10,403,779)	280,630
	2022	(7,287,395)	3,397,014
	2023	4,762,038	15,446,447
	2024	(12,509,305)	(1,824,898)
	2025	373,382	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

U.C.I.

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	1,425,191	1,898,677
• Difference between projected and actual earnings on pension plan investments	4,449,052	7,212,467
• Difference between expected and actual experience in the Total Pension Liability	1,790,493	1,083,806
• **Total Deferred Outflows of Resources**	**$7,664,736**	**$10,194,950**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	79,608	521,873
• Difference between projected and actual earnings on pension plan investments	7,119,985	4,163,238
• Difference between expected and actual experience in the Total Pension Liability	2,432,087	3,502,059
• **Total Deferred Inflows of Resources**	**$9,631,680**	**$8,187,170**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$576,825
2021	$(1,008,659)	(112,439)
2022	(736,329)	159,891
2023	384,924	1,281,144
2024	(793,861)	102,359
2025	186,981	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Children and Families Comm.

Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$0	$0
• Changes of assumptions or other inputs		(48,635)	53,458
• Difference between projected and actual earnings on pension plan investments		(90,952)	115,966
• Difference between expected and actual experience in the Total Pension Liability		0	0
• **Total Deferred Outflows of Resources**		**$(139,587)**	**$169,424**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$1,652,118	$1,081,690
• Changes of assumptions or other inputs		(1,512)	8,177
• Difference between projected and actual earnings on pension plan investments		(153,335)	63,829
• Difference between expected and actual experience in the Total Pension Liability		(30,682)	41,415
• **Total Deferred Inflows of Resources**		**$1,466,589**	**$1,195,111**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$(342,726)
	2021	$(471,966)	(304,205)
	2022	(411,273)	(221,833)
	2023	(342,312)	(99,138)
	2024	(217,925)	(57,785)
	2025	(162,700)	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Local Agency Formation Comm.

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions(1)	$246,158	$204,067
• Changes of assumptions or other inputs	112,068	134,169
• Difference between projected and actual earnings on pension plan investments	209,577	291,051
• Difference between expected and actual experience in the Total Pension Liability	0	0
• **Total Deferred Outflows of Resources**	**$567,803**	**$629,287**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$77,447	$134,872
• Changes of assumptions or other inputs	3,484	20,523
• Difference between projected and actual earnings on pension plan investments	353,324	160,199
• Difference between expected and actual experience in the Total Pension Liability	70,700	103,944
• **Total Deferred Inflows of Resources**	**$504,955**	**$419,538**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$50,250
2021	$(24,951)	7,729
2022	39,056	68,962
2023	61,377	84,409
2024	(35,256)	(1,601)
2025	22,622	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

Rancho Santa Margarita

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	480	639
• Difference between projected and actual earnings on pension plan investments	3,008	6,148
• Difference between expected and actual experience in the Total Pension Liability	1,242	1,170
• **Total Deferred Outflows of Resources**	**$4,730**	**$7,957**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$0	$0
• Changes of assumptions or other inputs	29	203
• Difference between projected and actual earnings on pension plan investments	5,535	2,995
• Difference between expected and actual experience in the Total Pension Liability	5,388	7,578
• **Total Deferred Inflows of Resources**	**$10,952**	**$10,776**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$512
2021	$(1,764)	(1,013)
2022	(2,772)	(2,021)
2023	(1,159)	(408)
2024	(642)	111
2025	115	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. Superior Court

		June 30, 2020	June 30, 2019
Reporting Date for Employer under GASB 68		**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68		**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$4,270,636	$0
• Changes of assumptions or other inputs		25,335,345	33,295,171
• Difference between projected and actual earnings on pension plan investments		47,379,540	72,226,722
• Difference between expected and actual experience in the Total Pension Liability		0	0
• **Total Deferred Outflows of Resources**		**$76,985,521**	**$105,521,893**
Deferred Inflows of Resources			
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]		$18,899,874	$26,463,615
• Changes of assumptions or other inputs		787,559	5,092,945
• Difference between projected and actual earnings on pension plan investments		79,876,681	39,754,715
• Difference between expected and actual experience in the Total Pension Liability		15,983,355	25,794,457
• **Total Deferred Inflows of Resources**		**$115,547,469**	**$97,105,732**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:			
Reporting Date for Employer under GASB 68 Year Ended June 30:			
	2020	N/A	$(2,848,528)
	2021	$(18,032,264)	(5,329,545)
	2022	(11,227,431)	1,391,461
	2023	5,992,846	18,403,968
	2024	(15,933,378)	(3,201,195)
	2025	638,279	0
	2026	0	0
	Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

O.C. IHSS Public Authority

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Deferred Outflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$84,750	$108,921
• Changes of assumptions or other inputs	173,542	221,274
• Difference between projected and actual earnings on pension plan investments	243,386	354,965
• Difference between expected and actual experience in the Total Pension Liability	0	0
• **Total Deferred Outflows of Resources**	**$501,678**	**$685,160**
Deferred Inflows of Resources		
• Changes in proportion and differences between employer's contributions and proportionate share of contributions[1]	$9,058	$11,375
• Changes of assumptions or other inputs	3,713	23,294
• Difference between projected and actual earnings on pension plan investments	396,090	162,393
• Difference between expected and actual experience in the Total Pension Liability	237,210	224,144
• **Total Deferred Inflows of Resources**	**$646,071**	**$421,206**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date for Employer under GASB 68 Year Ended June 30:		
2020	N/A	$59,514
2021	$(40,513)	44,885
2022	(29,887)	54,262
2023	26,063	107,436
2024	(87,960)	(2,143)
2025	(12,096)	0
2026	0	0
Thereafter	0	0

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

Section 2: GASB 68 Information

Deferred outflows of resources and deferred inflows of resources (continued)

There are changes in each employer's proportionate share of the total NPL during the measurement period ended December 31, 2019. The net effect of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources for the current period (i.e., 2019) is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through OCERS which is 5.86 years determined as of December 31, 2018 (the beginning of the measurement period ended December 31, 2019). This is described in Paragraph 33a. of GASB 68.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended December 31, 2019 is recognized over the same period.

The net effects of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources for prior periods are continued to be recognized based on the expected remaining service lives of all employees calculated as of those prior measurement dates.

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

- Calculating each active employees' 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.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability

Total for All Employers

Reporting Date for Employer under GASB 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%	$5,291,126,088	$1,494,745,333	353.98%	67.16%
2015	100.000%	5,082,480,673	1,513,206,357	335.87%	69.42%
2016	100.000%	5,716,604,741	1,521,035,820	375.84%	67.10%
2017	100.000%	5,191,216,603	1,602,675,426	323.91%	71.16%
2018	100.000%	4,952,099,401	1,678,322,080	295.06%	74.93%
2019	100.000%	6,197,202,089	1,718,798,287	360.55%	70.03%
2020	100.000%	5,075,682,463	1,783,054,087	284.66%	76.67%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Orange County

Reporting Date for Employer under GASB 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	74.198%	$3,925,918,613	$1,086,993,804	361.17%	66.88%
2015	76.680%	3,897,232,634	1,107,550,873	351.88%	68.16%
2016	76.813%	4,391,070,880	1,117,547,827	392.92%	65.66%
2017	77.898%	4,043,855,643	1,199,272,843	337.19%	69.56%
2018	80.445%	3,983,695,231	1,246,487,036	319.59%	72.85%
2019	79.367%	4,918,576,912	1,271,800,976	386.74%	68.06%
2020	81.254%	4,124,212,240	1,312,799,835	314.15%	74.47%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Cemetery District

Reporting Date for Employer under GASB 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	0.034%	$1,820,018	$1,183,960	153.72%	76.02%
2015	(0.002%)	(95,350)	1,202,916	(7.93%)	101.24%
2016	0.009%	533,906	1,247,006	42.82%	93.62%
2017	0.004%	222,409	1,288,388	17.26%	97.47%
2018	(0.004%)	(173,677)	1,419,045	(12.24%)	101.78%
2019	0.016%	962,119	1,518,808	63.35%	91.02%
2020	(0.004%)	(228,119)	1,595,506	(14.30%)	102.07%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Law Library

Reporting Date for Employer under GASB 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	0.063%	$3,314,766	$1,191,662	278.16%	63.14%
2015	0.063%	3,221,570	1,193,852	269.85%	66.76%
2016	0.061%	3,472,003	1,153,022	301.12%	62.38%
2017	0.034%	1,770,282	1,106,587	159.98%	80.96%
2018	(0.001%)	(36,317)	1,095,599	(3.31%)	100.35%
2019	0.009%	573,252	1,075,119	53.32%	94.64%
2020	(0.001%)	(74,515)	1,057,915	(7.04%)	100.66%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Vector Control District

Reporting Date for Employer under GASB 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	0.047%	$2,464,723	$0	N/A	91.24%
2015	0.057%	2,900,367	0	N/A	89.85%
2016	0.034%	1,941,891	0	N/A	92.66%
2017	0.032%	1,669,793	0	N/A	93.78%
2018	0.024%	1,166,920	0	N/A	95.89%
2019	0.040%	2,492,695	0	N/A	90.92%
2020	(0.012%)	(625,500)	0	N/A	102.29%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Retirement System

Reporting Date for Employer under GASB 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	0.402%	$21,259,813	$5,368,550	396.01%	64.40%
2015	0.406%	20,656,114	5,655,725	365.22%	67.15%
2016	0.433%	24,747,342	6,063,327	408.15%	64.73%
2017	0.422%	21,886,393	6,190,905	353.52%	68.69%
2018	0.433%	21,427,080	6,486,488	330.33%	71.95%
2019	0.465%	28,844,760	7,501,588	384.52%	67.06%
2020	0.528%	26,824,264	8,491,615	315.89%	73.18%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Fire Authority

Reporting Date for Employer under GASB 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	8.366%	$442,651,348	$129,689,221	341.32%	69.66%
2015	9.188%	466,968,323	129,187,729	361.46%	70.35%
2016	9.056%	517,669,806	129,452,647	399.89%	68.90%
2017	9.043%	469,430,660	124,514,004	377.01%	73.11%
2018	7.485%	370,674,668	148,890,685	248.96%	80.44%
2019	7.531%	466,731,526	155,479,486	300.19%	76.63%
2020	6.982%	354,395,457	164,583,742	215.33%	83.51%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Cypress Recreation and Parks

Reporting Date for Employer under GASB 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	0.000%	$0	$0	N/A	N/A
2015	0.000%	0	0	N/A	N/A
2016	0.000%	0	0	N/A	N/A
2017	0.000%	0	0	N/A	N/A
2018	0.015%	718,340	0	N/A	83.78%
2019	0.007%	408,781	0	N/A	90.81%
2020	0.005%	262,415	0	N/A	94.23%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Department of Education

Reporting Date for Employer under GASB 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	0.051%	$2,691,224	$62,538	4303.34%	81.08%
2015	0.072%	3,637,615	0	N/A	75.31%
2016	0.075%	4,306,689	0	N/A	69.50%
2017	0.085%	4,415,517	0	N/A	68.18%
2018	0.051%	2,530,324	0	N/A	80.00%
2019	0.057%	3,517,372	0	N/A	71.79%
2020	0.061%	3,099,339	0	N/A	74.84%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Transportation Corridor Agency

Reporting Date for Employer under GASB 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	0.215%	$11,359,334	$6,054,822	187.61%	66.44%
2015	0.210%	10,682,807	6,118,067	174.61%	69.62%
2016	0.222%	12,713,136	6,088,331	208.81%	66.45%
2017	0.239%	12,423,364	6,431,272	193.17%	69.93%
2018	0.207%	10,242,769	6,775,031	151.18%	76.84%
2019	0.214%	13,253,632	6,609,886	200.51%	71.83%
2020	(0.035%)	(1,753,164)	6,809,655	(25.75%)	103.35%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

City of San Juan Capistrano

Reporting Date for Employer under GASB 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	0.535%	$28,312,625	$6,324,207	447.69%	64.40%
2015	0.548%	27,866,378	6,863,345	406.02%	67.15%
2016	0.512%	29,249,120	6,464,876	452.43%	64.73%
2017	0.483%	25,089,009	6,636,488	378.05%	68.69%
2018	0.528%	26,138,852	7,227,226	361.67%	71.95%
2019	0.519%	32,142,058	7,253,654	443.12%	67.06%
2020	0.516%	26,191,970	7,294,439	359.07%	73.18%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Sanitation District

Reporting Date for Employer under GASB 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	3.832%	$202,747,516	$58,954,754	343.90%	63.14%
2015	1.130%	57,418,760	58,641,163	97.92%	89.61%
2016	0.742%	42,439,759	59,789,927	70.98%	92.74%
2017	(0.200%)	(10,384,510)	60,000,017	(17.31%)	101.70%
2018	(0.799%)	(39,571,102)	62,341,796	(63.47%)	105.96%
2019	0.468%	29,029,145	66,475,479	43.67%	95.86%
2020	(0.974%)	(49,446,617)	71,395,906	(69.26%)	106.64%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Transportation Authority

Reporting Date for Employer under GASB 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	4.112%	$217,568,793	$92,199,745	235.98%	71.77%
2015	4.006%	203,591,950	95,061,437	214.17%	74.00%
2016	4.377%	250,192,983	93,109,984	268.71%	69.82%
2017	4.436%	230,260,478	94,507,309	243.64%	73.17%
2018	4.283%	212,117,162	94,528,116	224.40%	77.15%
2019	4.353%	269,788,642	97,229,545	277.48%	71.97%
2020	4.419%	224,284,548	101,980,885	219.93%	77.80%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

U.C.I.

Reporting Date for Employer under GASB 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	0.609%	$32,214,491	$643,375	5007.11%	74.44%
2015	0.523%	26,578,391	574,780	4624.10%	77.81%
2016	0.633%	36,184,065	285,025	12695.05%	69.50%
2017	0.696%	36,113,699	43,707	82626.81%	68.96%
2018	0.558%	27,644,960	14,874	185860.97%	75.13%
2019	0.562%	34,808,679	0	N/A	67.93%
2020	0.595%	30,213,739	0	N/A	71.62%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Children and Families Comm.

Reporting Date for Employer under GASB 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	0.087%	$4,590,845	$1,116,074	411.34%	64.40%
2015	0.078%	3,957,425	1,043,030	379.42%	67.15%
2016	0.071%	4,066,523	1,042,786	389.97%	64.73%
2017	0.061%	3,158,290	925,031	341.43%	68.69%
2018	0.019%	962,204	849,266	113.30%	90.09%
2019	0.010%	630,610	966,061	65.28%	91.49%
2020	(0.013%)	(646,472)	1,061,044	(60.93%)	115.26%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Local Agency Formation Comm.

Reporting Date for Employer under GASB 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	0.022%	$1,187,537	$273,719	433.85%	64.40%
2015	0.026%	1,303,484	334,804	389.33%	67.15%
2016	0.020%	1,156,534	287,698	402.00%	64.73%
2017	0.026%	1,340,888	374,792	357.77%	68.69%
2018	0.026%	1,268,133	394,760	321.24%	71.95%
2019	0.026%	1,582,703	419,538	377.25%	67.06%
2020	0.029%	1,489,642	475,099	313.54%	73.18%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

Rancho Santa Margarita

Reporting Date for Employer under GASB 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	(0.000%)	$(4,181)	$0	N/A	108.66%
2015	0.000%	1,729	0	N/A	96.78%
2016	0.000%	6,660	0	N/A	88.06%
2017	0.000%	9,332	0	N/A	82.95%
2018	(0.000%)	(2,320)	0	N/A	104.91%
2019	0.000%	1,284	0	N/A	97.28%
2020	(0.000%)	(2,214)	0	N/A	104.69%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. Superior Court

Reporting Date for Employer under GASB 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	7.415%	$392,321,750	$103,987,082	377.28%	64.40%
2015	7.002%	355,886,410	99,034,265	359.36%	67.15%
2016	6.926%	395,957,480	97,656,241	405.46%	64.73%
2017	6.726%	349,173,850	100,413,439	347.74%	68.69%
2018	6.716%	332,589,831	100,683,255	330.33%	71.95%
2019	6.338%	392,760,910	101,374,099	387.44%	67.06%
2020	6.635%	336,766,149	104,356,239	322.71%	73.18%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of proportionate share of the net pension liability (continued)

O.C. IHSS Public Authority

Reporting Date for Employer under GASB 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	0.013%	$706,873	$701,820	100.72%	73.15%
2015	0.013%	672,066	744,371	90.29%	75.26%
2016	0.016%	895,964	847,123	105.77%	73.52%
2017	0.015%	781,506	970,644	80.51%	79.30%
2018	0.014%	706,343	1,128,903	62.57%	84.20%
2019	0.018%	1,097,009	1,094,048	100.27%	77.97%
2020	0.014%	719,301	1,152,206	62.43%	86.11%

[1] Covered payroll represents payroll on which contributions to the pension plan are based.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability

Total for All Employer

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	December 31, 2019	December 31, 2018
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$6,197,202,089	$4,952,099,401
• Pension Expense	590,748,219	783,713,497
• Employer Contributions	(653,758,000)	(580,741,000)
• New Net Deferred Inflows/Outflows	(916,494,744)	990,085,765
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(142,015,101)	52,044,426
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$5,075,682,463**	**$6,197,202,089**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Orange County

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$4,918,576,912	$3,983,695,231
• Pension Expense	455,805,422	606,017,828
• Employer Contributions	(439,861,920)	(418,974,842)
• New Net Deferred Inflows/Outflows	(689,191,062)	714,262,376
• Change in Allocation of Prior Deferred Inflows/Outflows	(528,831)	(1,123,621)
• New Net Deferred Flows Due to Change in Proportion[1]	(4,721,248)	10,927,442
• Recognition of Prior Deferred Inflows/Outflows	(108,625,446)	28,788,536
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	(7,241,587)	(5,016,038)
• **Ending Net Pension Liability**	**$4,124,212,240**	**$4,918,576,912**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Cemetery District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$962,119	$(173,677)
• Pension Expense	127,197	366,717
• Employer Contributions	(179,000)	(164,000)
• New Net Deferred Inflows/Outflows	(1,025,030)	863,874
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(113,405)	69,205
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$(228,119)**	**$962,119**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Law Library

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$573,252	$(36,317)
• Pension Expense	(140,173)	72,933
• Employer Contributions	(112,000)	(162,000)
• New Net Deferred Inflows/Outflows	(591,775)	482,211
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(176,327)	(156,083)
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	372,508	372,508
• **Ending Net Pension Liability**	**$(74,515)**	**$573,252**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Vector Control District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$2,492,695	$1,166,920
• Pension Expense	(351,264)	156,577
• Employer Contributions	(877,769)	0
• New Net Deferred Inflows/Outflows	(1,888,900)	1,024,538
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(262)	144,660
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$(625,500)**	**$2,492,695**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Retirement System

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$28,844,760	$21,427,080
• Pension Expense	3,470,610	3,654,352
• Employer Contributions	(2,504,000)	(2,187,000)
• New Net Deferred Inflows/Outflows	(4,341,978)	4,187,357
• Change in Allocation of Prior Deferred Inflows/Outflows	254,808	(175,876)
• New Net Deferred Flows Due to Change in Proportion[1]	2,184,621	1,809,248
• Recognition of Prior Deferred Inflows/Outflows	(380,736)	464,938
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	(703,821)	(335,339)
• **Ending Net Pension Liability**	**$26,824,264**	**$28,844,760**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Fire Authority

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$466,731,526	$370,674,668
• Pension Expense	67,124,196	82,954,245
• Employer Contributions	(87,981,000)	(90,090,000)
• New Net Deferred Inflows/Outflows	(75,481,209)	99,264,351
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(15,998,056)	3,928,262
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$354,394,457**	**$466,731,526**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Cypress Recreation and Parks

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$408,781	$718,340
• Pension Expense	4,345	64,831
• Employer Contributions	0	(739,966)
• New Net Deferred Inflows/Outflows	(143,218)	299,064
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(7,493)	66,512
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$262,415**	**$408,781**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Department of Education

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$3,517,372	$2,530,324
• Pension Expense	271,328	279,359
• Employer Contributions	(267,432)	(301,464)
• New Net Deferred Inflows/Outflows	(322,141)	887,524
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(99,788)	121,629
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$3,099,339**	**$3,517,372**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Transportation Corridor Agency

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$13,253,632	$10,242,769
• Pension Expense	1,376,160	1,941,952
• Employer Contributions	(14,010,000)	(1,571,000)
• New Net Deferred Inflows/Outflows	(2,189,888)	2,343,320
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(183,068)	296,591
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$(1,753,164)**	**$13,253,632**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

City of San Juan Capistrano

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$32,142,058	$26,138,852
• Pension Expense	1,964,282	3,187,038
• Employer Contributions	(2,339,000)	(2,332,000)
• New Net Deferred Inflows/Outflows	(4,239,630)	4,666,022
• Change in Allocation of Prior Deferred Inflows/Outflows	(104,402)	6,197
• New Net Deferred Flows Due to Change in Proportion[1]	(960,348)	(118,729)
• Recognition of Prior Deferred Inflows/Outflows	(371,762)	518,087
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	100,772	76,591
• **Ending Net Pension Liability**	**$26,191,970**	**$32,142,058**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Sanitation District

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$29,029,145	$(39,571,102)
• Pension Expense	10,382,092	15,260,948
• Employer Contributions	(45,721,000)	(7,429,000)
• New Net Deferred Inflows/Outflows	(36,295,241)	55,302,382
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(6,469,105)	5,838,425
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	(372,508)	(372,508)
• **Ending Net Pension Liability**	**$(49,446,617)**	**$29,029,145**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Transportation Authority

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$269,788,642	$212,117,162
• Pension Expense	26,336,223	35,099,842
• Employer Contributions	(25,278,000)	(23,660,000)
• New Net Deferred Inflows/Outflows	(42,364,252)	42,351,694
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(4,198,065)	3,879,944
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$224,284,548**	**$269,788,642**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

U.C.I.

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$34,808,679	$27,644,960
• Pension Expense	2,168,623	1,840,555
• Employer Contributions	(2,788,839)	(2,875,057)
• New Net Deferred Inflows/Outflows	(3,397,899)	6,501,528
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(576,825)	1,696,693
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$30,213,739**	**$34,808,679**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Children and Families Comm.

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$630,610	$962,204
• Pension Expense	(595,594)	(285,793)
• Employer Contributions	(101,000)	(177,000)
• New Net Deferred Inflows/Outflows	104,643	91,545
• Change in Allocation of Prior Deferred Inflows/Outflows	(123,879)	40,279
• New Net Deferred Flows Due to Change in Proportion[1]	(920,725)	(299,989)
• Recognition of Prior Deferred Inflows/Outflows	9,176	10,165
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	350,297	289,199
• **Ending Net Pension Liability**	**$(646,472)**	**$630,610**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Local Agency Formation Comm.

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$1,582,703	$1,268,133
• Pension Expense	186,841	193,144
• Employer Contributions	(133,000)	(115,000)
• New Net Deferred Inflows/Outflows	(241,125)	229,759
• Change in Allocation of Prior Deferred Inflows/Outflows	15,850	(1,390)
• New Net Deferred Flows Due to Change in Proportion[1]	130,765	11,461
• Recognition of Prior Deferred Inflows/Outflows	(21,143)	25,511
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	(31,249)	(28,915)
• **Ending Net Pension Liability**	**$1,489,642**	**$1,582,703**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

Rancho Santa Margarita

Reporting Date for Employer under GASB 68 Measurement Date for Employer under GASB 68 Reconciliation of Net Pension Liability	June 30, 2020 December 31, 2019	June 30, 2019 December 31, 2018
• Beginning Net Pension Liability	$1,284	$(2,320)
• Pension Expense	(95)	1,276
• Employer Contributions	0	0
• New Net Deferred Inflows/Outflows	(2,891)	2,994
• Change in Allocation of Prior Deferred Inflows/Outflows	0	0
• New Net Deferred Flows Due to Change in Proportion[1]	0	0
• Recognition of Prior Deferred Inflows/Outflows	(512)	(666)
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	0	0
• **Ending Net Pension Liability**	**$(2,214)**	**$1,284**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. Superior Court

Reporting Date for Employer under GASB 68	**June 30, 2020**	**June 30, 2019**
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$392,760,910	$332,589,831
• Pension Expense	22,407,347	32,611,773
• Employer Contributions	(31,424,000)	(29,779,000)
• New Net Deferred Inflows/Outflows	(54,511,512)	57,016,602
• Change in Allocation of Prior Deferred Inflows/Outflows	478,992	1,254,017
• New Net Deferred Flows Due to Change in Proportion[1]	4,270,636	(12,318,058)
• Recognition of Prior Deferred Inflows/Outflows	(4,779,965)	6,330,773
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	7,563,741	5,054,972
• **Ending Net Pension Liability**	**$336,766,149**	**$392,760,910**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

Schedule of reconciliation of net pension liability (continued)

O.C. IHSS Public Authority

Reporting Date for Employer under GASB 68	June 30, 2020	June 30, 2019
Measurement Date for Employer under GASB 68	**December 31, 2019**	**December 31, 2018**
Reconciliation of Net Pension Liability		
• Beginning Net Pension Liability	$1,097,009	$706,343
• Pension Expense	210,679	295,920
• Employer Contributions	(180,040)	(183,671)
• New Net Deferred Inflows/Outflows	(371,636)	308,624
• Change in Allocation of Prior Deferred Inflows/Outflows	7,462	394
• New Net Deferred Flows Due to Change in Proportion[1]	16,299	(11,375)
• Recognition of Prior Deferred Inflows/Outflows	(22,319)	21,244
• Recognition of Prior Deferred Flows Due to Change in Proportion[1]	(38,153)	(40,470)
• **Ending Net Pension Liability**	**$719,301**	**$1,097,009**

[1] Includes differences between employer contributions and proportionate share of contributions.

Section 2: GASB 68 Information

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 Expected and Actual Experience on Total Pension Liability

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	$(327,402,088)	6.18	$(52,977,684)	$(52,977,684)	$(52,977,684)	$(52,977,684)	$(52,977,684)	$(52,977,684)	$(9,535,984)	$0
2016	(205,462,673)	6.06	N/A	(33,904,732)	(33,904,732)	(33,904,732)	(33,904,732)	(33,904,732)	(33,904,732)	(2,034,281)
2017	(323,565,741)	5.94	N/A	N/A	(54,472,347)	(54,472,347)	(54,472,347)	(54,472,347)	(54,472,347)	(51,204,006)
2018	(66,963,603)	6.01	N/A	N/A	N/A	(11,142,029)	(11,142,029)	(11,142,029)	(11,142,029)	(11,142,029)
2019	(118,124,401)	5.91	N/A	N/A	N/A	N/A	(19,987,206)	(19,987,206)	(19,987,206)	(19,987,206)
2020	24,382,911	5.86	0	0	0	0	0	4,160,905	4,160,905	4,160,905
Net increase (decrease) in pension expense			**$(52,977,684)**	**$(86,882,416)**	**$(141,354,763)**	**$(152,496,792)**	**$(172,483,998)**	**$(168,323,093)**	**$(124,881,393)**	**$(80,206,617)**

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2023	2024	2025	2026	2027	2028	2029	2030
2015	$(327,402,088)	6.18	$0	$0	$0	$0	$0	$0	$0	$0
2016	(205,462,673)	6.06	0	0	0	0	0	0	0	0
2017	(323,565,741)	5.94	0	0	0	0	0	0	0	0
2018	(66,963,603)	6.01	(11,142,029)	(111,429)	0	0	0	0	0	0
2019	(118,124,401)	5.91	(19,987,206)	(18,188,371)	0	0	0	0	0	0
2020	24,382,911	5.86	4,160,905	4,160,905	3,578,386	0	0	0	0	0
Net increase (decrease) in pension expense			**$(26,968,330)**	**$(14,138,895)**	**$3,578,386**	**$0**	**$0**	**$0**	**$0**	**$0**

As described in the Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources, for the current period, the average of the expected remaining service lives of all employees that are provided with pensions through OCERS (active and inactive employees) determined as of December 31, 2018 (the beginning of the measurement period ending December 31, 2019) is 5.86 years.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability (continued)

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

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30: 2015	2016	2017	2018	2019	2020	2021	2022
2015	$(127,729,220)	6.18	$(20,668,159)	$(20,668,159)	$(20,668,159)	$(20,668,159)	$(20,668,159)	$(20,668,159)	$(3,720,266)	$0
2016	0	6.06	N/A	0	0	0	0	0	0	0
2017	0	5.94	N/A	N/A	0	0	0	0	0	0
2018	827,197,075	6.01	N/A	N/A	N/A	137,636,784	137,636,784	137,636,784	137,636,784	137,636,784
2019	0	5.91	N/A	N/A	N/A	N/A	0	0	0	0
2020	0	5.86	N/A	N/A	N/A	N/A	N/A	0	0	0
Net increase (decrease) in pension expense			**$(20,668,159)**	**$(20,668,159)**	**$(20,668,159)**	**$116,968,625**	**$116,968,625**	**$116,968,625**	**$133,916,518**	**$137,636,784**

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30: 2023	2024	2025	2026	2027	2028	2029	2030
2015	$(127,729,220)	6.18	$0	$0	$0	$0	$0	$0	$0	$0
2016	0	6.06	0	0	0	0	0	0	0	0
2017	0	5.94	0	0	0	0	0	0	0	0
2018	827,197,075	6.01	137,636,784	1,376,371	0	0	0	0	0	0
2019	0	5.91	0	0	0	0	0	0	0	0
2020	0	5.86	0	0	0	0	0	0	0	0
Net increase (decrease) in pension expense			**$137,636,784**	**$1,376,371**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

As described in the Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources, for the current period, the average of the expected remaining service lives of all employees that are provided with pensions through OCERS (active and inactive employees) determined as of December 31, 2018 (the beginning of the measurement period ending December 31, 2019) is 5.86 years.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability (continued)

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 GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	$290,045,074	6.18	$58,009,015	$58,009,015	$58,009,015	$58,009,015	$58,009,014	$0	$0	$0
2016	851,007,781	6.06	N/A	170,201,555	170,201,555	170,201,555	170,201,555	170,201,561	0	0
2017	(213,982,570)	5.94	N/A	N/A	(42,796,514)	(42,796,514)	(42,796,514)	(42,796,514)	(42,796,514)	0
2018	(1,009,651,572)	6.01	N/A	N/A	N/A	(201,930,314)	(201,930,314)	(201,930,314)	(201,930,314)	(201,930,316)
2019	1,360,278,701	5.91	N/A	N/A	N/A	N/A	272,055,741	272,055,741	272,055,741	272,055,741
2020	(1,170,895,935)	5.86	N/A	N/A	N/A	N/A	N/A	(234,179,185)	(234,179,185)	(234,179,185)
Net increase (decrease) in pension expense			**$58,009,015**	**$228,210,570**	**$185,414,056**	**$(16,516,258)**	**$255,539,482**	**$(36,648,711)**	**$(206,850,272)**	**$(164,053,760)**

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2023	2024	2025	2026	2027	2028	2029	2030
2015	$290,045,074	6.18	$0	$0	$0	$0	$0	$0	$0	$0
2016	851,007,781	6.06	0	0	0	0	0	0	0	0
2017	(213,982,570)	5.94	0	0	0	0	0	0	0	0
2018	(1,009,651,572)	6.01	0	0	0	0	0	0	0	0
2019	1,360,278,701	5.91	272,055,737	0	0	0	0	0	0	0
2020	(1,170,895,935)	5.86	(234,179,185)	(234,179,195)	0	0	0	0	0	0
Net increase (decrease) in pension expense			**$37,876,552**	**$(234,179,195)**	**$0**	**$0**	**$0**	**$0**	**$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.

Section 2: GASB 68 Information

Schedule of recognition of changes in total Net Pension Liability (continued)

Total Increase (Decrease) in Pension Expense

Reporting Date for Employer Under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Reporting Date for Employer under GASB 68 Year Ended June 30: 2015	2016	2017	2018	2019	2020	2021	2022
2015	$(165,086,234)	$(15,636,828)	$(15,636,828)	$(15,636,828)	$(15,636,828)	$(15,636,829)	$(73,645,843)	$(13,256,250)	$0
2016	645,545,108	N/A	136,296,823	136,296,823	136,296,823	136,296,823	136,296,829	(33,904,732)	(2,034,281)
2017	(537,548,311)	N/A	N/A	(97,268,861)	(97,268,861)	(97,268,861)	(97,268,861)	(97,268,861)	(51,204,006)
2018	(249,418,100)	N/A	N/A	N/A	(75,435,559)	(75,435,559)	(75,435,559)	(75,435,559)	(75,435,561)
2019	1,242,154,300	N/A	N/A	N/A	N/A	252,068,535	252,068,535	252,068,535	252,068,535
2020	(1,146,513,024)	N/A	N/A	N/A	N/A	N/A	(230,018,280)	(230,018,280)	(230,018,280)
Net increase (decrease) in pension expense		**$(15,636,828)**	**$120,659,995**	**$23,391,134**	**$(52,044,425)**	**$200,024,109**	**$(88,003,179)**	**$(197,815,147)**	**$(106,623,593)**

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Reporting Date for Employer under GASB 68 Year Ended June 30: 2023	2024	2025	2026	2027	2028	2029	2030
2015	$(165,086,234)	$0	$0	$0	$0	$0	$0	$0	$0
2016	645,545,108	0	0	0	0	0	0	0	0
2017	(537,548,311)	0	0	0	0	0	0	0	0
2018	(249,418,100)	126,494,755	1,264,942	0	0	0	0	0	0
2019	1,242,154,300	252,068,531	(18,188,371)	0	0	0	0	0	0
2020	(1,146,513,024)	(230,018,280)	(230,018,280)	3,578,386	0	0	0	0	0
Net increase (decrease) in pension expense		**$148,545,006**	**$(246,941,719)**	**$3,578,386**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability

In addition to the amounts shown in the Schedule of Recognition of Changes in Total Net Pension Liability, there are changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ending on December 31, 2019. The net effect of the change in the employer's proportionate share of the collective NPL 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 December 31, 2019 is recognized over the same periods. These amounts are shown on the following table, with the corresponding amounts for the measurement periods ending on December 31 beginning in 2014 shown on the following pages. While these amounts are different for each employer, they sum to zero over the entire OCERS.

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2019

	Total Change to be Recognized	Recognition Period (Years)	2020	2021	2022	2023	2024	2025	Thereafter
Orange County	$(5,692,697)	5.86	$(971,449)	$(971,449)	$(971,449)	$(971,449)	$(971,449)	$(835,452)	$0
O.C. Cemetery District	0	5.86	0	0	0	0	0	0	0
O.C. Law Library	0	5.86	0	0	0	0	0	0	0
O.C. Vector Control District	0	5.86	0	0	0	0	0	0	0
O.C. Retirement System	2,634,131	5.86	449,510	449,510	449,510	449,510	449,510	386,581	0
O.C. Fire Authority	0	5.86	0	0	0	0	0	0	0
Cypress Recreation and Parks	0	5.86	0	0	0	0	0	0	0
Department of Education	0	5.86	0	0	0	0	0	0	0
Transportation Corridor Agency	0	5.86	0	0	0	0	0	0	0
City of San Juan Capistrano	(1,157,951)	5.86	(197,603)	(197,603)	(197,603)	(197,603)	(197,603)	(169,936)	0
O.C. Sanitation District	0	5.86	0	0	0	0	0	0	0
O.C. Transportation Authority	0	5.86	0	0	0	0	0	0	0
U.C.I.	0	5.86	0	0	0	0	0	0	0
O.C. Children and Families Comm.	(1,110,175)	5.86	(189,450)	(189,450)	(189,450)	(189,450)	(189,450)	(162,925)	0
Local Agency Formation Comm.	157,671	5.86	26,906	26,906	26,906	26,906	26,906	23,141	0
Rancho Santa Margarita	0	5.86	0	0	0	0	0	0	0
O.C. Superior Court	5,149,368	5.86	878,732	878,732	878,732	878,732	878,732	755,708	0
O.C. IHSS Public Authority	19,653	5.86	3,354	3,354	3,354	3,354	3,354	2,883	0
Total for all Employers	**$0**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2018

	Total Change to be Recognized	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	Thereafter
Orange County	$13,152,991	5.91	$2,225,549	$2,225,549	$2,225,549	$2,225,549	$2,225,549	$2,025,246	$0
O.C. Cemetery District	0	5.91	0	0	0	0	0	0	0
O.C. Law Library	0	5.91	0	0	0	0	0	0	0
O.C. Vector Control District	0	5.91	0	0	0	0	0	0	0
O.C. Retirement System	2,177,730	5.91	368,482	368,482	368,482	368,482	368,482	335,320	0
O.C. Fire Authority	0	5.91	0	0	0	0	0	0	0
Cypress Recreation and Parks	0	5.91	0	0	0	0	0	0	0
Department of Education	0	5.91	0	0	0	0	0	0	0
Transportation Corridor Agency	0	5.91	0	0	0	0	0	0	0
City of San Juan Capistrano	(142,910)	5.91	(24,181)	(24,181)	(24,181)	(24,181)	(24,181)	(22,005)	0
O.C. Sanitation District	0	5.91	0	0	0	0	0	0	0
O.C. Transportation Authority	0	5.91	0	0	0	0	0	0	0
U.C.I.	0	5.91	0	0	0	0	0	0	0
O.C. Children and Families Comm.	(361,087)	5.91	(61,098)	(61,098)	(61,098)	(61,098)	(61,098)	(55,597)	0
Local Agency Formation Comm.	13,795	5.91	2,334	2,334	2,334	2,334	2,334	2,125	0
Rancho Santa Margarita	0	5.91	0	0	0	0	0	0	0
O.C. Superior Court	(14,826,827)	5.91	(2,508,769)	(2,508,769)	(2,508,769)	(2,508,769)	(2,508,769)	(2,282,982)	0
O.C. IHSS Public Authority	(13,692)	5.91	(2,317)	(2,317)	(2,317)	(2,317)	(2,317)	(2,107)	0
Total for all Employers	**$0**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2017

	Total Change to be Recognized	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	Thereafter
Orange County	$8,107,013	6.01	$1,348,921	$1,348,921	$1,348,921	$1,348,921	$1,348,921	$1,348,921	$13,487
O.C. Cemetery District	0	6.01	0	0	0	0	0	0	0
O.C. Law Library	0	6.01	0	0	0	0	0	0	0
O.C. Vector Control District	0	6.01	0	0	0	0	0	0	0
O.C. Retirement System	49,770	6.01	8,281	8,281	8,281	8,281	8,281	8,281	84
O.C. Fire Authority	0	6.01	0	0	0	0	0	0	0
Cypress Recreation and Parks	0	6.01	0	0	0	0	0	0	0
Department of Education	0	6.01	0	0	0	0	0	0	0
Transportation Corridor Agency	0	6.01	0	0	0	0	0	0	0
City of San Juan Capistrano	1,675,195	6.01	278,735	278,735	278,735	278,735	278,735	278,735	2,785
O.C. Sanitation District	0	6.01	0	0	0	0	0	0	0
O.C. Transportation Authority	0	6.01	0	0	0	0	0	0	0
U.C.I.	0	6.01	0	0	0	0	0	0	0
O.C. Children and Families Comm.	(445,507)	6.01	(74,128)	(74,128)	(74,128)	(74,128)	(74,128)	(74,128)	(739)
Local Agency Formation Comm.	(51,088)	6.01	(8,500)	(8,500)	(8,500)	(8,500)	(8,500)	(8,500)	(88)
Rancho Santa Margarita	0	6.01	0	0	0	0	0	0	0
O.C. Superior Court	(9,400,312)	6.01	(1,564,112)	(1,564,112)	(1,564,112)	(1,564,112)	(1,564,112)	(1,564,112)	(15,640)
O.C. IHSS Public Authority	64,929	6.01	10,803	10,803	10,803	10,803	10,803	10,803	111
Total for all Employers	**$0**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2016

	Total Change to be Recognized	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	Thereafter
Orange County	$14,453,662	5.94	$2,433,278	$2,433,278	$2,433,278	$2,433,278	$2,433,278	$2,287,272	$0
O.C. Cemetery District	0	5.94	0	0	0	0	0	0	0
O.C. Law Library	0	5.94	0	0	0	0	0	0	0
O.C. Vector Control District	0	5.94	0	0	0	0	0	0	0
O.C. Retirement System	(668,539)	5.94	(112,549)	(112,549)	(112,549)	(112,549)	(112,549)	(105,794)	0
O.C. Fire Authority	0	5.94	0	0	0	0	0	0	0
Department of Education	0	5.94	0	0	0	0	0	0	0
Transportation Corridor Agency	0	5.94	0	0	0	0	0	0	0
City of San Juan Capistrano	(1,754,991)	5.94	(295,453)	(295,453)	(295,453)	(295,453)	(295,453)	(277,726)	0
O.C. Sanitation District	0	5.94	0	0	0	0	0	0	0
O.C. Transportation Authority	0	5.94	0	0	0	0	0	0	0
U.C.I.	0	5.94	0	0	0	0	0	0	0
O.C. Children and Families Comm.	(598,916)	5.94	(100,828)	(100,828)	(100,828)	(100,828)	(100,828)	(94,776)	0
Local Agency Formation Comm.	306,180	5.94	51,545	51,545	51,545	51,545	51,545	48,455	0
Rancho Santa Margarita	0	5.94	0	0	0	0	0	0	0
O.C. Superior Court	(11,785,507)	5.94	(1,984,092)	(1,984,092)	(1,984,092)	(1,984,092)	(1,984,092)	(1,865,047)	0
O.C. IHSS Public Authority	48,111	5.94	8,099	8,099	8,099	8,099	8,099	7,616	0
Total for all Employers	**$0**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2015

	Total Change to be Recognized	Recognition Period (Years)	2016	2017	2018	2019	2020	2021	Thereafter
Orange County	$2,736,401	6.06	$451,552	$451,552	$451,552	$451,552	$451,552	$451,552	$27,089
O.C. Cemetery District	0	6.06	0	0	0	0	0	0	0
O.C. Law Library	(2,567,707)	6.06	(423,714)	(423,714)	(423,714)	(423,714)	(423,714)	(423,714)	(25,423)
O.C. Vector Control District	0	6.06	0	0	0	0	0	0	0
O.C. Retirement System	1,607,456	6.06	265,257	265,257	265,257	265,257	265,257	265,257	15,914
O.C. Fire Authority	0	6.06	0	0	0	0	0	0	0
Department of Education	0	6.06	0	0	0	0	0	0	0
Transportation Corridor Agency	0	6.06	0	0	0	0	0	0	0
City of San Juan Capistrano	(1,987,430)	6.06	(327,959)	(327,959)	(327,959)	(327,959)	(327,959)	(327,959)	(19,676)
O.C. Sanitation District	2,567,707	6.06	423,714	423,714	423,714	423,714	423,714	423,714	25,423
O.C. Transportation Authority	0	6.06	0	0	0	0	0	0	0
U.C.I.	0	6.06	0	0	0	0	0	0	0
O.C. Children and Families Comm.	(366,436)	6.06	(60,468)	(60,468)	(60,468)	(60,468)	(60,468)	(60,468)	(3,628)
Local Agency Formation Comm.	(296,484)	6.06	(48,925)	(48,925)	(48,925)	(48,925)	(48,925)	(48,925)	(2,934)
Rancho Santa Margarita	0	6.06	0	0	0	0	0	0	0
O.C. Superior Court	(1,805,959)	6.06	(298,013)	(298,013)	(298,013)	(298,013)	(298,013)	(298,013)	(17,881)
O.C. IHSS Public Authority	112,452	6.06	18,556	18,556	18,556	18,556	18,556	18,556	1,116
Total for all Employers	**$0**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 2: GASB 68 Information

Allocation of changes in total Net Pension Liability (continued)

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2014

	Total Change to be Recognized	Recognition Period (Years)	2015	2016	2017	2018	2019	2020	Thereafter
Orange County	$4,834,533	6.18	$782,287	$782,287	$782,287	$782,287	$782,287	$782,287	$140,811
O.C. Cemetery District	0	6.18	0	0	0	0	0	0	0
O.C. Law Library	316,450	6.18	51,206	51,206	51,206	51,206	51,206	51,206	9,214
O.C. Vector Control District	0	6.18	0	0	0	0	0	0	0
O.C. Retirement System	1,077,481	6.18	174,350	174,350	174,350	174,350	174,350	174,350	31,381
O.C. Fire Authority	0	6.18	0	0	0	0	0	0	0
Department of Education	0	6.18	0	0	0	0	0	0	0
Transportation Corridor Agency	0	6.18	0	0	0	0	0	0	0
City of San Juan Capistrano	1,656,769	6.18	268,086	268,086	268,086	268,086	268,086	268,086	48,253
O.C. Sanitation District	(316,450)	6.18	(51,206)	(51,206)	(51,206)	(51,206)	(51,206)	(51,206)	(9,214)
O.C. Transportation Authority	0	6.18	0	0	0	0	0	0	0
U.C.I.	0	6.18	0	0	0	0	0	0	0
O.C. Children and Families Comm.	(332,329)	6.18	(53,775)	(53,775)	(53,775)	(53,775)	(53,775)	(53,775)	(9,679)
Local Agency Formation Comm.	215,036	6.18	34,795	34,795	34,795	34,795	34,795	34,795	6,266
Rancho Santa Margarita	0	6.18	0	0	0	0	0	0	0
O.C. Superior Court	(7,470,106)	6.18	(1,208,755)	(1,208,755)	(1,208,755)	(1,208,755)	(1,208,755)	(1,208,755)	(217,576)
O.C. IHSS Public Authority	18,616	6.18	3,012	3,012	3,012	3,012	3,012	3,012	544
Total for all Employers	**$0**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Section 3: Actuarial Assumptions and Methods and Appendices

Actuarial assumptions and methods

For December 31, 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 January 1, 2014 through December 31, 2016 Actuarial Experience Study dated August 14, 2017 and PowerPoint presentation dated October 16, 2017. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.

Economic Assumptions

Net Investment Return: 7.00%; net of investment expenses.

Member Contribution Crediting Rate: 5.00%, compounded semi-annually.

Consumer Price Index: Increase of 2.75% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.

Payroll Growth: Inflation of 2.75% per year plus “across the board” real salary increases of 0.50% per year.

Increase in Section 7522.10 Compensation Limit: Increase of 2.75% per year from the valuation date.

Section 3: Actuarial Assumptions and Methods and Appendices

Salary increases: Inflation: 2.75% per year; plus "across the board" real salary increases of 0.50% per year; plus the following merit and promotion increases.

Annual Rate of Compensation Increase

Rate (%)

Years of Service	General	Safety
Less than 1	9.50	9.00
1 – 2	7.00	5.50
2 – 3	4.75	4.00
3 – 4	4.25	3.80
4 – 5	4.00	3.70
5 – 6	3.50	3.60
6 – 7	3.25	3.50
7 – 8	3.00	3.25
8 – 9	2.50	3.00
9 – 10	2.00	2.75
10 – 11	1.75	2.25
11 – 12	1.50	2.00
12 – 13	1.45	1.90
13 – 14	1.40	1.85
14 – 15	1.35	1.80
15 – 16	1.30	1.75
16 – 17	1.30	1.70
17 – 18	1.30	1.65
18 – 19	1.30	1.60
19 – 20	1.30	1.55
20 & Over	1.30	1.50

In addition to the individual salary increase assumptions, we have applied an average of two hours of additional salary annually for leap-year salary adjustment.

Section 3: Actuarial Assumptions and Methods and Appendices

Demographic assumptions

Post — retirement mortality rates

Healthy

- **For General Members and All Beneficiaries:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale.
- **For Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale, setback four years.

Disabled

- **For General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale, set forward five years,
- **For Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale.

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

Mortality rates — member contribution rates

- **For General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 40% male and 60% female.
- **For Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, setback four years, weighted 80% male and 20% female.

Section 3: Actuarial Assumptions and Methods and Appendices

Mortality rates — optional forms of benefits

- **For General Service Retirees:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 40% male and 60% female.
- **For Safety Service Retirees:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, setback four years, weighted 80% male and 20% female.
- **For General Disabled Retirees:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, set forward five years, weighted 40% male and 60% female.
- **For Safety Disabled Retirees:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 80% male and 20% female.
- **For General Beneficiaries:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 60% male and 40% female.
- **For Safety Beneficiaries:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 20% male and 80% female.

Pre-retirement mortality rates

- **For General and Safety Members**: Headcount-Weighted RP-2014 Employee Mortality Table times 80%, projected generationally with the two-dimensional MP-2016 projection scale.

Section 3: Actuarial Assumptions and Methods and Appendices

Termination rates before retirement

Mortality (General and Safety)

Rate (%)

Age	Male	Female
25	0.05	0.02
30	0.05	0.02
35	0.05	0.03
40	0.06	0.04
45	0.10	0.07
50	0.17	0.11
55	0.27	0.17
60	0.45	0.24
65	0.78	0.36
70	1.27	0.59

Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates.

All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected. The other 10% are assumed to be service connected.

Section 3: Actuarial Assumptions and Methods and Appendices

Disability

Rate (%)

Age	General All Other[1]	General OCTA[2]	Safety — Law & Fire[3]	Safety — Probation[4]
25	0.00	0.00	0.00	0.00
30	0.00	0.00	0.01	0.03
35	0.01	0.03	0.04	0.08
40	0.03	0.20	0.14	0.10
45	0.08	0.36	0.23	0.13
50	0.13	0.43	0.40	0.21
55	0.18	0.48	1.10	0.28
60	0.23	0.65	2.40	0.42
65	0.31	1.26	4.80	0.20
70	0.00	0.00	0.00	0.00

[1] 60% of General All Other disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected.
[2] 65% of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.
[3] 100% of Safety Law Enforcement and Fire disabilities are assumed to be service connected disabilities.
[4] 75% of Safety Probation disabilities are assumed to be service connected disabilities. The other 25% are assumed to be non-service connected.

Section 3: Actuarial Assumptions and Methods and Appendices

Termination

Rate (%)

Years of Service	General All Other	General OCTA	Safety — Law & Fire	Safety — Probation
Less than 1	11.00	17.50	4.50	14.00
1 – 2	7.50	11.00	2.50	13.00
2 – 3	6.50	9.00	2.00	10.00
3 – 4	5.00	8.50	1.50	5.00
4 – 5	4.50	7.50	1.25	4.00
5 – 6	4.25	7.00	1.00	3.50
6 – 7	3.75	4.50	0.95	2.75
7 – 8	3.25	4.00	0.90	2.00
8 – 9	3.00	3.50	0.85	2.00
9 – 10	2.75	3.00	0.80	1.75
10 – 11	2.50	3.00	0.75	1.75
11 – 12	2.00	3.00	0.65	1.50
12 – 13	2.00	3.00	0.60	1.25
13 – 14	1.75	2.50	0.55	1.00
14 – 15	1.50	2.50	0.50	0.75
15 – 16	1.40	2.50	0.45	0.75
16 – 17	1.30	2.00	0.40	0.75
17 – 18	1.20	1.80	0.35	0.25
18 – 19	1.10	1.60	0.30	0.25
19 – 20	1.00	1.40	0.25	0.25
20 & Over	0.90	1.20	0.20	0.25

Section 3: Actuarial Assumptions and Methods and Appendices

Election for Withdrawal of Contributions

Rate (%)

Age	General All Other	General OCTA	Safety — Law & Fire	Safety — Probation
0 – 4	35.0	40.0	20.0	25.0
5 – 9	30.0	35.0	20.0	25.0
10 – 14	25.0	30.0	20.0	25.0
15 & Over	20.0	20.0	20.0	25.0

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement Rates

Rate (%)

Age	General — Enhanced	General — Non-Enhanced[1]	General — SJC (31676.12)	Safety — Law (31664.1)[2]	Safety — Law (31664.2)[2]	Safety — Fire (31664.1)	Safety — Fire (31664.2)	Safety — Probation[2]
48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	30.00	25.00	0.00	12.00	0.00	2.00	0.00	0.00
50	2.50	2.00	3.00	18.00	11.50	5.00	8.00	3.25
51	2.00	2.00	3.00	18.00	12.00	7.00	10.00	3.25
52	2.50	2.00	3.00	17.00	12.70	9.50	11.00	4.25
53	2.50	2.75	3.00	17.00	17.90	10.50	12.00	4.25
54	5.50	2.75	3.00	22.00	18.80	15.00	14.00	7.00
55	15.00	3.25	4.00	22.00	30.70	18.00	24.00	12.00
56	10.00	3.50	5.00	20.00	20.00	20.00	23.00	12.00
57	10.00	5.50	6.00	20.00	20.00	21.00	27.00	18.00
58	11.00	5.50	7.00	20.00	25.00	28.00	27.00	18.00
59	11.00	6.50	9.00	26.00	30.00	28.00	36.00	18.00
60	12.00	9.25	11.00	35.00	40.00	30.00	40.00	20.00
61	12.00	12.00	13.00	35.00	40.00	30.00	40.00	20.00
62	14.00	16.00	15.00	40.00	40.00	35.00	40.00	25.00
63	16.00	16.00	15.00	40.00	40.00	35.00	40.00	40.00
64	16.00	18.00	20.00	40.00	40.00	35.00	40.00	40.00
65	22.00	22.00	20.00	100.00	100.00	100.00	100.00	100.00
66	22.00	28.00	24.00	100.00	100.00	100.00	100.00	100.00
67	23.00	24.00	24.00	100.00	100.00	100.00	100.00	100.00
68	23.00	24.00	24.00	100.00	100.00	100.00	100.00	100.00
69	23.00	20.00	24.00	100.00	100.00	100.00	100.00	100.00
70	25.00	20.00	50.00	100.00	100.00	100.00	100.00	100.00
71	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
72	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
73	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
74	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

1 These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).
2 Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement Rates

Rate (%)

Age	CalPEPRA 2.5% @ 67 General Formula	CalPEPRA Safety Formula — Probation[1]	CalPEPRA Safety Formula — Law[1]	CalPEPRA Safety Formula — Fire
50	0.00	2.50	11.00	6.00
51	0.00	2.50	11.50	7.00
52	4.00	3.00	12.00	9.00
53	1.50	3.00	16.00	10.00
54	1.50	5.50	17.00	11.50
55	2.50	10.00	28.00	21.00
56	3.50	10.00	18.00	20.00
57	5.50	15.00	17.50	22.00
58	7.50	20.00	22.00	25.00
59	7.50	20.00	26.00	30.00
60	7.50	40.00	40.00	40.00
61	7.50	40.00	40.00	40.00
62	14.00	40.00	40.00	40.00
63	14.00	40.00	40.00	40.00
64	14.00	40.00	40.00	40.00
65	18.00	100.00	100.00	100.00
66	22.00	100.00	100.00	100.00
67	23.00	100.00	100.00	100.00
68	23.00	100.00	100.00	100.00
69	23.00	100.00	100.00	100.00
70	25.00	100.00	100.00	100.00
71	25.00	100.00	100.00	100.00
72	25.00	100.00	100.00	100.00
73	25.00	100.00	100.00	100.00
74	25.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00

[1] Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement Age and Benefit for Deferred Vested Members:

General Retirement Age: 59

Safety Retirement Age: 53

Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit.

15% of future General and 25% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 4.25% and 4.75% compensation increases are assumed per annum for General and Safety, respectively.

Liability Calculation for Current Deferred Vested Members: Liability for a current deferred vested member is calculated based on salary (adjusted with the additional cashout assumptions for non-CalPEPRA members), service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have 3 or more years of service, we used an average salary. For those members without salary information that have less than 3 years of service or for those members without service information, we assumed a refund of account balance.

Future Benefit Accruals: 1.0 year of service per year of employment. There is no assumption to anticipate conversion of unused sick leave at retirement.

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 members are assumed to elect the unmodified option at retirement.

Percent Married: For all active and inactive members, 75% of male members and 55% of female members are assumed to be married at retirement or time of pre-retirement death.

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 3 years older than the member.

Section 3: Actuarial Assumptions and Methods and Appendices

Terminal Pay Assumptions:

Non-CalPEPRA Formulas

Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages used in this valuation are:

	Final One Year Salary	Final Three Year Salary
General Members	3.00%	2.80%
Safety - Probation	3.80%	3.40%
Safety - Law	5.20%	4.60%
Safety - Fire	2.00%	1.70%

The terminal pay assumptions are the same for service and disability retirements.

CalPEPRA Formulas

None

Actuarial Methods

Actuarial Cost Method:

Entry Age Actuarial Cost Method. Entry Age is the current age minus Vesting Credit. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formula for each individual has always been in effect (i.e., "replacement life within a tier").

Please note that for Probation members who have prior benefit service in another General OCERS plan, the normal cost rate for the current plan is calculated assuming their Entry Age is the date they entered service with their current plan.

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.

Changes in Actuarial Assumptions and Methods:

None.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix A: Projection of Plan's Fiduciary Net Position for Use in the Calculation of Discount Rate as of December 31, 2019 ($ in millions)

Year Beginning January 1	Projected Beginning Plan's Fiduciary Net Position (a)	Projected Total Contributions * (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan's Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2019	$14,482	$933	$901	$19	$2,184	$16,679
2020	16,679	976	971	22	1,167	17,829
2021	17,829	972	1,031	24	1,245	18,992
2022	18,992	969	1,094	25	1,324	20,167
2023	20,167	974	1,159	27	1,404	21,359
2024	21,359	958	1,227	28	1,485	22,547
2025	22,547	964	1,296	30	1,566	23,752
2026	23,752	972	1,368	31	1,648	24,972
2027	24,972	979	1,441	33	1,731	26,208
2028	26,208	987	1,516	35	1,815	27,460
2044	37,085	191	2,721	49	2,507	37,014
2045	37,014	181	2,773	49	2,500	36,873
2046	36,873	170	2,820	49	2,488	36,663
2047	36,663	160	2,862	49	2,472	36,384
2048	36,384	153	2,894	48	2,451	36,045
2093	23,410	48	252	31	1,631	24,805
2094	24,805	48	209	33	1,730	26,342
2095	26,342	49	171	35	1,839	28,023
2096	28,023	49	138	37	1,957	29,855
2097	29,855	50	110	40	2,086	31,843
2133	337,557	447	0 **	447	23,629	361,186
2134	361,186					
2134 Discounted Value:	161 ***					

* Of all the projected total contributions, only the first year's (i.e., 2019) contribution has been reduced by discount for prepaid contributions and transfers from County Investment Account, if any.

** Less than $1 million, when rounded.

*** $361,186 million when discounted with interest at the rate of 7.00% per annum has a value of $161 million as of December 31, 2019. Of this amount, about $150 million is the balance available in the County Investment Account and $12 million is the O.C. Sanitation District UAAL Deferred Acount as of December 31, 2019.

Note: We have not utilized the balance in the County Investment Account to reduce the projected total contributions in column (b) even though those amounts have been used to reduce the NPL for the County as of December 31, 2019.

Section 3: Actuarial Assumptions and Methods and Appendices

Notes:

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

(2) Amounts shown in the year beginning January 1, 2019 row are actual amounts, based on the financial statements provided by OCERS.

(3) Years 2029-2043, 2049-2092, and 2098-2132 have been omitted from this table.

(4) Column (a): Except for the "discounted value" shown for 2134, all of the projected beginning Plan's Fiduciary Net Position amounts shown have not been adjusted for the time value of money.

(5) Column (b): Projected total contributions include member and employer normal cost rates applied to closed group projected payroll (based on covered active members as of December 31, 2018), plus employer contributions to the Unfunded Actuarial Accrued Liability. Contributions are assumed to occur halfway through the year, on average.

(6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of December 31, 2018. The projected benefit payments reflect the cost of living increase assumptions used in the December 31, 2019 valuation report. The 2019 benefit payments have been increased by the balance of the Medicare Insurance Reserve as of December 31, 2019.

(7) Column (d): Projected administrative expenses are calculated as approximately 0.13% of the projected beginning Plan's Fiduciary Net Position amount. The 0.13% portion was based on the actual calendar year 2019 administrative expenses (unaudited) as a percentage of the actual beginning Plan's Fiduciary Net Position as of January 1, 2019. Administrative expenses are assumed to occur halfway through the year, on average.

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

(9) As illustrated in this Appendix, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the total pension liability as of December 31, 2019 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix B: Schedule of Pension Amounts by Employer as of December 31, 2019

Deferred Outflows of Resources	Orange County	O.C. Cemetery District	O.C. Law Library	O.C. Vector Control District	O.C. Retirement System
• Differences Between Expected and Actual Experience	$13,982,779	$103,588	$43,407	$170,770	$0
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	587,160,184	556,607	580,153	1,491,917	3,773,899
• Changes of Assumptions	322,870,826	244,428	214,778	435,411	2,018,023
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	18,170,596	0	9,214	0	3,962,866
• **Total Deferred Outflows of Resources**	**$942,184,385**	**$904,623**	**$847,552**	**$2,098,098**	**$9,754,788**
Deferred Inflows of Resources					
• Differences Between Expected and Actual Experience	$206,914,979	$582,255	$409,176	$1,511,789	$1,273,114
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	997,095,584	911,694	921,702	2,404,780	6,362,377
• Changes of Assumptions	6,642,961	5,895	30,514	0	62,731
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	4,789,699	0	449,137	0	218,343
• **Total Deferred Inflows of Resources**	**$1,215,443,223**	**$1,499,844**	**$1,810,529**	**$3,916,569**	**$7,916,565**
Net Pension Liability as of December 31, 2018	$4,918,576,912	$962,119	$573,252	$2,492,695	$28,844,760
Net Pension Liability as of December 31, 2019	$4,124,212,240	$(228,119)	$(74,515)	$(625,500)	$26,824,264
• **Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**					
• Proportionate Share of Allocable Plan Pension Expense	$449,535,284	$127,197	$232,335	$(351,264)	$2,317,279
• Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,270,138	0	(372,508)	0	1,153,331
• **Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**	**$455,805,422**	**$127,197**	**$(140,173)**	**$(351,264)**	**$3,470,610**

Section 3: Actuarial Assumptions and Methods and Appendices

Deferred Outflows of Resources	O.C. Fire Authority	Cypress Recreation and Parks	Department of Education	Transportation Corridor Agency	City of San Juan Capistrano
• Differences Between Expected and Actual Experience	$24,478,887	$2,252,572	$380,618	$615,484	$0
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	85,355,117	211,982	540,022	1,872,077	3,684,941
• Changes of Assumptions	29,267,911	70,336	177,787	880,388	1,970,455
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	0	0	0	887,243
• **Total Deferred Outflows of Resources**	**$139,101,915**	**$2,534,890**	**$1,098,427**	**$3,367,949**	**$6,542,639**
Deferred Inflows of Resources					
• Differences Between Expected and Actual Experience	$38,937,675	$0	$678,741	$940,190	$1,243,105
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	144,282,784	1,844,790	858,174	3,760,486	6,212,405
• Changes of Assumptions	130,986	0	10,085	28,116	61,252
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	0	0	0	1,975,710
• **Total Deferred Inflows of Resources**	**$183,351,445**	**$1,844,790**	**$1,547,000**	**$4,728,792**	**$9,492,472**
Net Pension Liability as of December 31, 2018	$466,731,526	$408,781	$3,517,372	$13,253,632	$32,142,058
Net Pension Liability as of December 31, 2019	$354,395,457	$262,415	$3,099,339	$(1,753,164)	$26,191,970
• **Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**					
• Proportionate Share of Allocable Plan Pension Expense	$67,124,196	$4,345	$271,328	$1,376,160	$2,262,657
• Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	0	0	0	(298,375)
• **Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**	**$67,124,196**	**$4,345**	**$271,328**	**$1,376,160**	**$1,964,282**

Section 3: Actuarial Assumptions and Methods and Appendices

Deferred Outflows of Resources	O.C. Sanitation District	O.C. Transportation Authority	U.C.I.	O.C. Children and Families Comm.	Local Agency Formation Comm.
• Differences Between Expected and Actual Experience	$9,606,499	$2,331,117	$1,790,493	$0	$0
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	39,421,678	39,326,279	4,449,052	(90,952)	209,577
• Changes of Assumptions	12,311,067	21,920,909	1,425,191	(48,635)	112,068
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	449,137	0	0	0	246,158
• **Total Deferred Outflows of Resources**	**$61,788,381**	**$63,578,305**	**$7,664,736**	**$(139,587)**	**$567,803**
Deferred Inflows of Resources					
• Differences Between Expected and Actual Experience	$5,416,832	$21,768,391	$2,432,087	$(30,682)	$70,700
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	64,842,567	66,279,519	7,119,985	(153,335)	353,324
• Changes of Assumptions	372,978	595,454	79,608	(1,512)	3,484
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	9,214	0	0	1,652,118	77,447
• **Total Deferred Inflows of Resources**	**$70,641,591**	**$88,643,364**	**$9,631,680**	**$1,466,589**	**$504,955**
Net Pension Liability as of December 31, 2018	$29,029,145	$269,788,642	$34,808,679	$630,610	$1,582,703
Net Pension Liability as of December 31, 2019	$(49,446,617)	$224,284,548	$30,213,739	$(646,472)	$1,489,642
• **Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**					
• Proportionate Share of Allocable Plan Pension Expense	$10,009,584	$26,336,223	$2,168,623	$(55,847)	$128,686
• Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	372,508	0	0	(539,747)	58,155
• **Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**	**$10,382,092**	**$26,336,223**	**$2,168,623**	**$(595,594)**	**$186,841**

Section 3: Actuarial Assumptions and Methods and Appendices

Deferred Outflows of Resources	Rancho Santa Margarita	O.C. Superior Court	O.C. IHSS Public Authority	Total for all Employers
• Differences Between Expected and Actual Experience	$1,242	$0	$0	$55,757,456
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	3,008	47,379,540	243,386	816,168,467
• Changes of Assumptions	480	25,335,345	173,542	419,380,310
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	4,270,636	84,750	28,080,600
• **Total Deferred Outflows of Resources**	**$4,730**	**$76,985,521**	**$501,678**	**$1,319,386,833**
Deferred Inflows of Resources				
• Differences Between Expected and Actual Experience	$5,388	$15,983,355	$237,210	$298,374,305
• Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	5,535	79,876,681	396,090	1,383,375,142
• Changes of Assumptions	29	787,559	3,713	8,813,853
• Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	18,899,874	9,058	28,080,600
• **Total Deferred Inflows of Resources**	**$10,952**	**$115,547,469**	**$646,071**	**$1,718,643,900**
Net Pension Liability as of December 31, 2018	$1,284	$392,760,910	$1,097,009	$6,197,202,089
Net Pension Liability as of December 31, 2019	$(2,214)	$336,766,149	$719,301	$5,075,682,463
• **Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**				
• Proportionate Share of Allocable Plan Pension Expense	$(95)	$29,092,356	$169,172	$590,748,219
• Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	0	(6,685,009)	41,507	0
• **Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions**	**$(95)**	**$22,407,347**	**$210,679**	**$590,748,219**

Section 3: Actuarial Assumptions and Methods and Appendices

Notes:

Amounts shown in this Appendix were allocated by employer based on the Employer Allocation Percentage calculated in the Schedule of Determination of Proportionate Share in this report.

In determining the pension expense:

- Any differences between projected and actual investment earnings on pension plan investments are recognized over a period of five years beginning with the year in which they occur.
- Current-period (i.e., 2019) differences between expected and actual experience and changes of assumptions are recognized over the average of the expected remaining service lives of all employees that are provided with pensions through OCERS determined as of December 31, 2018 (the beginning of the measurement period ending December 31, 2019) and is 5.86
- Prior-period differences between expected and actual experience and changes of assumptions are continued to be recognized based on the expected remaining service lives of all employees calculated as of those prior measurement dates.

The average of the expected remaining service lives of all employees was 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 members.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

There was a decrease in the total employer pension expense from $783.7 million calculated last year to $590.7 million calculated this year. The primary cause of the decrease was due to an investment gain of $1.2 billion with $234.2 million being recognized in this year's expense.

Note: Results may not total due to rounding.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix C: Definition of Terms

Definitions of certain terms as they are used in Statement 68. 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.
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).
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.
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.

Section 3: Actuarial Assumptions and Methods and Appendices

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 of members that are provided with pensions through the pension plan.
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.)
Defined Contribution Pension Plans	Pension plans that are used to provide defined contribution pensions.
Defined Contribution Pensions	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount Rate	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan's Fiduciary Net Position is projected (under the requirements of Statement 67) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
Entry Age Actuarial Cost Method	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the *normal cost.* The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the *actuarial accrued liability.*

Section 3: Actuarial Assumptions and Methods and Appendices

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.
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.
Pension Plans	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed, and benefits are paid as they come due.
Pensions	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan Members	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment	The period after employment.
Postemployment Benefit Changes	Adjustments to the pension of an inactive employee.
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.
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.

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Via Email

June 2, 2020

Mr. Steve Delaney
Chief Executive Officer
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701-3101

Re: Orange County Employees Retirement System (OCERS)
Reconciliation of the Plan's December 31, 2019 Net Pension Liability (NPL) and Unfunded Actuarial Accrued Liability (UAAL)

Dear Steve:

We have been requested by the Retirement System to reconcile, for each Rate Group, the December 31, 2019 Net Pension Liability (NPL) and the Unfunded Actuarial Accrued Liability (UAAL) as shown in the December 31, 2019 Governmental Accounting Standards Board (GASB) Statement 67 addendum letter and funding valuation report, respectively. (The breakdown of the NPL as disclosed in the GASB 67 addendum letter also appears in our GASB 68 financial report.)

The reconciliation is provided in Attachment A of this letter. The difference between the NPL and the UAAL is a direct result of the different liability and asset values we used in those developments.

Liability

The Total Pension Liability (TPL) shown in the GASB 67 addendum letter was measured based on the December 31, 2018 demographic data by: (i) rolling forward the liability from December 31, 2018 to December 31, 2019 and (ii) assuming that the actuarial experience of the System would match with that anticipated by the demographic assumptions. On the other hand, the Actuarial Accrued Liability (AAL) shown in the funding valuation report was measured based on the December 31, 2019 demographic data.

The differences between the TPL and the AAL were primarily due to: (a) actuarial gains/losses on the liability items as documented in Section 4, Exhibit VI of the December 31, 2019 funding valuation report for each Rate Group and (b) differences between the rolled forward liabilities and the actual liabilities.

Assets

The Plan Fiduciary Net Position shown in the GASB 67 report as of December 31, 2019 (that we subsequently used for our GASB 67 addendum letter) was based on the plan's Market Value of Assets (MVA) including the proceeds available in the County Investment Account and O.C. Sanitation District (OCSD) UAAL Deferred Account. On the other hand, the funding valuation report used the Valuation Value of Assets (VVA) after adjusting the MVA for asset smoothing and excluding the non-valuation reserve.

The differences between the Plan Fiduciary Net Position and the VVA were primarily due to adjustment of deferred investment gain and the non-valuation reserve.

The NPL and UAAL were calculated by taking the TPL and the AAL and subtracting the Plan Fiduciary Net Position and the VVA, respectively.

The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standard of the American Academy of Actuaries to render the actuarial opinion contained herein.

Please let us know if you have any questions or comments.

Sincerely,

Andy Yeung

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

JY/hy
Enclosures

cc: Tracy Bowman
Brenda Shott

Segal

Attachment A

All Rate Groups (Results are as of December 31, 2019)

(A) Liability Reconciliation	Rate Group #1	Rate Group #2	Rate Group #3	Rate Group #4
(1) Total Pension Liability Included in the development of the GASB 67 Addendum Letter	$520,222,888	$12,028,396,063	$745,022,205	$47,220
(2) (Gain)/Loss from (Lower)/Higher than Expected Salary Increases[1]	(7,606,000)	(57,650,000)	4,962,000	0
(3) (Gain)/Loss from (Lower)/Higher than Expected COLA Increases[1]	2,862,000	72,274,000	4,887,000	1,000
(4) Other Experience (Gain)/Loss[1]	(2,688,000)	55,487,000	4,832,000	0
(5) Other (Gain)/Loss from Rolled Forward Liabilities to Actual Liabilities	108,112	3,987,937	5,795	(220)
(6) Actuarial Accrued Liability Included in the Funding Valuation Report (1) + (2) + (3) + (4) + (5)	**$512,899,000**	**$12,102,496,000**	**$759,709,000**	**$48,000**
(B) Asset Reconciliation				
(1) Market Value of Assets Excluding County Investment Account and OCSD UAAL Deferred Account	$435,927,060	$8,804,215,164	$782,411,822	$49,434
(2) County Investment Account and OCSD UAAL Deferred Account	5,558,363	92,443,896	12,057,000	0
(3) Plan's Fiduciary Net Position Included in the development of the GASB 67 Addendum Letter (1) + (2)	$441,485,423	$8,896,659,060	$794,468,822	$49,434
(4) Adjustment for Deferred Investment Return and Non-Valuation Reserve	(12,649,060)	(255,467,164)	(22,702,822)	(1,434)
(5) Valuation of Assets Included in the Funding Valuation Report (1) + (4)	**$423,278,000**	**$8,548,748,000**	**$759,709,000**	**$48,000**
Net Pension Liability Shown in the GASB 67 Addendum Letter (A1) - (B3)	**$78,737,465**	**$3,131,737,003**	**$(49,446,617)**	**$(2,214)**
Unfunded Actuarial Accrued Liability Shown in the Funding Valuation Report (A6) - (B5)	**$89,621,000**	**$3,553,748,000**	**$0**	**$0**

[1] These actuarial gain/loss items can be found in Section 4, Exhibit VI of our December 31, 2019 funding valuation report.

Attachment A (continued)

All Rate Groups (Results are as of December 31, 2019)

(A) Liability Reconciliation	Rate Group #5	Rate Group #9	Rate Group #10	Rate Group #11
(1) Total Pension Liability Included in the development of the GASB 67 Addendum Letter	$1,010,087,777	$52,259,080	$257,504,904	$11,000,702
(2) (Gain)/Loss from (Lower)/Higher than Expected Salary Increases[1]	(3,953,000)	168,000	1,951,000	(39,000)
(3) (Gain)/Loss from (Lower)/Higher than Expected COLA Increases[1]	6,575,000	303,000	2,285,000	42,000
(4) Other Experience (Gain)/Loss[1]	(922,000)	79,000	2,907,000	547,000
(5) Other (Gain)/Loss from Rolled Forward Liabilities to Actual Liabilities	400,223	8,920	(23,904)	298
(6) Actuarial Accrued Liability Included in the Funding Valuation Report (1) + (2) + (3) + (4) + (5)	**$1,012,188,000**	**$52,818,000**	**$264,624,000**	**$11,551,000**

(B) Asset Reconciliation	Rate Group #5	Rate Group #9	Rate Group #10	Rate Group #11
(1) Market Value of Assets Excluding County Investment Account and OCSD UAAL Deferred Account	$785,803,229	$54,012,244	$225,051,189	$11,228,821
(2) County Investment Account and OCSD UAAL Deferred Account	0	0	0	0
(3) Plan's Fiduciary Net Position Included in the development of the GASB 67 Addendum Letter (1) + (2)	$785,803,229	$54,012,244	$225,051,189	$11,228,821
(4) Adjustment for Deferred Investment Return and Non-Valuation Reserve	(22,801,229)	(1,567,244)	(6,530,189)	(325,821)
(5) Valuation of Assets Included in the Funding Valuation Report (1) + (4)	**$763,002,000**	**$52,445,000**	**$218,521,000**	**$10,903,000**
Net Pension Liability Shown in the GASB 67 Addendum Letter (A1) - (B3)	**$224,284,548**	**$(1,753,164)**	**$32,453,715**	**$(228,119)**
Unfunded Actuarial Accrued Liability Shown in the Funding Valuation Report (A6) - (B5)	**$249,186,000**	**$373,000**	**$46,103,000**	**$648,000**

[1] These actuarial gain/loss items can be found in Section 4, Exhibit VI of our December 31, 2019 funding valuation report.

Attachment A (continued)

All Rate Groups (Results are as of December 31, 2019)

(A) Liability Reconciliation	Rate Group #12	Rate Group #6	Rate Group #7	Rate Group #8	Total
(1) Total Pension Liability Included in the development of the GASB 67 Addendum Letter	$11,347,924	$936,107,531	$4,290,414,158	$1,891,853,011	$21,754,263,463
(2) (Gain)/Loss from (Lower)/Higher than Expected Salary Increases[1]	(112,000)	(7,746,000)	11,137,000	6,172,000	(52,716,000)
(3) (Gain)/Loss from (Lower)/Higher than Expected COLA Increases[1]	59,000	4,695,000	26,520,000	10,717,000	131,220,000
(4) Other Experience (Gain)/Loss[1]	(222,000)	1,024,000	12,801,000	3,788,000	77,633,000
(5) Other (Gain)/Loss from Rolled Forward Liabilities to Actual Liabilities	49,076	351,469	1,033,842	406,989	6,329,537
(6) Actuarial Accrued Liability Included in the Funding Valuation Report (1) + (2) + (3) + (4) + (5)	**$11,122,000**	**$934,432,000**	**$4,341,906,000**	**$1,912,937,000**	**$21,916,730,000**

(B) Asset Reconciliation	Rate Group #12	Rate Group #6	Rate Group #7	Rate Group #8	Total
(1) Market Value of Assets Excluding County Investment Account and OCSD UAAL Deferred Account	$11,422,439	$691,005,535	$3,145,069,794	$1,569,911,269	$16,516,108,000
(2) County Investment Account and OCSD UAAL Deferred Account	0	9,607,620	42,806,121	0	162,473,000
(3) Plan's Fiduciary Net Position Included in the development of the GASB 67 Addendum Letter (1) + (2)	$11,422,439	$700,613,155	$3,187,875,915	$1,569,911,269	$16,678,581,000
(4) Adjustment for Deferred Investment Return and Non-Valuation Reserve	(331,439)	(20,050,535)	(91,258,794)	(45,553,269)	(479,239,000)
(5) Valuation of Assets Included in the Funding Valuation Report (1) + (4)	**$11,091,000**	**$670,955,000**	**$3,053,811,000**	**$1,524,358,000**	**$16,036,869,000**
Net Pension Liability Shown in the GASB 67 Addendum Letter (A1) - (B3)	**$(74,515)**	**$235,494,376**	**$1,102,538,243**	**$321,941,742**	**$5,075,682,463**
Unfunded Actuarial Accrued Liability Shown in the Funding Valuation Report (A6) - (B5)	**$31,000**	**$263,477,000**	**$1,288,095,000**	**$388,579,000**	**$5,879,861,000**

[1] These actuarial gain/loss items can be found in Section 4, Exhibit VI of our December 31, 2019 funding valuation report.

ORANGE COUNTY EMPLOYEES
RETIREMENT SYSTEM
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan
Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Schedule of Allocated Pension Amounts by Employer

As of and for the Year Ended December 31, 2019

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Certified
Public
Accountants

Independent Auditor's Report

To the Board of Retirement of the
Orange County Employees Retirement System
Santa Ana, California

We have audited the employer allocations and the total for all employers of the rows titled total deferred outflows of resources, total deferred inflows of resources, net pension liability, and total pension expense excluding employer-paid member contributions (specified row totals) included in the accompanying Schedule of Allocated Pension Amounts by Employer (Schedule) of the Orange County Employees Retirement System (OCERS) Cost-Sharing Multiple-Employer Defined Benefit Pension Plan as of and for the year ended December 31, 2019, and the related notes to the Schedule of Allocated Pension Amounts by Employer.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the Schedule 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 Schedule that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on the employer allocations and the specified row totals in the Schedule 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 is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Schedule. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Schedule, 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 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.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the Schedule referred to above presents fairly, in all material respects, the employer allocations, and the total deferred outflows of resources, total deferred inflows of resources, net pension liability, and total pension expense excluding employer-paid member contributions for the total of all employers participating in the Orange County Employees Retirement System Cost-Sharing Multiple-Employer Defined Benefit Pension Plan as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of OCERS as of and for the year ended December 31, 2019, and our report thereon dated June 4, 2020, expressed an unmodified opinion on those financial statements.

Restriction on Use

Our report is intended solely for the information and use of OCERS' management, the Board of Retirement, the Orange County Employees Retirement System Cost-Sharing Multiple-Employer Defined Benefit Pension Plan employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Macias Gini & O'Connell LLP

Newport Beach, California
June 4, 2020

Orange County Employees Retirement System
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan
Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

Deferred Outflows of Resources	**Orange County**	**O.C. Cemetery District**	**O.C. Public Law Library**	**O.C. Mosquito and Vector Control District**	**O.C. Employees Retirement System**
Differences Between Expected and Actual Experience	$ 13,982,779	$ 103,588	$ 43,407	$ 170,770	$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	-	-	-	-	-
Changes of Assumptions	322,870,826	244,428	214,778	435,411	2,018,023
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	18,170,596	-	9,214	-	3,962,866
Total Deferred Outflows of Resources	**$ 355,024,201**	**$ 348,016**	**$ 267,399**	**$ 606,181**	**$ 5,980,889**
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	$ 206,914,979	$ 582,255	$ 409,176	$ 1,511,789	$ 1,273,114
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	409,935,400	355,087	341,549	912,863	2,588,478
Changes of Assumptions	6,642,961	5,895	30,514	-	62,731
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	4,789,699	-	449,137	-	218,343
Total Deferred Inflows of Resources	**$ 628,283,039**	**$ 943,237**	**$ 1,230,376**	**$ 2,424,652**	**$ 4,142,666**
Net Pension Liability as of December 31, 2019	**$ 4,124,212,240**	**$ (228,119)**	**$ (74,515)**	**$ (625,500)**	**$ 26,824,264**
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	$ 449,535,284	$ 127,197	$ 232,335	$ (351,264)	$ 2,317,279
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,270,138	-	(372,508)	-	1,153,331
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	**$ 455,805,422**	**$ 127,197**	**$ (140,173)**	**$ (351,264)**	**$ 3,470,610**

(Continued)

The accompanying notes are an integral part of these schedules.

Orange County Employees Retirement System
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan
Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

Deferred Outflows of Resources	**O.C. Fire Authority**	**Cypress Recreation & Parks District**	**O.C. Department of Education**	**Transportation Corridor Agencies**	**City of San Juan Capistrano**
Differences Between Expected and Actual Experience	$ 24,478,887	$ 2,252,572	$ 380,618	$ 615,484	$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	-	-	-	-	-
Changes of Assumptions	29,267,911	70,336	177,787	880,388	1,970,455
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	-	-	-	887,243
Total Deferred Outflows of Resources	**$ 53,746,798**	**$ 2,322,908**	**$ 558,405**	**$ 1,495,872**	**$ 2,857,698**
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	$ 38,937,675	$ -	$ 678,741	$ 940,190	$ 1,243,105
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	58,927,667	1,632,808	318,152	1,888,409	2,527,464
Changes of Assumptions	130,986	-	10,085	28,116	61,252
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	-	-	-	1,975,710
Total Deferred Inflows of Resources	**$ 97,996,328**	**$ 1,632,808**	**$ 1,006,978**	**$ 2,856,715**	**$ 5,807,531**
Net Pension Liability as of December 31, 2019	**$ 354,395,457**	**$ 262,415**	**$ 3,099,339**	**$ (1,753,164)**	**$ 26,191,970**
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	$ 67,124,196	$ 4,345	$ 271,328	$ 1,376,160	$ 2,262,657
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	-	-	-	(298,375)
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	**$ 67,124,196**	**$ 4,345**	**$ 271,328**	**$ 1,376,160**	**$ 1,964,282**

(Continued)

The accompanying notes are an integral part of these schedules.

Orange County Employees Retirement System
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan
Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

Deferred Outflows of Resources	**O.C. Sanitation District**	**O.C. Transportation Authority**	**U.C.I. Medical Center and Campus**	**Children and Families Commission of O.C.**	**O.C. Local Agency Formation Commission**
Differences Between Expected and Actual Experience	$ 9,606,499	$ 2,331,117	$ 1,790,493	$ -	$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	-	-	-	62,383	-
Changes of Assumptions	12,311,067	21,920,909	1,425,191	(48,635)	112,068
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	449,137	-	-	-	246,158
Total Deferred Outflows of Resources	**$ 22,366,703**	**$ 24,252,026**	**$ 3,215,684**	**$ 13,748**	**$ 358,226**
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	$ 5,416,832	$ 21,768,391	$ 2,432,087	$ (30,682)	$ 70,700
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,420,889	26,953,240	2,670,933	-	143,747
Changes of Assumptions	372,978	595,454	79,608	(1,512)	3,484
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	9,214	-	-	1,652,118	77,447
Total Deferred Inflows of Resources	**$ 31,219,913**	**$ 49,317,085**	**$ 5,182,628**	**$ 1,619,924**	**$ 295,378**
Net Pension Liability as of December 31, 2019	**$ (49,446,617)**	**$ 224,284,548**	**$ 30,213,739**	**$ (646,472)**	**$ 1,489,642**
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	$ 10,009,584	$ 26,336,223	$ 2,168,623	$ (55,847)	$ 128,686
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	372,508	-	-	(539,747)	58,155
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	**$ 10,382,092**	**$ 26,336,223**	**$ 2,168,623**	**$ (595,594)**	**$ 186,841**

(Continued)

The accompanying notes are an integral part of these schedules.

Orange County Employees Retirement System
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan
Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

Deferred Outflows of Resources	**City of Rancho Santa Margarita**	**O.C. Superior Court of California**	**O.C. IHSS Public Authority**	**Total for all Employers**
Differences Between Expected and Actual Experience	$ 1,242	$ -	$ -	$ 55,757,456
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	-	-	-	62,383
Changes of Assumptions	480	25,335,345	173,542	419,380,310
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,270,636	84,750	28,080,600
Total Deferred Outflows of Resources	**$ 1,722**	**$ 29,605,981**	**$ 258,292**	**$ 503,280,749**
Deferred Inflows of Resources				
Differences Between Expected and Actual Experience	$ 5,388	$ 15,983,355	$ 237,210	$ 298,374,305
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	2,527	32,497,141	152,704	567,269,058
Changes of Assumptions	29	787,559	3,713	8,813,853
Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	18,899,874	9,058	28,080,600
Total Deferred Inflows of Resources	**$ 7,944**	**$ 68,167,929**	**$ 402,685**	**$ 902,537,816**
Net Pension Liability as of December 31, 2019	**$ (2,214)**	**$ 336,766,149**	**$ 719,301**	**$ 5,075,682,463**
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions				
Proportionate Share of Allocable Plan Pension Expense	$ (95)	$ 29,092,356	$ 169,172	$ 590,748,219
Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(6,685,009)	41,507	-
Total Employer Pension Expense Excluding That Attributable to Employer-Paid Member Contributions	**$ (95)**	**$ 22,407,347**	**$ 210,679**	**$ 590,748,219**

The accompanying notes are an integral part of these schedules.

Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Notes to the Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

NOTE 1 – PLAN DESCRIPTION

The Orange County Employees Retirement System (OCERS or System) administers a cost-sharing multiple-employer defined benefit pension plan (the Plan) for the County of Orange, Orange County Superior Court of California, City of San Juan Capistrano, and ten special districts: Orange County Cemetery District, Children and Families Commission of Orange County, Orange County Employees Retirement System, Orange County Fire Authority, Orange County In-Home Supportive Services Public Authority, Orange County Local Agency Formation Commission, Orange County Public Law Library, Orange County Sanitation District, Orange County Transportation Authority and the Transportation Corridor Agencies. The Orange County Department of Education, University of California, Irvine Medical Center and Campus, Capistrano Beach Sanitation District, Cypress Recreation & Parks District, Orange County Mosquito and Vector Control District and City of Rancho Santa Margarita are no longer active employers, but retired members and their beneficiaries, as well as deferred members, remain in the System. Capistrano Beach is not presented in the accompanying schedule as this employer is no longer in existence and OCERS does not have the ability to collect any unfunded liabilities from this inactive employer. OCERS is legally and fiscally independent of the County of Orange.

OCERS provides retirement, disability and death benefits to general and safety members. Safety membership includes those members serving in active law enforcement, fire suppression and as probation officers. General membership applies to all other occupations. Plan retirement benefits are tiered based upon the date of OCERS membership. Additional information regarding the pensions plan's benefit structure is included in the Summary of Plan Description that is available on the web at: https://www.ocers.org/summary-plan-description.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Basis of Accounting

Employers participating in the Plan are required to report pension information in their financial statements in accordance with Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement No. 27*. The Schedule of Allocated Pension Amounts by Employer (the Schedule) along with OCERS' audited financial statements, the GASB Statement 67 Actuarial Valuation as of December 31, 2019 and the GASB Statement 68 Actuarial Valuation Based on the December 31, 2019 Measurement Date for Employer Reporting as of June 30, 2020, prepared by OCERS' third-party actuary, provide the required information for financial reporting related to the Plan that employers may use in their financial statements.

The accompanying Schedule was prepared by OCERS' third-party actuary and was derived from information provided by OCERS in accordance with accounting principles generally accepted in the United States of America (GAAP) as applicable to governmental organizations.

Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Notes to the Schedule of Allocated Pension Amounts by Employer

As of and for the Year Ended December 31, 2019

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Basis of Presentation and Basis of Accounting (Continued)

Legally or statutorily required employer contributions for the year ended December 31, 2019, less any amounts of those legally or statutorily required contributions that are paid by the employees (referred to as reverse pick-ups), are used as the basis for determining each employer's proportion of total contributions. For the year ended December 31, 2019, employer paid member contributions of $35,000 under Government Code Section 31581.1 which OCERS reports as employer contributions as these payments do not become part of the accumulated employee contributions, have been excluded in determining each employer's proportion of total contributions. Contributions made by the employer on behalf of employees under Government Code Section 31581.2 are classified as employee contributions and are not included in the proportionate share calculation for the year ended December 31, 2019.

Employer contributions have not been reduced for discount due to prepaid contributions. Contributions for each employer are assigned to its respective participating Rate Group. Rate Groups are a collection of members who are or were employed by employers that offer similar pension benefit formula(s). Rate Groups exist for the purpose of risk-pooling and the contribution rates developed by the actuary should, in the long-term, fairly and accurately reflect the benefits offered/promised to members in each group. Rate Groups can contain one or more employers and employers may be included in one or more Rate Groups. If an employer participates in several Rate Groups, the employer's total proportionate share of the Net Pension Liability (NPL) and related allocated pension amounts is the sum of its NPL and allocated pension amounts from each Rate Group.

The following Rate Groups have only one active employer, so all of the NPL for that Rate Group is allocated to the corresponding employer:

Rate Group	Employer
3	Orange County Sanitation District
4	City of Rancho Santa Margarita
5	Orange County Transportation Authority
6	County of Orange (Probation)
7	County of Orange (Law Enforcement)
8	Orange County Fire Authority (Safety)
9	Transportation Corridor Agencies
10	Orange County Fire Authority (General)
11	Orange County Cemetery District
12	Orange County Public Law Library

The total Plan contributions are determined through OCERS' annual actuarial valuation process. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. California Government Code Title 3, Division 4, Parts 3 and 3.9, Articles 6 and 6.8 define the methodology used to calculate member basic contribution rates for General members and Safety members. The employer is required to contribute the difference between the actuarially determined rate and the contribution rate of employees. Legally or statutorily required employer contributions were determined by multiplying the employers' contribution rate by the employers' payrolls for the fiscal year.

Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Notes to the Schedule of Allocated Pension Amounts by Employer

As of and for the Year Ended December 31, 2019

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Basis of Presentation and Basis of Accounting (Continued)

The NPL is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The TPL for each Rate Group is obtained from valuation results. The Fiduciary Net Position for each Rate Group is estimated by adjusting the valuation value of assets for each membership class by the ratio of the total Plan Fiduciary Net Position (excluding the balance of the County of Orange (County) Investment Account) to total OCERS' valuation value of assets. The County Investment Account is then allocated among the four County Rate Groups using the proportion of the County's most recent contributions that were derived from the proceeds of the Pension Obligation Bonds for each of the four County Rate Groups. The Orange County Sanitation District (OCSD) Unfunded Actuarial Accrued Liability (UAAL) Deferred Account balance of $30,688,000 was allocated entirely to Rate Group 3 and $18,631,000 was transferred at the end of the year to offset actuarial losses incurred during 2019, resulting in an account balance of $12,057,000 as of December 31, 2019. The NPL is then allocated to the respective employers based on the legally or statutorily required employer contributions within each Rate Group.

In developing the pension expense amounts, the NPL proportionate share percentage is used to calculate the employer's pension expense components (service cost, interest, change in benefit terms, differences between expected and actual experience, differences between actual and projected earnings on plan investments, changes in assumptions, employee contributions, and administrative expenses), with the exception of the Orange County Mosquito and Vector Control District (Vector Control), Cypress Recreation & Parks District (CRPD), University of California, Irvine Medical Center and Campus (UCI) and the Orange County Department of Education (OCDE) which were adjusted to reflect the appropriate amount of service costs based on their current inactive membership.

The employer contributions used to determine the NPL proportionate share percentage for Rate Group 1 excludes UCI, OCDE and the Vector Control employer contributions of $2,789,000, $267,000 and $878,000, respectively. These employer contributions were intended to reduce the NPL of the specific employer, not the respective Rate Group as a whole. The percentages of contributions by employer do not equal the percentages used to allocate the NPL by employer because the NPL for the County has been reduced to reflect the portion of the County Investment Account, as described above. The amounts of the County Investment Account that have been allocated to those Rate Groups are as follows:

Rate Group	2019
1	$5,558,363
2	92,443,896
6	9,607,620
7	42,806,121
Total	$150,416,000

Orange County Employees Retirement System
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan
Notes to the Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Basis of Presentation and Basis of Accounting (Continued)

In addition, the NPL for Rate Group 1 was adjusted by the NPL for Vector Control, OCDE, UCI and CRPD prior to allocating the net NPL to the other employers in Rate Group 1. The NPL for these four employers were calculated separately as follows:

> The Vector Control is no longer an active employer, but retired members and their beneficiaries, as well as deferred members, remain in the Plan. For this employer, the allocated net pension liability is based on the most recent estimate of the withdrawal liability and adjusted to reflect the Plan Fiduciary Net Position as of December 31, 2019.
>
> The participation in the Plan for the OCDE and UCI is closed to new members. The funding obligation for these employers' UAAL is no longer pro-rata based on its payroll as there are no active members. Instead, the employer's UAAL is determined based on its specific actuarial accrued liability and a share of assets allocated to the employer. The employer's contributions for its UAAL are to be paid at level, fixed-dollar amounts over a period not to exceed twenty years. The employer will also be liable, or receive a credit, for any change in its funding obligation determined annually thereafter as a result of actuarial experience or changes in actuarial assumptions.
>
> On October 19, 2015, the Board of Retirement approved the amortization schedule for payment of the OCDE UAAL and UCI UAAL of $3,238,000 and $27,586,000, respectively. These balances were calculated based on the December 31, 2014 actuarial valuation assuming fixed-dollar payments over twenty years beginning on July 1, 2016. As per the Declining Payroll Policy, the UAAL balances were updated as of the December 31, 2018 actuarial valuation to reflect actuarial gains or losses and other events that will be captured in a new twenty-year closed amortization layer. The amortization schedules for the new UAAL layers for the OCDE and UCI, after being adjusted for interest to December 31, 2019, can be found on OCERS' website as discussed in Note 5 – Additional Financial and Actuarial Information.
>
> CRPD and Capistrano Beach Sanitary District (CBSD) are no longer active employers. CRPD has twenty-three retired members and beneficiaries, as well as five deferred members, and CBSD has four retired members remaining in the Plan. At the time these employers left the System, OCERS did not have an express policy addressing how the UAAL would be funded for inactive employers. On October 15, 2018, OCERS entered into a withdrawing employer and continuing contribution agreement with the City of Cypress and received payment of the UAAL associated with CRPD members, including interest through October 14, 2018, for a total of $740,000. As of December 31, 2020, and every three years thereafter, CRPD's UAAL obligation will be recalculated and in the event there is any new UAAL obligation, CRPD will have three years following the effective date of the recalculation to satisfy the obligation in full, including accrued interest. As of December 31, 2019, the allocated net pension liability is based on the most recent estimate of the withdrawal liability and adjusted to reflect the Plan Fiduciary Net Position as of December 31, 2019. CBSD is no longer in existence and OCERS does not have the ability to collect any UAAL from this inactive employer under OCERS' Declining Employer Payroll Policy; unpaid liabilities from this employer are deemed immaterial.

Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Notes to the Schedule of Allocated Pension Amounts by Employer

As of and for the Year Ended December 31, 2019

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Use of Estimates in the Preparation of Financial Schedules

The preparation of the Schedule in conformity with GAAP requires management to make significant estimates and assumptions that affect the reported amounts during the reporting period. Actual results could differ from those estimates.

The components of the NPL related to OCERS' plan at December 31, 2019, are as follows (dollars in thousands):

	2019
Total pension liability	$ 21,754,263
Less: Plan fiduciary net position	(16,678,581)
Net pension liability	$ 5,075,682

For the measurement period ended December 31, 2019 (the measurement date), total pension liability was determined by rolling forward the December 31, 2018 (the valuation date) total pension liability. The actuarial assumptions used were based on the results of an experience study for the period from January 1, 2014 through December 31, 2016.

NOTE 3 -- ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Methods and Assumptions Used to Determine Total Pension Liability

The December 31, 2019 total pension liability was based on the following actuarial methods and assumptions:

Actuarial Experience Study	Three-Year Period Ending December 31, 2016
Actuarial Cost Method	Entry Age in accordance with the requirements of GASB Statement No. 68
Actuarial Assumptions	
Investment Rate of Return	7.00%. net of pension plan investment expenses; including inflation
Inflation Rate	2.75%
Projected Salary Increases	General: 4.25% to 12.25% and Safety: 4.75% to 17.25% Vary by service, including inflation
Cost of Living Adjustments	2.75% of retirement income

Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Notes to the Schedule of Allocated Pension Amounts by Employer

As of and for the Year Ended December 31, 2019

NOTE 3 – ACTUARIAL METHODS AND ASSUMPTIONS (CONTINUED)

Actuarial Methods and Assumptions Used to Determine Total Pension Liability (Continued)

Mortality Assumptions

The mortality assumptions used in the TPL at December 31, 2019, were based on the results of the actuarial experience study for the period January 1, 2014 through December 31, 2016, using the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table as a starting point, projected generationally using the two-dimensional Scale MP-2016, with age adjustments, and adjusted separately for healthy and disabled for both general and safety members.

Discount Rate

The discount rate used to measure the TPL as of December 31, 2019 was 7.00%. In determining the discount rate OCERS took into account the projection of cash flows and 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 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 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 December 31, 2019.

According to Paragraph 30 of Statement 68, the long-term expected rate of return should be determined net of pension plan investment expense but without reduction for pension plan administrative expense.

The 7.00% investment return assumption used in the actuarial valuation for funding is net of administrative expenses. Administrative expenses are assumed to be 13 basis points. The investment return assumption remained the same for reporting purposes due to the immaterial impact administrative expenses has on the overall assumed rate of return.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and 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 rate of return by the target asset allocation percentage and by adding expected inflation and deducting expected investment expenses. Additional information on the target allocation and projected arithmetic real rate of return for each major asset class is available in the OCERS' Comprehensive Annual Financial Report for the year ended December 31, 2019, which can be found on OCERS' website at www.ocers.org.

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Orange County Employees Retirement System

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan

Notes to the Schedule of Allocated Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

NOTE 3 – ACTUARIAL METHODS AND ASSUMPTIONS (CONTINUED)

Actuarial Methods and Assumptions Used to Determine Total Pension Liability (Continued)

Amortization of Deferred Outflows and Deferred Inflows of Resources

The net difference between projected and actual investment earnings on pension plan investments in the Schedule represents the unamortized balance relating to the current measurement period and the prior measurement periods on a net basis. The net difference between projected and actual investment earnings on pension plan investments is amortized over a five-year period on a straight-line basis beginning with the year in which they occur. One-fifth was recognized in pension expense during the measurement period, and the remaining net difference between projected and actual investment earnings on pension plan investments at the measurement date is to be amortized over the remaining period.

Deferred outflows of resources and deferred inflows of resources related to the differences between expected and actual experience, changes of assumptions, and changes in proportion and differences between employer contributions and proportionate share of contributions are recognized over the average of the expected remaining service lives of all employees that are provided with pensions through the Plan determined as of December 31, 2018 (the beginning of the measurement period ending December 31, 2019) which is 5.86 years. Prior measurement period differences between expected and actual experience, changes of assumptions, and changes in proportion and differences between employer contributions and proportionate share of contributions continue to be recognized based on the expected remaining service lives of all employees calculated as of the beginning of those measurement periods.

The Schedule of Allocated Pension Amounts by Employer does not reflect contributions made to OCERS subsequent to the measurement date as defined in GASB Statement No. 68 paragraph 57. Appropriate treatment of such amounts is the responsibility of the employers.

NOTE 4 – SUBSEQUENT EVENT

In fiscal year 2019, a novel strain of the coronavirus COVID-19 has spread around the world causing a global public health emergency and economic disruption. As of the date of this report, OCERS is able to perform all necessary business functions. The extent to which the COVID-19 pandemic may impact OCERS' NPL and its allocation of pension amounts by employer going forward is uncertain and cannot be predicted at this time.

NOTE 5 - ADDITIONAL FINANCIAL AND ACTUARIAL INFORMATION

Additional financial and actuarial information required for GASB Statement No. 68 disclosures is presented in OCERS' Comprehensive Annual Financial Report as of and for the year ended December 31, 2019, the OCERS' GASB Statement No. 67 Actuarial Valuation as of December 31, 2019, the OCERS' GASB Statement No. 68 Actuarial Valuation Based on the December 31, 2019, Measurement Date for Employer Reporting as of June 30, 2020, and the Unfunded Actuarial Liability and Associated Amortization Schedules as of the December 31, 2018 valuation for the Orange County Department Education and University of California, Irvine Medical Center and Campus, which can be found on OCERS' website at www.ocers.org.

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Gina M. Ratto, General Counsel

SUBJECT: **SUSPENSION OF ADMINISTRATIVE HEARINGS INVOLVING THE ISSUE OF THE APPLICATION OF THE DISABILITY OFFSET UNDER GOVERNMENT CODE SECTION 31838.5**

Recommendation

Pursuant to the Board's retained authority under the Board's Adjudication Policy and Administrative Hearing Rules, ***order*** that all pending administrative hearings and administrative hearings requested in the future involving the issue of the application of the disability offset under Government Code section 31838.5 be suspended pending a final decision in pending litigation captioned, *Nicholas Casson v. OCERS*, Orange County Superior Court, Case No. 30-2020-01140757-CU-WM-CJC.

Background

On October 20, 2019, the Hearing Officer in *The Matter of the Application for Disability Retirement of Nicholas Casson* (Casson) issued his Summary of Evidence, Findings of Fact, Conclusions of Law, and Recommendations (Recommendations). The legal question before the Hearing Officer was whether OCERS had correctly applied the disability offset of Government Code section 31838.5 to Casson's disability allowance notwithstanding the fact that Casson had not established reciprocity with OCERS when he was hired by the Orange County Fire Authority following his service retirement as a CalPERS member. In his Recommendations, the Hearing Officer recommended the following:

> … that the Board of Retirement adopt the findings of OCERS; namely that OCERS correctly applied an offset to Applicant's disability allowance, in accordance with a reasonable interpretation of California law, so that Applicant will not receive a disability allowance greater than the amount Applicant would had (sic) received if all of his service had been with one entity, notwithstanding the fact that Applicant did not elect reciprocity.

At its January 21, 2020 meeting, the Board approved and adopted the Recommendations.

On May 26, 2020, Casson filed a Verified Petition for Writ of Mandate against OCERS in Orange County Superior Court (Casson Writ Petition), challenging OCERS' application of the disability offset on the grounds that the offset applies only when the member has established reciprocity, and Casson had not established reciprocity. Among other things, Casson asks the court to issue a writ of mandate compelling OCERS to set aside the decision to apply the "illegal offset" to Casson's retirement.

Currently, there are five coordinated member cases (the Coordinated Cases), involving the precise legal issue that has been raised in the Casson Writ Petition that are pending administrative hearing before an OCERS Hearing Officer. All of the cases involve firefighters who service retired from CalPERS and who were then granted service connected disability benefits by OCERS. At its February 10, 2020 meeting, the Board ordered the administrative appeals filed by OCERS members, Christopher Roelle, James Bento, Arthur Lopez-Hidalgo, Guy Grindle, and John Gammon be coordinated, assigned to, and heard by one hearing officer in a coordinated hearing. The basis for the coordination was that all five cases raised the same legal question, that is, whether the disability offset of Government Code section 31838.5 applies absent reciprocity. There are no material factual questions at issue. The hearing in these Coordinated Cases is scheduled for October 6, 7 and 8, 2020.

There are at least two additional similarly situated members who have requested or who staff anticipates will request an administrative hearing on the same legal question.

Discussion

The Board's Adjudication Policy and Administrative Hearing Rules (rev. 1/16/18; Policy), states that "[t]he Board retains the right to amend this policy or, in extraordinary cases, vary the process set forth in this policy, in any manner consistent with the law." The Policy does not expressly address the possibility of the Board suspending administrative hearings due to exigent circumstances.

As stated above, the legal question at issue in the Coordinated Cases and the two other member matters is the very same legal question that will be addressed by the Superior Court in the Casson Writ Petition – does the disability offset of Government Code section 31838.5 apply regardless of reciprocity? Because the legal question is the same in all of these cases, staff recommends that the Board exercise its retained authority under the Policy to order that the pending hearing in the Coordinated Cases, as well as any hearings requested in the future involving the same legal question, be suspended until there is a final decision on the Casson Writ Petition.

The final decision in Casson Writ Petition will effectively establish the rule for resolving all of the other cases. There is no sound reason for proceeding with the other hearings, at considerable administrative cost, effort and uncertainty. For example, the Hearing Officer recommendation in the Coordinated Cases will eventually be presented to the Board – probably in April or May of 2021 – for the Board's consideration. Assuming the Casson Writ Petition has not been finally resolved by that time, staff will strongly recommend that the Board postpone its decision on the Coordinated Cases – *regardless of what the Hearing Officer recommended* – until after a final decision on the Casson Writ Petition. It would be imprudent and premature for the Board to reverse its determination in Casson and start paying the members in the Coordinated Cases an unreduced benefit based on a new and conflicting Hearing Officer recommendation, when there is a case pending in state court that will decide, one way or another, whether the disability offset applies regardless of reciprocity. If OCERS begins paying the members in the Coordinated Cases an unreduced benefit based on that Hearing Officer's recommendation, and the state court subsequently decides that the disability offset *does* apply, the members will have received an overpayment of benefits that OCERS would be required to collect from them.

Staff understands that a decision by the Board suspending the hearings may temporarily delay resolution of the other members' appeals. However, it is important to note that the members are currently collecting a disability allowance from OCERS, albeit adjusted by virtue of the mandated offset, in addition to a full service retirement allowance from CalPERS. If the Casson Writ Petition is finally resolved in Casson's favor, all of the members whose pensions have been offset will receive a lump sum payment of the benefit reduction and their disability allowances will be corrected going forward.

Board, staff and judicial economy and efficiency dictate that all pending administrative hearings and administrative hearings requested in the future involving the issue of the application of the disability offset under Government Code section 31838.5 should be ordered suspended pending a final decision on the Casson Writ Petition. This is clearly within both the retained authority of the Board under the Policy and the broad discretion of the Board to administer the system prudently and incur only reasonable expenses of administration under the California Constitution (CA Const. Art. XVI sec. 17(a), (c)). The Board's fiduciary counsel concurs in this recommendation.

Counsel to the members in the Coordinated Cases was notified that this item would be presented to the Board at its June 15, 2020 meeting so that he may appear and address any comments to the Board.

Submitted by:

Gina M. Ratto
General Counsel

Orange County Employees Retirement System
Retirement Board Meeting
June 15, 2020
Application Notices

Member Name	Agency/Employer	Retirement Date
Aguirre, Frank	Probation	3/27/2020
Alcala, Socorro	Sheriff's Dept	4/22/2020
Almodovar, Edgardo	District Attorney	3/27/2020
Alvarado, Robert	Fire Authority (OCFA)	3/27/2020
Anaya-Castanon, Estela	Social Services Agency	3/27/2020
Anaya-Conboy, Celia	Health Care Agency	3/27/2020
Andrade, Martha	Social Services Agency	3/27/2020
Andrews, Marty	Public Defender	3/27/2020
Arevalo, Luis	Health Care Agency	3/27/2020
Armstrong, Raymond	District Attorney	3/27/2020
Baker, Marilyn	Auditor Controller	3/27/2020
Barry, Linda	Probation	3/27/2020
Bausman, Elizabeth	Health Care Agency	3/27/2020
Betancourt, Riboberto	District Attorney	3/27/2020
Blumberg, Laura	Sheriff's Dept	3/31/2020
Bondad, Cesar	Health Care Agency	4/1/2020
Boothe, Tamara	Sheriff's Dept	3/27/2020
Bottomley, Arlynn	OC Community Resources	3/31/2020
Bourne, Nigel	Social Services Agency	3/27/2020
Bowersox, Nancy	County Executive Office (CEO)	3/27/2020
Brady, Jecelyn Grace	OCTA	3/30/2020
Brower, Thomas	OCTA	4/1/2020
Buckingham, Cecilia	Auditor Controller	3/27/2020
Bui, Lisa	Social Services Agency	3/27/2020
Burgos, Sergio	Child Support Services	3/27/2020
Cardenas, Diane	District Attorney	3/27/2020
Casper, Deborah	Fire Authority (OCFA)	3/27/2020
Castro, Richard	Sheriff's Dept	3/27/2020
Celis, April	Social Services Agency	3/27/2020
Chacon, Tony	OC Public Works	3/27/2020
Chairez, Samuel	Child Support Services	3/27/2020
Chakrabarti, Kalpana	District Attorney	3/27/2020
Chakrabarti, Swades	Assessor	3/27/2020
Chang, John	OC Public Works	3/27/2020
Cleary, Barbara	OC Community Resources	4/1/2020
Cleveland, Donald	Sanitation District	3/27/2020
Cohen, Adee	Health Care Agency	4/1/2020
Collins-Rogers, Susan	Social Services Agency	3/27/2020
Conard, Corinne	OC Public Works	3/26/2020
Cooper, Jovita	Assessor	3/27/2020
Cormier, Robert	Health Care Agency	4/1/2020
Cuevas, Lorraine	Superior Court	4/1/2020
Dalton, Eric	Fire Authority (OCFA)	3/27/2020
Davis, Daniel	Health Care Agency	3/27/2020
Davis, Nga	Assessor	3/31/2020
Debaun, Susan	Human Resources Dept	3/27/2020
Dineen, William	OCTA	3/29/2020
Dominguez, Thomas	Sheriff's Dept	4/1/2020
Dulyanai, Gumdhorn	Sheriff's Dept	3/27/2020

Member Name	Agency/Employer	Retirement Date
Durbin, Sharon	County Counsel	4/1/2020
Eason, Mary	Health Care Agency	3/27/2020
Engstrom, Mark	Fire Authority (OCFA)	3/27/2020
Erickson, Evan	Fire Authority (OCFA)	3/27/2020
Farmer, Grace	OCTA	4/1/2020
Farmer, Michele	Sanitation District	4/1/2020
Fernandez, Rosa	Health Care Agency	3/27/2020
Field, Susan	Social Services Agency	3/27/2020
Fischer, Norma	Sheriff's Dept	3/27/2020
Flores, John	Sanitation District	3/27/2020
Fouste, Annette	Probation	3/27/2020
Francis, Victoria	Sanitation District	3/27/2020
Freville, Marilee	Fire Authority (OCFA)	3/27/2020
Friedman, Douglas	OC Public Works	3/27/2020
Gaona, Claudia	District Attorney	3/19/2020
Garcia, Damaso	Social Services Agency	3/27/2020
Geraurd, Isabel	Social Services Agency	3/27/2020
Gilbert, Eric	Fire Authority (OCFA)	3/27/2020
Gilgren, Debbie	Superior Court	3/27/2020
Gill, Sheila	Health Care Agency	3/27/2020
Gomez, Ruben	Sanitation District	4/1/2020
Gomez-Valenzuela, Diane	Superior Court	3/27/2020
Gonzalez, Jovie	Social Services Agency	3/27/2020
Gonzalez, Laura	Social Services Agency	3/27/2020
Gorman, Paul	Superior Court	4/1/2020
Gracey, Michael	Fire Authority (OCFA)	3/31/2020
Graf, Richard	OCTA	3/5/2020
Gray, Matthew	Probation	3/27/2020
Gustafson, Sylvia	Superior Court	4/1/2020
Gwathmey, Patricia	Health Care Agency	4/1/2020
Gyves, Alison	District Attorney	3/27/2020
Haldeman, James	Fire Authority (OCFA)	3/26/2020
Hanich, Cozette	OCTA	3/29/2020
Hartzell, Randi	Probation	3/27/2020
Heinsma, Debra	Probation	4/1/2020
Hernandez, Carmen	Probation	3/27/2020
Hinshaw, Ronald	Sanitation District	3/27/2020
Hughes, Richard	Fire Authority (OCFA)	3/27/2020
Hughes, Tracy	District Attorney	3/25/2020
Humphrey, Marquita	Social Services Agency	4/10/2020
Hunt, Joseph	OC Public Works	3/27/2020
Hutchison, Cynthia	Social Services Agency	3/27/2020
Igarta, Anna	Superior Court	3/27/2020
Imani, Hamid	OC Public Works	3/27/2020
Kampczyk, Christina	Probation	3/31/2020
Kazalbash, Iskander	Sheriff's Dept	3/27/2020
Koepsell, Robert	Fire Authority (OCFA)	3/27/2020
Krescanko, Nancy	Child Support Services	3/27/2020
Kropp, Noemi	Social Services Agency	3/27/2020
Krutsinger, Theresa	Health Care Agency	3/27/2020
Kumar, Bhartti	Social Services Agency	3/13/2020
Laird, James	District Attorney	4/1/2020
Lam, Ai-Hieu	Social Services Agency	3/27/2020
Ledford, Mark	Fire Authority (OCFA)	3/27/2020
Lee, Linda	Transportation Corridor Agency (TCA)	4/20/2020
Lent, Deborah	Health Care Agency	4/1/2020
Leon, Gilbert	City of San Juan Capistrano	4/1/2020

Member Name	Agency/Employer	Retirement Date
Leys, Robert	Human Resources Dept	3/27/2020
Lizarzaburu, Gladys	Social Services Agency	3/27/2020
Logan, Scott	Health Care Agency	3/27/2020
Looney, Cathy	Child Support Services	4/1/2020
Lopez, Gabriel	OC Community Resources	3/27/2020
Manriquez, Rueben	Sanitation District	4/1/2020
Marangi, Stefanie	District Attorney	3/27/2020
Mattson, Dale	Sheriff's Dept	3/27/2020
Mc Laughlin, Laura	Social Services Agency	3/14/2020
Mccament, Donde	District Attorney	3/27/2020
Mclellan , Brigette	Social Services Agency	3/27/2020
Menchaca Schwary, Loretta	Superior Court	3/27/2020
Miranda, Luciane	OC Community Resources	3/27/2020
Mittelsteadt, Caprice	Sheriff's Dept	4/17/2020
Moore, John	OC Public Works	3/27/2020
Moreno, Atheline	OC Community Resources	3/27/2020
Morgan, Vallarice	Superior Court	3/27/2020
Morton, Linda	Assessor	3/27/2020
Murthy, Umesh	Sanitation District	3/27/2020
Nario, Valente	OCTA	4/1/2020
Nayyar, Promila	District Attorney	3/27/2020
Nguyen, Amanda	Auditor Controller	3/27/2020
Nguyen, Ha	Child Support Services	3/31/2020
Nguyen, Ha Lien	Social Services Agency	3/27/2020
Nguyen, Hoang-Oanh	Sanitation District	3/27/2020
Nguyen, Janette	Superior Court	4/1/2020
Nguyen, Lany	OC Community Resources	3/27/2020
Nguyen, Tohue	Child Support Services	3/27/2020
Nguyen, Tuan	Social Services Agency	3/27/2020
Nguyen, Tuan	OC Public Works	4/21/2020
Nguyen, Xavier-Phuc	Social Services Agency	3/27/2020
Norton, Brian	Fire Authority (OCFA)	3/27/2020
Ontiveros, Karen	Human Resources Dept	3/31/2020
Ortiz-Blackburn, Carmen	Health Care Agency	3/31/2020
Paredes, Benito	Health Care Agency	3/26/2020
Perez, Pax	Sheriff's Dept	3/27/2020
Petelo, Khue	Health Care Agency	4/10/2020
Petka, Donald	Sheriff's Dept	3/27/2020
Pijl, Kelly	Children & Families Commission	3/27/2020
Pittman, Eric	Social Services Agency	3/27/2020
Pocsics, John	Sheriff's Dept	3/27/2020
Pospisil, Terry	OC Vector Control District	3/31/2020
Powers, Lisa	Social Services Agency	3/27/2020
Quach, Tho	Social Services Agency	3/27/2020
Quinn, Deanna	Probation	3/27/2020
Ralls, John	Health Care Agency	4/1/2020
Ramos-Gonzalez, Victor	Superior Court	3/27/2020
Rehnelt, Wayne	Sheriff's Dept	3/27/2020
Rico, Patricia	Health Care Agency	3/27/2020
Ripken, Randy	Fire Authority (OCFA)	3/27/2020
Rivas, Carmen	Social Services Agency	3/27/2020
Rivera, Laura	Social Services Agency	4/7/2020
Robles, Hilario	Sheriff's Dept	3/27/2020
Roman, Lori	Superior Court	4/1/2020
Rose-Hollins, Marjorie	Social Services Agency	3/27/2020
Roth, Michelle	Health Care Agency	3/27/2020
Rovano, Steven	Fire Authority (OCFA)	3/27/2020

Member Name	Agency/Employer	Retirement Date
Ruiz, Karen	OC Public Works	3/31/2020
Russell, David	Sanitation District	4/1/2020
Sakamoto, Steven	Social Services Agency	3/27/2020
Salcido, Robert	Fire Authority (OCFA)	3/27/2020
Salgado, Henry	Sanitation District	3/27/2020
Salinas, Victor	Sanitation District	3/27/2020
Sanchez, Patricia	Child Support Services	3/27/2020
Sarris, Delia	OCTA	4/1/2020
Satras, Paul	Fire Authority (OCFA)	3/27/2020
Savan, Adriana	Superior Court	3/27/2020
Scott, Linda	Health Care Agency	3/27/2020
Seiler, Merrill	Sanitation District	3/27/2020
Senteno, Karen	Health Care Agency	3/27/2020
Sepulveda, Fernando	Social Services Agency	3/27/2020
Shie, Chi-Yung	Fire Authority (OCFA)	3/27/2020
Sivalingam, Chandrakanthi	Health Care Agency	3/26/2020
Smith, Moira	Superior Court	4/1/2020
Stancato, Patricia	Health Care Agency	3/27/2020
Steele, Benjamin	District Attorney	3/27/2020
Stewart, Augustine	Assessor	3/27/2020
Stout, William	OCTA	3/29/2020
Sutton, Virginia	Sheriff's Dept	3/27/2020
Swindler, John	Sanitation District	4/1/2020
Tang, Serene	Fire Authority (OCFA)	3/27/2020
Tran, Chuong	County Executive Office (CEO)	4/1/2020
Tran, Tran	Social Services Agency	3/27/2020
Tran, Tuyet	Social Services Agency	3/27/2020
Truong, Minhthanh	Social Services Agency	3/27/2020
Valle, Robert	OC Public Works	3/27/2020
Van De Kreeke, David	Sheriff's Dept	3/31/2020
Vanotterloo, Kevin	Health Care Agency	4/1/2020
Varquez, Yolanda	OC Public Works	3/27/2020
Visser, Kim	Assessor	3/27/2020
Wall, Karen	OC Community Resources	3/27/2020
Wallingford, Joshua	County Executive Office (CEO)	3/27/2020
Waterman, Krista	Social Services Agency	4/5/2020
Wentz, Sherry	Fire Authority (OCFA)	3/26/2020
Whitney, Theresa	Social Services Agency	3/27/2020
Willis, Sandy	OC Public Works	4/14/2020
Winoto, Sylvia	Social Services Agency	3/27/2020
Winter, Lisa	Sheriff's Dept	3/27/2020
Wood, Mark	OC Public Works	3/27/2020
Yazdi, Faranak	OC Community Resources	3/27/2020
Zavala, Jose	OCTA	3/29/2020
Zietz, David	Social Services Agency	3/27/2020
Zuniga, Kyle	Fire Authority (OCFA)	3/28/2020

Orange County Employees Retirement
Retirement Board Meeting
June 15, 2020
Death Notices

Active Members	Agency/Employer
LeMaster, Jon	OCTA
Macias, Angie	Social Services Agency
Price, David	OC Community Resources

Retired Members	Agency/Employer
Abulone, Marianne	Social Services Agency
Anderson, Glenn	OCTA
Blackwell, Dorothy	UCI
Brown, Judith	Health Care Agency
Colvin, Donna	Sheriff's Dept
Contreras, Rebecca	Sheriff's Dept
Cordero, Rene	Social Services Agency
Flynn, Yvonne	John Wayne Airport
Foreman, Donald	District Attorney
Gerdes, Florence	Sanitation District
Golden, Joseph	Sheriff's Dept
Goodrum, Steven	OCWR
Griffin, Barbara	UCI
Halford, Orlyn	OC Public Works
Harris, William	Health Care Agency
Hibner, Ted	Social Services Agency
Kosoi, Dawn	OCWR
Langlinaia, Walter	OC Community Resources
Litonjua, Hector	OC Public Works
Marsalek, Gary	Sanitation District
Nelson, Alton	Sheriff's Dept
Ogletree, Angela	Sheriff's Dept
Ownes, Judith	Social Services Agency
Pedrosa, Andrew	District Attorney
Pike, Timothy	OCWR
Schwartz, Shirley	OC Public Works
Sheridan, Jacqueline	Social Services Agency
Slach, Marjoire	UCI
Vincent, Elizabeth	Social Services Agency
Wesley, Geoann	OCTA
Wetzstein, Carol	OCTA
Wooten, Johnnie	Sheriff's Dept

Surviving Spouses	
Brown, Karin	
Burke, Judith	

Long, Tillie	

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
2223 E. WELLINGTON AVENUE, SUITE 100
SANTA ANA, CALIFORNIA

AUDIT COMMITTEE MEETING
April 20, 2020
11:00 a.m.

MINUTES

OPEN SESSION

The Chair called the meeting to order at 11:00am.

Attendance was as follows:

Present via Zoom Video conference pursuant to Executive Order N-29-20 issued by Governor Newsom on March 17, 2020:

Frank Eley, Chair; Shari Freidenrich, Vice Chair; Charles Packard; Jeremy Vallone

Also Present via Zoom:

David Kim, Director of Internal Audit; Steve Delaney, Chief Executive Officer; Gina Ratto, General Counsel; Suzanne Jenike, Assistant CEO, External Operations; Brenda Shott, Assistant CEO, Internal Operations; Mark Adviento, Internal Auditor; Sonal Sharma, Recording Secretary; Anthony Beltran, Audio Visual Technician.

PUBLIC COMMENT
None.

C-1 APPROVE AUDIT COMMITTEE MINUTES

Audit Committee Meeting Minutes January 13, 2020

MOTION was made by Packard, **seconded** by Vallone to approve the minutes.

The motion passed **unanimously.**

I-1 2019 FINANCIAL STATEMENT AUDIT – ENTRANCE CONFERENCE
Presentation by Linda Hurley and Amy Chiang, Macias Gini & O'Connell

A-2 REVIEW OF OCERS' ETHICS, COMPLIANCE, AND FRAUD HOTLINE POLICY
Presentation by David Kim, Director of Internal Audit

Recommendation: Approve, and recommend that the Board approve, revisions to the Ethics, Compliance, and Fraud Hotline Policy.

MOTION by Packard, seconded by Vallone to approve, and recommend that the Board approve, revisions to the Ethics, Compliance, and Fraud Hotline Policy.

AMENDED MOTION by Packard, seconded by Vallone, to approve staff's recommendation with the addition to paragraph 12 of the Policy:

" 12. The final outcome of all investigations will be reviewed with the Chair of the Audit Committee and a summary will be submitted to the Audit Committee unless deemed confidential by the Director of Internal Audit in consultation with the Chief Executive Officer, the Chair of the Audit Committee and Legal Counsel. "

The motion passed **unanimously.**

I-2 STATUS UPDATE OF 2020 AUDIT PLAN
Written Report

COMMITTEE MEMBER COMMENTS
None.

CHIEF EXECUTIVE OFFICER/STAFF COMMENTS
None.

COUNSEL COMMENTS

None.

ADJOURNMENT

The Chair adjourned the meeting at 11:49pm.

Submitted by:	Approved by:
________________________	________________________
Steve Delaney Secretary to the Board	Frank Eley Chair

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **CEO FUTURE AGENDAS AND 2020 OCERS BOARD WORK PLAN**

Written Report

AGENDA TOPICS FOR THE OCERS BOARD OF RETIREMENT

JULY

Travel and Training Expense Report
Strategic Planning Workshop – Final Agenda
Consideration of Early Payment of Employer Contributions For Fiscal Year 2021-2022
Segal Cost Projections

AUGUST

Second Quarter 2020 Budget To Actuals Report
OCERS By The Numbers (2020 Edition)
The Evolution Of The OCERS UAAL (2020 Edition)
Actuarial Experience Study 2017-2019
Employer & Employee Pension Cost Comparison

SEPTEMBER

2021 OCERS Board
Strategic Planning Workshop
Annual Review of Succession Plan
State of OCERS
Proposed Board Meeting schedule for 2021

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

OCERS RETIREMENT BOARD - 2020 Work Plan

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep (Offsite)	Oct	Nov	Dec
System Oversight		STAR COLA Posting **(I)**	Approve 2020 STAR COLA **(A)**	SACRS Board of Directors Election **(A)**	Preliminary December 31, 2019 Valuation **(I)**	Mid-Year Review of 2020 Business Plan Progress **(I)**	Alt. Invest. Return and Assumption Sensitivity: 20-year Illustration **(I)**	Review 2nd Quarter Budget to Actuals Financial Report **(I)**	Strategic Planning Workshop **(I)**	Overview of 2021 Administrative Budget and Investment (Workshop) **(I)**	Review 3rd Quarter Budget to Actuals Financial Report **(I)**	
		Approve 2020 COLA **(A)**	Quarterly 2020-2022 Strategic Plan Review **(A)**			Approve December 31, 2019 Actuarial Valuation & Funded Status of OCERS **(A)**	Actuarial Review: Risk Assessment **(I)**	Receive OCERS by the Numbers **(I)**		Approve 2021-2023 Strategic Plan **(A)**	Approve 2021 Administrative (Operating) Budget **(A)**	
						Approve 2019 CAFR **(A)**	Approve Early Payment Rates for Fiscal Year 2019-20 **(A)**	Receive Evolution of the UAAL **(I)**		Approve 2021 Business Plan **(A)**	Annual CEO Performance Review and Compensation **(A)**	
						Quarterly 2020-2022 Strategic Plan Review **(A)**		Employer & Employee Pension Cost Comparison **(I)**				
								Approve Actuarial Experience Study 2017-2019 **(A)**			Adopt 2021 Board Meeting Calendar **(A)**	
Board Governance				Brown Act Training **(I) - Future Date TBD**					Annual Review of Succession Plan **(I)**			Adopt Annual Work Plan for 2021 **(A)**
				Conflict of Interest Training **(I) - Future Date TBD**							Vice-Chair Election **(A)**	
Regulation / Policies	Communication Policy Fact Sheet **(I)**											
Compliance				Form 700 Due **(A)**		Receive Financial Audit **(I)**			State of OCERS **(I)**		Status of Board Education Hours for 2020 **(I)**	

(A) = Action **(I) = Information**

Memorandum

DATE: June 2, 2020

TO: Members of the Board of Retirement

FROM: Jim Doezie, Contracts, Risk and Performance Administrator

SUBJECT: **QUIET PERIOD – NON-INVESTMENT CONTRACTS**

Written Report
Background/Discussion

1. ***Quiet Period Policy Guidelines***
   The following guidelines established by the Quiet Period Policy, section 3.c, will govern a search process for any contract to be awarded by OCERS:

   "…Board Members and OCERS staff shall not knowingly communicate with any party financially interested in any prospective contract with OCERS regarding the contract, the services to be provided under the contract or the selection process;"

2. ***Quiet Period Guidelines***
   In addition, the following language is included in all distributed RFP's:

   "From the date of issuance of this RFP until the selection of one or more respondents is completed and announced, respondents are not permitted to communicate with any OCERS staff member or Board Members regarding this procurement, except through the Point of Contact named herein. Respondents violating the communications prohibition may be disqualified at OCERS' discretion. Respondents having current business with OCERS must limit their communications to the subject of such business."

Distributed RFP's

The RFP's noted below are subject to the quiet period until such time as a contract(s) is finalized.

- An RFP for a Board Room Audio/Visual Presentation System was distributed. Bids were received. Project was put on hold until further notice.
- An RFP for additional Investment Counsel firm(s) was issued in March 2020. The need for this RFP is to get at least one additional Investment Counsel Firm (Attorney group) to handle the volume of investments that are being reviewed. OCERS received thirteen (13) bids that are currently being evaluated.
- An RFP for Investment Risk Management software was distributed in March 2020. We have received twelve (12) bids that are currently being evaluated.

Submitted by:
Jim Doezie
Contracts, Risk and Performance Administrator

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **BOARD COMMUNICATIONS**

Written Report

Background/Discussion

To ensure that the public has free and open access to those items that could have bearing on the decisions of the Trustees of the Board of Retirement, the OCERS Board has directed that all written communications to the entire Board during the interim between regular Board meetings be included in a monthly communications summary.

News Links

The various news and informational articles that have been shared with the full Board are being provided to you here by web link address. By providing the links in this publicly available report, we comply with both the Brown Act public meeting requirements, as well as avoid any copyright issues.

The following news and informational item was provided by staff and the CEO for distribution to the entire Board:

Steve Delaney:

Email Communication – May 27, 2020

To the members of the OCERS Board of Retirement,

Good morning, we will be meeting shortly via Zoom for today's Investment Committee meeting. I wanted to share some thoughts on current COVID 19 status at OCERS, should you wish to pose questions at the end of the morning's meeting.

OCERS MANDATORY TELEWORK PROGRAM CONTINUES THROUGH JUNE 12

Continuing to review our telework status on a two week basis, I on Friday informed all OCERS staff following consultation with Board Chair Hilton that we would continue mandatory telework through mid-June (Friday, June 12).

I will meet with the Crisis Management Team on Thursday, June 4, to determine if we continue through to the end of June (to July 4 for all intents and purposes)?

In the meantime, excellent work being done by the Senior Executives in laying out a plan for OCERS eventual return. Thanks to Ms. Shott who has been taking the lead on this. Work is to begin soon on the 3rd floor to spread more staff out from the first and second floors.

As I have previously shared, when we are ready to start back I will ask for a limited number of volunteers at first, and we will spend some weeks with just those volunteers in the building as we fine tune our approach.

OTHER SYSTEMS

On Thursday, May 21, I participated in a Zoom conference call with about a dozen representatives of different California Retirement systems.

In general, those systems that are really just departments of their County government are coming back to the office sooner than those that are more independent such as Contra Costa and San Bernardino. San Joaquin Retirement in particular is back and fully open as of yesterday, Tuesday, May 26. That would not have been their management's choice, but it was a County directive. That includes open the building to members coming in to request counseling. The CEO noted that high risk staff can remain working from home, but will need to have a doctor's note stating that is necessary.

Marin County Retirement plans to be fully back by June 1, again a County directive. Management plans to build some continued telework into all staff members work schedules, in order to keep down the number of individuals in the office at any one time.

Sonoma County Retirement is in a similar situation, bringing back staff, though still closed to members wishing to come to the office. Interestingly the Sonoma County Health Department requires staff upon arrival to take their temperature, and then report that and any health issues via an e-mail form as they begin each day. By contrast, the CalPERS representative indicated they are bringing back some staff in phases, but have specifically chosen not to make taking temperatures as part of that return process.

CalPERS presently has 280 staff working in their buildings, and 2600 working remotely. Like OCERS, when they do decide to come back (and there is no chosen date at this time) it will be with volunteers first. Masks will be mandatory, When they do open for member walk ins, it will be by appointment only, and each visit will be limited to 10-15 minutes, simply allowing for a review of paperwork to be sure all is in order, there will not be hour long counseling sessions for a long time to come.

One interesting aside, CalPERS is now using FaceTime as a means to "witness" member signatures of their documents.

Most are not yet allowing members to come to the offices. City of San Luis Obispo Retirement has specifically decided that they will not restore member in person meetings until 2021 (though they are also investigating putting up a tent in their parking lot to allow for in person sessions, but with fresh air to dissipate any germs.)

City of San Jose Retirement has stopped processing any disability claims unless the members can demonstrate financial hardship. They are working remotely through May 31 and will revisit at that time.

With productivity high, Alameda County Retirement sees no need to rush, and have no present plans to return staff to the office nor to restore member in person sessions.

San Bernardino County Retirement has informed staff that they are working remotely until such time as the health authorities indicate they should start back. They do not see that happening in the near future.

My closing remarks are to give my thanks to you the Trustees, you have been very understanding and patient, allowing the OCERS management team to do their best work in meeting the mission you have assigned us.

Be safe all,

Attached:

- OCERS Activities for April 2020

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM 75TH ANNIVERSARY 1945-2020

Monthly Staff Status April 2020

To the members of the OCERS Board of Retirement,

The following is my regular monthly summary of OCERS staff activity, starting with an overview of key customer service statistics as well as activity highlights followed by updates for the month of April 2020.

MEMBER SURVEY RESPONE

"I came in to get a copy of my benefits for the Social Security Office. My request was handled promptly and I received exactly what I needed"
February 2020

"OCERS was extremely helpful and very professional. The OCERS representative went above and beyond my expectations."
March 2020

"I want to express my gratitude to OCERS for their efforts in helping me purchase service credit. OCERS team members were courteous, patient, thorough and responsive. They were outstanding!!!"
April 2020

MEMBER SERVICES TELEPHONE METRICS

Member Services Call History			
Month / Year	**Incoming Calls Through Queue**	**Incoming Calls Direct to Extension**	**Total Calls** (Queue + Direct)
April 2020	*	*	8410
April 2019	1548	2729	4277
April 2018	2182	2628	4810

*Currently configuring reports from new phone system Dialpad to determine calls through Queue versus Direct to Extension.

Customer Service Statistics

Member Approval: 100%

Un-Planned Recalculations: 0

Retirement Applications Received:

Apr – 2020	**33**
Mar – 2020	**80**
Feb – 2020	**169**
Jan – 2020	**249**
Dec – 2019	**75**
Nov – 2019	**54**
Oct – 2019	**69**
Sept – 2019	**38**
Aug – 2019	**62**
July – 2019	**53**
June – 2019	**50**
May – 2019	**43**
Apr – 2019	**37**
Mar – 2019	**107**
Feb – 2019	**199**
Jan – 2019	**258**
Dec – 2018	**54**
Nov – 2018	**85**
Oct – 2018	**49**
Sept – 2018	**40**
Aug – 2018	**55**
Jul – 2018	**67**
Jun – 2018	**44**

Monthly Staff Status
April 2020

ACTIVITIES

BRING YOUR CHILD TO WORK (APRIL 29)

While we weren't able to proceed with our annual celebration of "Bring Your Child to Work" Day (and my special thanks to Megan Cortez and the Vision and Values team who had already started the arduous task of arranging for a full day's worth of engagement and entertainment for our special guests had they been able to come in person), we made it part of our weekly All OCERS Team Zoom Call. Every Wednesday at 2, the entire OCERS staff joins together on a Zoom call to discuss the past week's events, and it allows me an opportunity to share what the management team has in mind as we move forward in dealing with the pandemic. For the call on April 29, we sent out an invitation to all to have their children join us on Zoom. I wish I would have taken a screen shot to share, as it was a pleasure to see dozens of our littlest future OCERS staffers on the line. We had every one take their turn to introduce themselves, and many had fun thoughts to share. It was a real pleasure for us all.

SUCCESSION PLANNING

As part of my ongoing development of staff talent to provide a solid base of management expertise for succession planning purposes, this is now the third year that I have arranged to meet with each and every member of the OCERS staff for an hour long one-on-one discussion.

In 2018 we reviewed each team members work history from high school to their entry into OCERS. My goal then being to learn what other talents an OCERS staff member might have that wouldn't necessarily be obvious from the work he or she was performing at their desks.

In 2019 we reviewed each team member's educational history from high school to their entry into OCERS. I was looking especially for effective educational processes the team member may have encountered that we could then emulate at OCERS. I kept our new education coordinator Ms. Dena Gunsolley closely involved in the outcomes of each of those discussions.

In April of this year I began my third round of meetings. Now we are discussing the greater world of pension challenges, helping each staff member better understand the broad scope of issues facing anyone who is willing to move up the organizational ladder and take on greater duties. We discuss the latest NASRA news clips, and how both local and national pension issues impact what we are doing here at OCERS. We discuss OCERS management efforts to raise the professionalism of an already well qualified and engaged staff. We discuss each individual's training over the past twelve months, and then discuss future courses that would help that individual grow in ability and competency to take on greater responsibilities within the organization. We conclude each meeting by calling a recent retiree together. Those conversations allow me to learn directly from the retiree what we did right, and what we might work on for improvement, while giving many of our staff their only opportunity in a year's time to hear directly from one of our members, which emphasizes the importance of the work each and every one of us performs every day on behalf of our members.

OCERS INFORMATIONAL MEETING

Held monthly at the OCERS offices, staff reviews prior Board meeting actions, future Board agendas, and provide an overview of the OCERS portfolio and investment activity. Normally attended by 10 - 15 employer and at times labor representatives, the April 15 meeting was held telephonically for the first time due to COVID-19 restriction. We were

Monthly Staff Status
April 2020

not yet ready to use Zoom technology for this meeting, the OCERS IT team was busy coming up to speed with the nuances of Zoom in preparation for the Board meeting the following week. We instead used a group conference line. The challenge of course is that we had 40 individuals on the line, who I could not see, and if multiple individuals had raised questions at the same time, it could have been challenging. In fact there were few questions as I reviewed actions begin taken by OCERS in response to COVID-19, followed by Ms. Murphy who discussed the market volatility then being experienced and what that might mean for the portfolio. A highlight was having Paul Angelo and Andy Yeung join us on that call, as they provided a basic primer on how actuarial smoothing is used to account for the volatility then being seen, and to remind all listeners that OCERS is a calendar year reporting system, so we have all of 2020 to recover from any volatility that might be immediately encountered due to the pandemic. We also reminded all that even if there were losses, because we are a calendar year end reporting system, it would be July 1, 2022 before employer and employee contribution rates would be impacted, providing a long time for budget planning. I was pleased with the high turn out on the call.

UPDATES

INVESTMENT TEAM

Mr. Beeson reports on Investment Team activity in April:

As of March 31, 2020, the portfolio year-to-date is down 9.0% net of fees, while the one-year return is down 1.3%. The fund value now stands at $16.2 billion. The OCERS Investment Team has transitioned smoothly to working remotely during the coronavirus pandemic. The April 22nd Investment Committee meeting took place via video/teleconference on Zoom. Molly Murphy opened the meeting by providing an update on the global markets and the impact of the pandemic. Ms. Murphy discussed the new stimulus bill that Congress was expected to pass as well as GDP expectations during the pandemic. Next, Ms. Murphy presented the monthly manager selections and terminations report. OCERS committed $10 million to Mayfield XVI (early stage venture) and $10 million to Mayfield Select II (later stage venture) within the private equity venture capital space. OCERS committed $25 million to the Hg Saturn 2 Fund and $15 million to the Hg Genesis 9 Fund within the private equity buyout space. These funds will focus on lead/control growth buyout investments in mid-market (Genesis) and upper mid-market (Saturn) software and service companies predominantly located in northern Europe. OCERS committed $20 million to Insight Partners XI, a manager that focuses on transactions in growth-stage software, software-enabled services, and internet businesses within private equity growth equity. OCERS committed to the General Catalyst Group X funds within the private equity venture capital space including: $9 million to the Early Venture Fund, $15 million to the Growth Venture Fund, and $10.5 million to the Endurance Fund. OCERS invested $75 million in PIMCO DISCO III within the opportunistic credit asset class to capitalize on future dislocations in public credit markets. OCERS committed $50 million to One Rock Capital Partners III within the private equity special situations space targeting control stakes in mature, middle-market companies primarily in North America. OCERS increased its investment to Silver Rock Tactical Allocation Fund by an additional $50 million within opportunistic credit. Next, the Investment Committee unanimously approved a new asset allocation policy. The new asset allocation policy includes an increase to public equity by 12%, an increase to private equity by 3%, a reduction in fixed income by 6%, a reduction in credit by 4%, and a reduction in real assets by 5%. The new asset allocation has a long-term expected return of 7.8% and a standard deviation of 13.6%. OCERS' Investment Team and Meketa plan to move to the new asset allocation targets over an 18-month time period.

Monthly Staff Status
April 2020

NEW HQ BUILDING

Ms. Shott reports on activities in April:

As reported last month, the COVID -19 pandemic and the related "stay at home orders" across the nation have had a significant disruption to the commercial real estate market. By the end of April, the OCERS workforce had been effectively working remotely for six weeks. With the potential for the remote workforce to continue for months into the future, we have begun to consider what this might mean for the needs of OCERS office space for the long term. We are also discussing how new social distancing protocols and an expanded acceptance, at some level, of working from home in the foreseeable future might alter the space needs for OCERS. These new conditions have caused our OCERS HQ project team to take a step back and pause on developing various options for the Building Committee and Board to consider. We continue to believe it is prudent to actively watch the local real estate market with an interested eye on viable opportunities and various options that could meet OCERS HQ long term needs. The Building Committee will meet in May with the consultants to discuss the most recent developments in the market and review any potential opportunities. [Note: The Building Committee actions were considered with the Trustees at the May 18 Board meeting.]

As a reminder you will see this memo included with the BOARD COMMUNICATIONS document as part of the informational agenda for the June 15 meeting of the OCERS Board of Retirement.

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Gina M. Ratto, General Counsel

SUBJECT: **STATE AND FEDERAL LEGISLATIVE UPDATE**

Written Report

State Legislative Update

The California Legislature reconvened on January 6, 2020, marking the beginning of the second year of the legislative session. The Legislature adjourned early for Spring Recess on March 16 in light of the COVID-19 pandemic. The Assembly returned from Spring Recess on May 4, 2020, and the Senate returned on May 11, 2020. June 19 is the last day for the Assembly and Senate to pass bills introduced in each house; and Summer Recess will begin at that time, provided the Budget Bill has passed. The Legislature will reconvene from Summer Recess on July 13, 2020.

A comprehensive list and description of the pending bills that staff will monitor during the second year of the 2019-2020 legislative session is attached. Below is a brief summary of the bills that may be of greater interest to the Board. **New or updated information since the last report to the Board are indicated in bold text. Three bills are included that were amended in full to provide COVID-19 relief or benefits.**

SACRS Sponsored Bills

- **SB 783 (Senate Committee on Labor, Public Employees and Retirement)**
  The CERL authorizes counties to establish retirement systems pursuant to its provisions for the purpose of providing pension and death benefits to county and district employees. This bill would correct several erroneous and obsolete cross-references within CERL.
  (STATUS: Introduced 03/07/19. Read third time. Passed. Ordered to the Assembly on 05/02/19. In Assembly. Read first time. Held at desk on 05/02/19. Referred to Committee on P.E. & R. on 05/16/19.)

Bills That Would Amend the CERL or Other Laws That Apply to OCERS

- **AB 992 (Mullin)**
  The Brown Act generally requires that the meetings of legislative bodies of local agencies be conducted openly. That act defines "meeting" for purposes of the act and prohibits a majority of the members of a legislative body, outside a meeting authorized by the act, from using a series of communications of any kind to discuss, deliberate, or take action on any item of business that is within the subject matter jurisdiction of the legislative body. This bill would provide that the prohibition described above does not apply to the

participation, as defined, in an internet-based social media platform, as defined, by a majority of the members of a legislative body, provided that a majority of the members do not discuss among themselves, as defined, business of a specific nature that is within the subject matter jurisdiction of the legislative body of the local agency**.**
(STATUS: Introduced 02/21/19. Passed out of the Assembly and ordered to the Senate on 01/30/20. Read first time in Senate; to Committee on RLS. for assignment on 01/30/20.)

- **AB 2473 (Cooper)**
  The California Public Records Act requires state and local agencies to make their records available for public inspection, unless an exemption from disclosure applies. Existing law excludes from the disclosure requirement certain records regarding alternative investments in which public investment funds invest. This bill would exempt from disclosure under the act specified records regarding an internally managed private loan made directly by a public investment fund, including quarterly and annual financial statements of the borrower or its constituent owners, unless the information has already been publicly released by the keeper of the information.
  (STATUS: Introduced 02/19/20. Referred to Committee on P.E. & R. and JUD on 03/12/20**. From committee: Do pass and re-refer to the Committee on APPR on 05/05/20.)**

- **AB 2659 (Chen)**
  The Information Practices Act of 1977 prescribes a set of requirements, prohibitions, and remedies applicable to public agencies, as defined, with regard to their collection, storage, and disclosure of personal information. The act specifically requires an agency to establish rules of conduct for persons involved in the design, development, operation, disclosure, or maintenance of records containing personal information and to instruct these people with respect to the rules and the requirements of the act. This bill would require that the above-described rules of conduct include security awareness and training policies and procedures.
  (STATUS: Introduced 02/20/20. Referred to Committee on P. & C. P. on 03/12/20.)

- **AB 2676 (Quirk)**
  Current law exempts from disclosure critical infrastructure information, as defined, that is voluntarily submitted to the Office of Emergency Services for use by that office, including the identity of the person who or entity that voluntarily submitted the information. This law defines “voluntarily submitted” for that purpose. This bill would remove the restriction that the submission be voluntary, thereby expanding that exemption.

  Current constitutional provisions require that a statute that limits the right of access to the meetings of public bodies or the writings of public officials and agencies be adopted with findings demonstrating the interest protected by the limitation and the need for protecting that interest. This bill would make legislative findings to that effect. The California Constitution also requires local agencies, for the purpose of ensuring public access to the meetings of public bodies and the writings of public officials and agencies, to comply with a statutory enactment that amends or enacts laws relating to public records or open meetings and

contains findings demonstrating that the enactment furthers the constitutional requirements relating to this purpose. This bill would make legislative findings to that effect.
(STATUS: Introduced 02/20/20. Referred to Committee on JUD on 03/02/20. Hearing postponed by Committee on 03/17/20.)

- **AB 2768 (Kalra)**
  Existing law authorizes the use of a digital signature in any written communication with a public entity, as defined, in which a signature is required or used. Under existing law, if a public entity elects to use a digital signature, that digital signature has the same force and effect as the use of a manual signature if it embodies all of specified attributes, including being unique to the person using it and conforming to regulations adopted by the Secretary of State. Existing law requires the Secretary of State to have adopted the initial regulations for these provisions no later than January 1, 1997, including seeking the advice of public and private entities in developing these regulations and holding at least one public hearing to receive comments before adopting the regulations.

  This bill would delete the above-described language requiring the adoption of the initial regulations, as prescribed. The bill would instead require digital signatures to conform to regulations adopted by the Secretary of State pursuant to specified procedures. The bill would further require the Secretary of State to adopt emergency regulations to provide appropriate and timely guidance to public entities and the public generally regarding the signature requirements and to make the regulatory changes needed to update these provisions no later than March 1, 2022, in accordance with the Administrative Procedure Act. The bill would make the emergency regulations adopted pursuant to these provisions effective only until nonemergency, final regulations are adopted and become effective through the regular rulemaking process.
  (STATUS: Introduced 02/20/20; original bill language replaced in full on 05/04/20**. From committee chair, with author's amendments: Amend, and re-refer to Committee on JUD. Read second time and amended on 05/04/20. Re-referred to Committee on JUD. on 05/05/20.)**

- **AB 2937 (Fong)**
  The CERL prescribes the methods for calculating a non-service-connected disability retirement for different membership classifications and for the purpose of calculating reciprocal benefits. In these instances, the sum of allowance may vary depending on whether or not the retirement board finds, in its opinion, the member's disability is due to intemperate use of alcoholic liquor or drugs, among other things. In this regard, the CERL conditions the grant of a disability retirement pension by a county or district on a finding by the board that the member's disability is not the result of intemperate use of alcoholic liquor or drugs. This bill would create an optional provision, to be elected by a county board of supervisors, that would remove the retirement board's assessment regarding the intemperate use of alcoholic liquor or drugs as a condition to the disability retirement.
  (STATUS: Introduced 02/21/20. Read first time 02/24/20**.** Referred to Committee on P.E. & R. on 03/05/20.)

- **SB 749 (Durazo)**
  The California Public Records Act provides that nothing in the act requires the disclosure of corporate proprietary information including trade secrets, among other things. This bill would provide that specified records of a private industry employer that are prepared, owned, used, or retained by a public agency are not trade secrets and are public records, including certain records relating to employment terms and conditions of employees working for a private industry employer pursuant to a contract with a public agency, if those wages, benefits, working hours and other employment terms and conditions relate to work performed under the contract, records of compliance with local, state, or federal domestic content requirements, and records of a private industry employer's compliance with job creation, job quality, or job retention obligations contained in a contract or agreement with a state or local agency. The bill, however, would exclude contracts between a public agency and a private industry employer entered into on or before January 1, 2020, and records that include communications between the state or local agency and specified state or local officials, on matters posing a threat to the security of a public building, a threat to the security of essential public services, or a threat to the public's right of access to public services or public facilities, from these provisions. Because the bill would require local officials to perform additional duties, it would impose a state-mandated local program.
  (STATUS: Introduced 02/22/19. From committee with author's amendments. Read second time and amended. Re-referred to Committee on JUD. on 09/10/19. Assembly Rule 96 suspended. Withdrawn from committee. Ordered to third reading on 09/12/19. Ordered to inactive file on request of Assembly Member Calderon on 09/13/19.)

- **SB 931 (Wieckowski)**
  The Brown Act requires meetings of the legislative body of a local agency to be open and public and also requires regular and special meetings of the legislative body to be held within the boundaries of the territory over which the local agency exercises jurisdiction, with specified exceptions. Current law authorizes a person to request that a copy of an agenda, or a copy of all the documents constituting the agenda packet, of any meeting of a legislative body be mailed to that person. This bill would require, if the local agency has an internet website, a legislative body or its designee to email a copy of, or website link to, the agenda or a copy of all the documents constituting the agenda packet if the person requests that the items be delivered by email. The bill would require, where the local agency determines it is technologically infeasible to send a copy of all documents constituting the agenda packet or a website link containing the documents by electronic mail or by other electronic means, the legislative body or its designee to send by electronic mail a copy of the agenda or a website link to the agenda and mail a copy of all other documents constituting the agenda packet in accordance with the mailing requirements.
  (STATUS: Introduced 02/05/20. Referred to Committee on GOV. and F. on 02/12/20. From committee with author's amendments; read second time and amended; re-referred to Committee on GOV. and F. on 04/02/20.)

- **SB 1297 (Moorlach)**
  This bill would revise the provision of pension and other benefits to members of all state or local public retirement systems. The bill would apply its provisions prospectively to any member of a state or local public

retirement system who is employed upon the date of its enactment and to any person who may be employed and become a member thereafter.

The bill would:

- void any limit on a pension that prohibits the pension from exceeding a percentage of final compensation, as specified;
- prohibit a local entity from establishing a deferred retirement option program, as described, and if a local entity has established a deferred retirement option program, whether or not the program is closed to new participants, it would be required to disenroll any participating employees and close the program;
- with regard to any member of a state or local public retirement system, the bill would require that final annual compensation used for purposes of ascertaining any pension or benefit be calculated as an average of the member's three highest earning years;
- prohibit, for any method of calculating a pension that is based on fractional percentage of final compensation multiplied by years of service with respect to a particular age at retirement, that fractional percentage from exceeding 2.7%;
- include findings that changes proposed by this bill address a matter of statewide concern rather than a municipal affair and, therefore, apply to all cities, including charter cities;
- require that an agency participating in PERS that increases the compensation of a member who was previously employed by a different agency to bear all actuarial liability for the action, if it results in an increased actuarial liability beyond what would have been reasonably expected for the member;
- require that the increased actuarial liability be in addition to reasonable compensation growth that is anticipated for a member who works for an employer or multiple employers over an extended time;
- require, if multiple employers cause increased liability, that the liability be apportioned equitably among them; and
- apply to an increase in actuarial liability, as specified, due to increased compensation paid to an employee on and after January 1, 2021.
  (STATUS: Introduced on 02/21/20. To Committee on RLS for assignment on 02/21/20. Read first time on 02/24/20**.** Referred to Committee on L., P.E. & R. on 03/05/20.)

Other Bills of Interest

- **AB 664 (Cooper)**
  Existing law establishes a workers' compensation system, administered by the Administrative Director of the Division of Workers' Compensation, to compensate an employee for injuries sustained in the course of employment. Existing law creates a disputable presumption that specified injuries sustained in the course of employment of a specified member of law enforcement or a specified first responder arose out of and in the course of employment. Existing law also makes an employer liable only for the percentage of permanent disability directly caused by the injury arising out of and occurring in the course of employment. Existing law requires apportionment of permanent disability to be based on causation, and requires a physician's report addressing the issue of permanent disability to include an apportionment determination in order for the

report to be considered complete on that issue. Existing law exempts certain injuries, including the above-described injuries, from the provisions requiring apportionment.

This bill would define "injury," for certain state and local firefighting personnel, peace officers, certain hospital employees, and certain fire and rescue services coordinators who work for the Office of Emergency Services to include being exposed to or contracting, on or after January 1, 2020, a communicable disease, including coronavirus disease 2019 (COVID-19), that is the subject of a state or local declaration of a state of emergency that is issued on or after January 1, 2020. The bill would create a conclusive presumption, as specified, that the injury arose out of and in the course of the employment. The bill would apply to injuries that occurred prior to the declaration of the state of emergency. The bill would also exempt these provisions from the apportionment requirements. This bill would declare that it is to take effect immediately as an urgency statute.
(STATUS: Introduced 02/15/19; original bill language replaced in full on 04/17/20. From committee chair with author's amendments. Amended and re-referred to committee. Read second time, amended, and re-referred to Committee on L., P.E. & R. on 05/18/20.)

- **AB 1107 (Chu)**
  Existing law, the California Emergency Services Act, authorizes the Governor to proclaim a state of emergency when specified conditions of disaster or extreme peril to the safety of persons and property exist, and to exercise certain powers in response to that emergency. The act also authorizes the governing body of a city, county, city and county, or an official designated by ordinance adopted by that governing body, to proclaim a local emergency, and to exercise certain powers in response to that emergency. Existing law defines the terms "state of emergency" and "local emergency" to mean the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by, among other things, fire, storm, riot, epidemic, or cyberterrorism.

  This bill would require all proclamations, communications, materials, and announcements made by the Governor or a state agency related to a duly proclaimed state of emergency to be made available in all languages spoken by a substantial number of non-English-speaking people. The bill would define the term "substantial number of non-English-speaking people" to mean a group of people that does not speak English or has limited English proficiency and makes up 3% or more of the state's population. This bill would also require each county to translate all emergency-related proclamations, communications, materials, and announcements made by the county related to a duly proclaimed state of emergency or a local emergency duly proclaimed by the county into all languages spoken by 1,000 or more of the county's residents.
  (STATUS: Introduced 02/21/19; original bill language replaced in full on 04/22/20 **and again on 05/26/20**. **From committee chair, with author's amendments: Amend, and re-refer to committee. Read second time, amended, and re-referred to Committee on L., P.E. & R. on 05/26/20.)**

- **AB 1945 (Sala)**
  Under existing law, the California Emergency Services Act, the Governor is authorized to proclaim a state of emergency, as defined, under specified circumstances. The California Emergency Services Act also

authorizes the governing body of a city, county, city and county, or an official designated by ordinance adopted by that governing body, to proclaim a local emergency, as defined. A person who violates any provision of the act is guilty of a misdemeanor.

This bill would, for purposes of the California Emergency Services Act, define "first responder" as an employee of the state or a local public agency who provides emergency response services, including a peace officer, firefighter, paramedic, emergency medical technician, public safety dispatcher, public safety telecommunicator, or emergency response communication employee. The bill would provide that the definition of first responder described above does not confer a right to, or entitlement upon, an employee or prospective employee to obtain a retirement benefit formula for an employment classification that is not included in, or is expressly excluded from, that formula, as specified. The bill would prohibit an employer from offering, or indicating an ability to offer to an employee or prospective employee a retirement benefit formula for an employment classification that is not included in, or is expressly excluded from, that formula because of the definition of "first responder."
(STATUS: Introduced 01/17/20. Referred to Committees on G.O. and P.E. & R. on 01/30/20. From Committee Chair, with author's amendments: Amend, and re-refer to Committee on G.O. Read second time and amended on 05/04/20. Re-referred to Committee on G.O. on 05/05/20. From committee: Do pass and re-referred to Committee on APPR. on 05/13/20.)

- **AB 2226 (Voepel)**
  The Personal Income Tax Law imposes a tax on individual taxpayers measured by the taxpayer's taxable income for the taxable year, but excludes certain items of income from the computation of tax, including an exclusion for combat-related special compensation. This bill, for taxable years beginning on or after January 1, 2021, and before January 1, 2031, would exclude from gross income specified amounts of retirement pay received by a taxpayer from the federal government for service performed in the uniformed services, as defined, during the taxable year. Current law requires any bill authorizing a new tax expenditure to contain, among other things, specific goals, purposes, and objectives that the tax expenditure will achieve, detailed performance indicators, and data collection requirements. The bill also would include additional information required for any bill authorizing a new tax expenditure. This bill would take effect immediately as a tax levy.
  (STATUS: Introduced 02/12/20. Referred to Committee on REV. and TAX on 02/20/20. Hearing postponed by committee on 03/16/20.)

- **AB 2452 (C. Garcia)**
  Current law authorizes the California State Auditor to establish a high-risk local government agency audit program to identify, audit, and issue reports on any local government agency, including any city, county, or special district, or any publicly created entity that the California State Auditor identifies as being at high risk for the potential of waste, fraud, abuse, or mismanagement or that has major challenges associated with its economy, efficiency, or effectiveness. Existing law authorizes the California State Auditor to consult with the Controller, the Attorney General, and other state agencies in identifying local government agencies that are at high risk.

Current law also authorizes the legislative body of a local agency or a district to enter into an association for the purposes of attending the Legislature and the Congress of the United States, and any committees thereof, and presenting information regarding legislation that the legislative body or the district deems to be beneficial or detrimental to the local agency or the district.

This bill would authorize the California State Auditor to include in the high-risk local government agency audit program any local agency or district association that the California State Auditor identifies as being at high risk for the potential of waste, fraud, abuse, or mismanagement or that has major challenges associated with its economy, efficiency, or effectiveness.
(STATUS: Introduced 02/19/20**.** Referred to Committee on A. & A.R. on 02/27/20.)

- **AB 3249 (Fong)**
  Current law requires state and local public retirement systems to submit audited financial statements to the Controller at the earliest practicable opportunity within 6 months of the close of each fiscal year, and requires the Controller, within 12 months of receipt of the information, to compile and publish a report on the financial condition of all state and local public retirement systems. This bill would additionally require the Controller to post the report on the financial condition of all state and local public retirement systems on the Controller's internet website.
  (STATUS: Introduced 02/21/2020. Read first time on 02/24/20. Referred to Committee on P.E. & R. on 03/09/20.)

- **SB 53 (Wilk)**
  The Bagley-Keene Open Meeting Act requires that all meetings of a state body, as defined, be open and public and that all persons be permitted to attend and participate in a meeting of a state body, subject to certain conditions and exceptions. This bill would specify that the definition of "state body" includes an advisory board, advisory commission, advisory committee, advisory subcommittee, or similar multimember advisory body of a state body that consists of 3 or more individuals, as prescribed, except a board, commission, committee, or similar multimember body on which a member of a body serves in his or her official capacity as a representative of that state body and that is supported, in whole or in part, by funds provided by the state body, whether the multimember body is organized and operated by the state body or by a private corporation. This bill would declare that it is to take effect immediately as an urgency statute.
  (STATUS: Introduced 12/10/18. Placed on APPR. suspense file on 08/14/19. Heard on 08/30/19. Held in committee and under submission on 08/30/19.)

- **SB 1042 (Pan)**
  The California Secure Choice Retirement Savings Trust Act, establishes the CalSavers Retirement Savings Program to be administered by the California Secure Choice Retirement Savings Investment Board. Existing law requires the Treasurer, on behalf of the board, to appoint an executive director, who is not a member of the board and who serves at its pleasure. Existing law requires eligible employers to offer a payroll deposit retirement savings arrangement so that eligible employees may contribute a portion of their salary or wages to a retirement savings program account in the program, as specified. Existing law requires the board to take various actions upon implementation of the program and, for to up 3 years following its initial

implementation of the program, requires the board to establish managed accounts invested in United States Treasuries, myRAs, or similar investments. Existing law states that the program is implemented as of January 1, 2017.

This bill would rename the California Secure Choice Retirement Savings Trust Act as the CalSavers Retirement Savings Trust Act, the body that administers the act as the CalSavers Retirement Savings Board, and make conforming changes in this regard. The bill would make various changes in the act to reflect that it has been implemented, including eliminating the requirement to establish managed accounts invested in United States Treasuries, myRAs, or similar investments described above. The bill would authorize the board to delegate rulemaking authority to its executive director. The bill would authorize an employee to opt out of participation in the program by telephone and would eliminate a condition relating to contribution amounts that depends on the length of time that an employee has contributed to the program.

Current law, the Control, Regulate and Tax Adult Use of Marijuana Act (AUMA), an initiative measure approved as Proposition 64 at the November 8, 2016, statewide general election, authorizes a person who obtains a state license under AUMA to engage in commercial adult-use cannabis activity pursuant to that license and applicable local ordinances. Existing law, the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA), among other things, consolidates the licensure and regulation of commercial medicinal and adult-use cannabis activities. MAUCRSA generally divides responsibility for the state licensure and regulation of commercial cannabis activity among the Department of Food and Agriculture, the State Department of Public Health, and the Bureau of Cannabis Control, which are generally referred to as licensing authorities. This bill would require the licensing authorities described above to provide specified information regarding licensees to the CalSavers Retirement Savings Board upon request by the board. (STATUS: Introduced on 02/18/20. Referred to Committee on L. P.E. & R. and B., P. & E.D. on 02/27/20. Set for hearing March 25; hearing postponed by committee on 03/18/20**. On May 12, 2020, referral to Committee on B., P. & E.D. rescinded due to the shortened 2020 Legislative Calendar.)**

- **SB 1159 (Hill)**
  Existing law establishes a workers' compensation system, administered by the Administrative Director of the Division of Workers' Compensation, to compensate an employee for injuries sustained in the course of employment. Existing law creates a disputable presumption that specified injuries sustained in the course of employment of a specified member of law enforcement or a specified first responder arose out of and in the course of the employment.

  This bill would, until an unspecified date, define "injury" for a critical worker, as described, to include illness or death that results from exposure to coronavirus disease 2019 (COVID-19) under specified circumstances. The bill would create a disputable presumption, as specified, that an injury that develops or manifests itself while a critical worker is employed arose out of and in the course of the employment.
  (STATUS: Introduced 02/20/20; original bill language replaced in full on 04/22/20. From committee with author's amendments; read second time and amended; re-referred to Committee on RLS. on 04/22/20. **Set for hearing May 14 in L., P.E. & R. pending receipt on 05/08/20. Re-referred to Committee on L., P.E. & R.**

on 05/11/20. From committee: Do pass and re-refer to Committee on APPR. on 05/18/20. Set for hearing June 1 on 05/26/20.)

Bills that Apply to CalPERS and/or CalSTRS Only:

- **AB 462 (Rodriguez)**
  This bill would require the Boards of Administration of CalPERS and CalSTRS to each provide a report to the Legislature, commencing March 1, 2021, and annually thereafter, on the status of achieving appropriate objectives and initiatives, to be defined by the boards, regarding participation of emerging managers responsible for asset management within each system's portfolio of investments. The bill would require that the report be based on contracts that the system enters into on and after January 1, 2020, and be based on information from the prior fiscal year. The bill would require each report to include certain elements and would require the boards to define emerging manager for purposes of these provisions. This bill contains other related provisions and other existing laws.
  (STATUS: Introduced 02/11/19. Passed out of the Assembly and ordered to the Senate on 04/22/19. Read second time in the Senate, amended, and re-referred to Com. on RLS. on 05/21/19.)

- **AB 979 (Reyes)**
  This bill would require the Boards of Administration of CalPERS and CalSTRS to each provide a report to the Legislature, commencing March 1, 2021, and annually thereafter, on the status of achieving appropriate objectives and initiatives, to be defined by the boards, regarding participation of emerging managers responsible for asset management within each system's portfolio of investments. The bill would require that the report be based on contracts that the system enters into on and after January 1, 2020, and be based on information from the prior fiscal year. The bill would require each report to include certain elements and would require the boards to define emerging manager for purposes of these provisions.
  (STATUS: Introduced 02/21/19 as a bill relating to the Judges' Retirement System II and was amended on 01/06/2020 to relate to emerging manager asset management. Passed out of the Assembly and ordered to the Senate on 01/27/20. Read first time in Senate; referred to Committee on RLS. for assignment on 01/28/20.)

- **AB 1975 (Bigelow)**
  Existing law, the Public Employees' Medical and Hospital Care Act (PEMHCA), which is administered by the Board of Administration of the Public Employees' Retirement System, authorizes the board to contract for health benefit plans for employees and annuitants, as defined, which may include employees and annuitants of contracting agencies. PEMHCA prescribes requirements for the contributions of contracting agencies and their employees and annuitants for these benefits and creates alternative funding formulations for specified counties and districts.

  This bill would create an alternative funding formulation for employer contributions for postretirement health care benefits for specified employees of the County of Madera. The bill would apply its provisions to unrepresented and extra help employees, appointed department heads, and represented employees,

as specified, provided that these employees are otherwise eligible. The bill would require the employees to have a specified minimum amount of service credit, including at least 5 years of service with the county. If the employees are represented, the bill would require a mutually agreed-upon memorandum of understanding regarding contributions for postretirement health benefits consistent with the bill's provisions to be in place. With regard to unrepresented and extra help employees and appointed department heads, the bill would require a specified resolution to have been adopted by a majority of the county board of supervisors that provides for contributions for postretirement health benefits. Upon satisfaction of these conditions, the bill would prescribe a schedule pursuant to which the county would pay employer contributions for postretirement health care benefits for the employees based on specified percentages associated with the employee's credited years of service, that would reach 100% when the employee attains 20 years of service. The bill would apply these provisions to employees of the County of Madera first hired and appointed on and after the date the bill becomes effective.
(STATUS: Introduced 02/22/20. Original bill language replaced in full on 05/04/20. From committee chair, with author's amendments: Amend, and re-refer to Committee on P.E. & R. Read second time and amended on 05/04/20. Re-referred to Committee on P.E. & R. on 05/05/20.)

- **AB 2967 (O'Donnell)**
  Existing law, the Public Employees' Medical and Hospital Care Act, which is administered by the CalPERS Board of Administration, governs the funding and provision of postemployment health care benefits for eligible retired public employees and their beneficiaries. The act deems a surviving spouse or other eligible family member of certain firefighters or peace officers, whose deaths occur as a result of injury or disease arising out of their official duties, to be an annuitant, as specified, for purposes of enrollment in a health benefit plan, if the spouse or family member is uninsured. Existing law requires the employer of the deceased firefighter or peace officer to notify the board within 10 business days of the death of the employee, among other things, if that spouse or family member may be eligible for enrollment.

  This bill would reduce the period within which an employer is to provide notice to the board, as described above, to within seven calendar days.
  (STATUS: Introduced 02/21/20. **Original bill language replaced in full on 05/04/20. From committee chair, with author's amendments: Amend and re-refer to Committee on P.E. & R; read second time and amended on 05/04/20. Re-referred to Committee on P.E. & R. From committee: Do pass and re-refer to Committee on APPR. on 05/05/20.)**

- **SB 266 (Leyva**)
  Under existing law, CalPERS is responsible for correcting errors and omissions in the administration of the system and the payment of benefits. Existing law requires the board to correct all actions taken as a result of errors or omissions of the state or a contracting agency, in accordance with certain procedures. This bill would establish new procedures under PERL for cases in which CalPERS determines that the benefits of a member or annuitant are, or would be, based on disallowed compensation that conflicts with PEPRA and other specified laws and thus impermissible under PERL. The bill would also apply these procedures retroactively to determinations made on or after January 1, 2017, if an appeal has been filed and the employee member, survivor, or beneficiary has not exhausted their administrative or legal remedies. At the

threshold, after determining that compensation for an employee member reported by the state, school employer, or a contracting agency is disallowed, the bill would require the applicable employer to discontinue the reporting of the disallowed compensation. The bill would require that contributions made on the disallowed compensation, for active members, be credited against future contributions on behalf of the state, school employer, or contracting agency that reported the disallowed compensation and would require that the state, school employer, or contracting agency return to the member any contributions paid by the member or on the member's behalf.

With respect to retired members, survivors, or beneficiaries whose benefits are based on disallowed final compensation, the bill would require PERS to adjust the benefit to reflect the exclusion of the disallowed compensation, and provide that contributions made on the disallowed compensation be credited against future contributions on behalf of the employer entity that reported the disallowed compensation. Additionally, if specified conditions are met, the bill would require the employing entity to refund overpayment costs to the system and to pay retired members, survivors, and beneficiaries whose benefits have been reduced an annuity or a lump sum, as prescribed, that reflects the difference between the monthly allowance that was based on the disallowed compensation and the adjusted monthly allowance calculated without the disallowed compensation, as provided. The bill would require the system to provide certain notices in this regard. This bill would require the system to provide confidential contact information of retired members, and their survivors and beneficiaries, who are affected by these provisions to the relevant employing entities, the confidentiality of which the entities would be required to maintain.

The bill would authorize the state, a school employer, as specified, or a contracting agency, as applicable, to submit to the system an additional compensation item proposed to be included or contained in a memorandum of understanding or collective bargaining agreement on and after January 1, 2020, that is intended to form the basis of a pension benefit calculation in order for PERS to review its consistency with PEPRA and other laws, as specified, and would require PERS to provide guidance regarding the review within 90 days, as specified. The bill would require PERS to publish notices regarding proposed compensation language submitted to the system for review and the guidance given by the system that is connected with it. For educational entities that participate in the system, the final responsibility for funding payments to the system and to retired members, survivors, and beneficiaries would belong to the educational entity that is the actual employer of the employee.
(STATUS: Introduced 02/12/19. Read third time in Assembly; ordered to the Senate; Senate concurred in amendments; ordered to engrossing and enrolling on 09/12/19. Withdrawn from engrossing and enrolling, and ordered held at the Desk on 09/13/19.)

- **SB 430 (Wieckowski)**
  PEPRA prohibits a public employer offering a defined benefit pension plan from exceeding specified retirement formulas for new members and prohibits an enhancement of a public employee's retirement formula or benefit adopted after January 1, 2013, from applying to service performed prior to the operative date of the enhancement. PEPRA defines "new member" to mean, among other things, an individual who becomes a member of any public retirement system for the first time on or after January 1, 2013, and who was not a member of any other public retirement system prior to date. Existing law creates the Judges'

Retirement System II, which is administered by the Board of Administration of the Public Employees' Retirement System, for the provision of retirement and other benefits to specified judges and their beneficiaries.

This bill would grant a judge who was elected to office in 2012, but did not take office until on or after January 1, 2013, the option of making a one-time, irrevocable election to have a pre-January 1, 2013, membership status in the Judges' Retirement System II for service accrued after on and after July 1, 2020. The bill would require the election to be made during a 30-day period beginning March 1, 2020. A judge making this election would no longer be a new member under specified provisions of PEPRA. The election would apply prospectively only, and membership rights and obligations that accrued based on service subject to PEPRA prior to July 1, 2020, would remain unchanged. The bill would specify that the Public Employees' Retirement System is not obligated to inform or locate a person who may be eligible to make the election and that its provisions do not affect the Legislature's reserved right to increase contributions or reduce benefits for purposes of the Judges' Retirement System II.
(STATUS: Introduced 02/21/19. Passed out of the Senate and ordered to the Assembly on 05/21/19. Referred to the Committee on P.E. & R. on 05/30/19. Set for first hearing; cancelled at request of author on 06/26/19.)

- **AB 2378 (Cooper)**
  The PERL requires that, upon the death of certain members after retirement and while receiving a retirement allowance, a specified sum of money be paid to the member's designated beneficiary. Existing law provides that the additional employer contributions required to fund these benefits be computed as a level percentage of member compensation, and requires the contributions to be deposited in the Public Employees' Retirement Fund, a continuously appropriated fund. This bill would authorize the Board of Administration of the Public Employees' Retirement System, beginning on or after January 1, 2021, to adjust the death benefit amounts following each actuarial valuation to reflect changes in the All Urban California Consumer Price Index, as specified. By authorizing the board to increase contributions deposited in the Public Employees' Retirement Fund, this bill would make an appropriation.
  (STATUS: Introduced 02/18/20. Referred to Committee on P.E. and R. on 02/24/20.)

- **AB 2394 (Cooper)**
  Pursuant to the PERL, CalPERS provides a defined benefit to members of the system, based on final compensation, credited service, and age at retirement, subject to certain variations. Existing law generally provides that retirement allowances are adjusted annually to reflect increases in the cost of living in relation to the consumer price index, as defined. Existing law defines "consumer price index" for these purposes to mean the United States city average "Consumer Price Index for All Urban Consumers," effective January 1, 1978. Existing law establishes the Department of Industrial Relations as an instrumentality of California government. This bill would change the definition of "consumer price index," effective January 1, 2021, to instead refer to the California Consumer Price Index for All Urban Consumers for all items, as determined by the Department of Industrial Relations.
  (STATUS: Introduced 02/18/20. Referred to Committee on P.E. and R. on 02/24/20.)

- **AB 2510 (Cooley)**
  The CalSTRS Defined Benefit Program provides a defined benefit to members of the program, based on final compensation, credited service, and age at retirement, subject to certain variations. Current law authorizes the CalSTRS board, upon a finding by the board that necessary investment expertise is not available within existing civil service classifications, and with approval of the State Personnel Board, to contract with qualified investment managers, as provided. This bill would additionally authorize the board to contract with investment advisers, as defined, upon the same finding by the board and approval by the State Personnel Board. The bill would, pursuant to a policy adopted by the board, authorize the board to establish a competitive bidding process and to specify the contract terms and conditions the board solely deems necessary and prudent to contract with qualified investment managers and investment advisers.
  (STATUS: Introduced 02/19/20**.** Referred to Committee on P.E. & R. on 02/27/20. **First hearing canceled at the request of author on 05/04/20.**)

- **AB 2998 (Kiley)**
  The CalSTRS Defined Benefit Program provides a defined benefit to members of the program, based on final compensation, credited service, and age at retirement, subject to certain variations. The Defined Benefit Program is funded by employer and employee contributions, as well as investment returns and state appropriations, which are deposited or credited to the Teachers' Retirement Fund.

  Existing law requires the governing board of a school district to adopt a schedule of salaries to be paid to the certificated employees of the school district. Existing law prohibits the governing board of a school district from drawing orders for the salary of any teacher in violation of a salary schedule based on a uniform allowance for years of training and years of experience, or on other criteria agreed to by the school district and the exclusive representative of the certificated employees of the school district.

  This bill would authorize a school district to offer a defined contribution plan to certificated employees and would exclude a certificated employee who opts into a defined contribution plan from membership in the Defined Benefit Program. The bill would authorize a school district to offer a higher salary or lower contribution rate to a defined contribution plan as an incentive for a certificated employee to opt into a defined contribution plan. The bill would authorize a certificated employee to negotiate a salary or contribution rate for a defined contribution plan outside of the school district's salary schedule. The bill would provide that, to the extent the bill's provisions conflict with any provision of a collective bargaining agreement entered into by a public school employer and an exclusive bargaining representative before January 1, 2021, these provisions do not apply to the school district until the expiration or renewal of that collective bargaining agreement.
  (STATUS: Introduced 02/19/20. From committee chair with author's amendments; re-referred to Committee on P.E. & R.; read second time and amended on 05/04/20. Re-referred to Committee on P.E. & R. on 05/05/20.)

Divestment Proposals (CalPERS and CalSTRS Only)

AB 2780 (Holden)
Existing law, upon the passage of a federal law imposing sanctions on the government of Turkey for failure to officially acknowledge its responsibility for the Armenian Genocide, prohibits the CalPERS and CalSTRS boards from making additional or new investments, or renewing existing investments, of public employee retirement funds in an investment vehicle in the government of Turkey that is issued by the government of Turkey or that is owned by the government of Turkey. Existing law requires the boards to liquidate existing investments in the government of Turkey within 18 months of the passage of the above-described federal law.

This bill, upon the passage of a federal law imposing sanctions on the government of Turkey for imposing an economic blockade of Armenia, would prohibit the boards that administer the Public Employees' Retirement Fund, the Legislators' Retirement Fund, the State Teachers' Retirement Fund, the Judges' Retirement Fund, the Judges' Retirement Fund II, the Volunteer Firefighters Fund, and the General Fund portion of the University of California Retirement Fund from making additional or new investments or renew existing investments of public employee retirement funds in any investment vehicle that is issued or owned by the government of Azerbaijan or Turkey. The bill would require the boards to liquidate investments in the government of Azerbaijan or Turkey within 18 months of the passage of the above-described law.

The bill would not apply the above provisions to an investment vehicle if the governing body of the financial institution issuing the investment vehicle, by resolution, adopts a policy not to renew existing, expand existing, or engage in new, discriminatory practices in furtherance of or in compliance with the economic blockade of Armenia by the governments of Turkey and Azerbaijan. The bill would require a copy of the resolution to be submitted to the Treasurer and the chief administrative officer of each public employee retirement fund, accompanied by a certification, under penalty of perjury, that the adopted policy is being complied with by the financial institution. By expanding the scope of the crime of perjury, the bill would impose a state-mandated local program.

The bill would also require these boards to make specified reports to the Legislature and the Governor regarding these actions within one year of the passage of a federal law imposing those sanctions on the government of Azerbaijan or Turkey. The bill would specify that its provisions do not require a board to take any action that the board determines in good faith is inconsistent with its constitutional fiduciary responsibilities to the retirement system.

The bill would indemnify from the General Fund and hold harmless the present, former, and future board members, officers, and employees of, and investment managers under contract with, the boards, in connection with actions relating to these investments. The bill would repeal the above-described prohibited investment and reporting provisions on January 1, 2026, or if a determination is made by the Legislature, the Department of State, the Congress of the United States, or another appropriate federal agency that the government of either Turkey or both Turkey and Azerbaijan has adopted a policy to cease their economic blockade of Armenia.

(STATUS: Introduced 02/20/20. Original bill language replaced in full on 05/04/20. From committee chair, with author's amendments: Amend, and re-refer to Committee on P.E. & R. Read second time and amended on 05/04/20. Referred to Committee on P.E. & R. on 05/05/20.)

Federal Legislation Affecting '37 Act Systems

The Federal SECURE Act (HR 1865)

On December 20, 2019, the President signed HR 1865, which includes the Setting Every Community Up for Retirement Enhancement Act of 2019 ("SECURE Act"), into law. Two provisions affect the '37 Act Systems.

Section 114 of the SECURE Act

Prior to passage of the SECURE Act, tax qualified plans were required to distribute a member's entire benefit or begin to distribute a member's benefit no later than the "required beginning date." Internal Revenue Code (IRC) § 401(a)(9) defined required beginning date as April 1 of the calendar year following the later of (i) the calendar year in which the member attains age 70½ or (ii) the member retires.

Section 114 of the SECURE Act increases the required beginning date age factor from age 70½ to age 72. Under this new guidance, to satisfy the required minimum distribution rules, members must begin receiving benefits by April 1 of the calendar year following the later of (i) the calendar year in which the member attains age 72, or the member retires. The new rule applies to individuals who turn 70½ after December 31, 2019. For anyone who turned 70½ in 2019, the first RMD must still be taken by April 1, 2020**.** Individuals turning 70½ in 2020 or later will not be required to take their first withdrawal until April 1 of the year following their 72nd birthday.

The SACRS Legislative Committee is reviewing whether an amendment to the CERL will be necessary in order to conform the CERL to Section 114 of the SECURE Act. In addition, the OCERS team will review and amend as necessary our §401(a)(9) regulations or procedures to ensure the higher distribution age is reflected. Unless further extended by the Secretary of the Treasury, any necessary amendments will be required to be made no later than the last day of the first plan year beginning on or after January 1, 2024. Therefore, calendar year Systems like OCERS must amend affected regulations by December 31, 2024 (fiscal year Systems will have until June 30, 2025).

Section 402 of the SECURE Act

IRS Form 945, Annual Return of Withheld Federal Income Tax, is typically used to report federal income taxes withheld on distributions made from a retirement system. IRC §6651 imposes a tax penalty for the failure to timely file a Form 945.

Section 402 of the SECURE Act increases the minimum tax penalty imposed by IRC §6651. As amended, IRC §6651 allows for the imposition of a tax equal to at least the lesser of $435 (to be adjusted for inflation) or 100% of the amount required to be shown as tax on the return where the Form 945 is not filed within 60 days of its due date (including any applicable filing extensions). The penalty may still be waived if a System can show reasonable cause for the failure to timely file a Form 945.

The increase in penalties applies to IRS Forms 945 with a due date after December 31, 2019, including extensions. While no amendments or policy updates may be required as a result of this change, future failures to timely file Form 945 may trigger increased penalties.

Attachments

Submitted by:

Gina M. Ratto
General Counsel

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

OCERS BOARD OF RETIREMENT
June 15, 2020 MEETING

LEGISLATIVE UPDATE – ATTACHMENT

2019 - 2020 CALIFORNIA STATE LEGISLATIVE SESSION
BILLS OF INTEREST

New or updated information in bold text

AB 462 (Rodriguez)
This bill would require the Boards of Administration of CalPERS and CalSTRS to each provide a report to the Legislature, commencing March 1, 2021, and annually thereafter, on the status of achieving appropriate objectives and initiatives, to be defined by the boards, regarding participation of emerging managers responsible for asset management within each system's portfolio of investments. The bill would require that the report be based on contracts that the system enters into on and after January 1, 2020, and be based on information from the prior fiscal year. The bill would require each report to include certain elements and would require the boards to define emerging manager for purposes of these provisions.
(STATUS: Introduced 02/11/19. Passed out of the Assembly and ordered to the Senate on April 22, 2019. Read second time in the Senate, amended, and re-referred to Com. on RLS. on 05/21/19.)

AB 664 (Cooper, Bonta and, Gonzalez)
Existing law establishes a workers' compensation system, administered by the Administrative Director of the Division of Workers' Compensation, to compensate an employee for injuries sustained in the course of employment. Existing law creates a disputable presumption that specified injuries sustained in the course of employment of a specified member of law enforcement or a specified first responder arose out of and in the course of employment. Existing law also makes an employer liable only for the percentage of permanent disability directly caused by the injury arising out of and occurring in the course of employment. Existing law requires apportionment of permanent disability to be based on causation, and requires a physician's report addressing the issue of permanent disability to include an apportionment determination in order for the report to be considered complete on that issue. Existing law exempts certain injuries, including the above-described injuries, from the provisions requiring apportionment.

This bill would define "injury," for certain state and local firefighting personnel, peace officers, certain hospital employees, and certain fire and rescue services coordinators who work for the Office of Emergency Services to include being exposed to or contracting, on or after January 1, 2020, a communicable disease, including coronavirus disease 2019 (COVID-19), that is the subject of a state or local declaration of a state of emergency that is issued on or after January 1, 2020. The bill would create a conclusive presumption, as specified, that the injury arose out of and in the course of the employment. The bill would apply to injuries that occurred prior to the declaration of the state of emergency. The bill would also exempt these provisions from the apportionment requirements. This bill would declare that it is to take effect immediately as an urgency statute.
(STATUS: Introduced 02/15/19; original bill language replaced in full on 04/17/20. From committee chair with author's amendments. Amend and re-referred to committee. Read second time, amended, and re-referred to Committee on L., P.E. & R. on 05/18/20.)

AB 979 (Reyes)
This bill would require the Boards of Administration of CalPERS and CalSTRS to each provide a report to the Legislature, commencing March 1, 2021, and annually thereafter, on the status of achieving appropriate objectives and initiatives, to be defined by the boards, regarding participation of emerging managers responsible for asset management within each system's portfolio of investments. The bill would require that the report be based on contracts that the system enters into on and after January 1, 2020, and be based on information from the prior fiscal year. The bill would require each report to include certain elements and would require the boards to define emerging manager for purposes of these provisions.
(STATUS: Introduced 02/21/19 as a bill relating to the Judges' Retirement System II and was amended on 01/06/2020 to relate to emerging manager asset management. Passed out of the Assembly and ordered to the Senate on 01/27/20. Read first time in Senate; referred to Committee on RLS. for assignment on 01/28/20.)

AB 992 (Mullin)
The Brown Act generally requires that the meetings of legislative bodies of local agencies be conducted openly. That act defines "meeting" for purposes of the act and prohibits a majority of the members of a legislative body, outside a meeting authorized by the act, from using a series of communications of any kind to discuss, deliberate, or take action on any item of business that is within the subject matter jurisdiction of the legislative body. This bill would provide that the prohibition described above does not apply to the participation, as defined, in an internet-based social media platform, as defined, by a majority of the members of a legislative body, provided that a majority of the members do not discuss among themselves, as defined, business of a specific nature that is within the subject matter jurisdiction of the legislative body of the local agency.
(STATUS: Introduced 02/21/19. Passed out of the Assembly and ordered to the Senate on 01/30/20. Read first time in Senate; to Committee on RLS. for assignment on 01/30/20.)

AB 1107 (Chu) Amended 05/26/20
Existing law, the California Emergency Services Act, authorizes the Governor to proclaim a state of emergency when specified conditions of disaster or extreme peril to the safety of persons and property exist, and to exercise certain powers in response to that emergency. The act also authorizes the governing body of a city, county, city and county, or an official designated by ordinance adopted by that governing body, to proclaim a local emergency, and to exercise certain powers in response to that emergency. Existing law defines the terms "state of emergency" and "local emergency" to mean the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by, among other things, fire, storm, riot, epidemic, or cyberterrorism.

This bill would require all proclamations, communications, materials, and announcements made by the Governor or a state agency related to a duly proclaimed state of emergency to be made available in all languages spoken by a substantial number of non-English-speaking people. The bill would define the term "substantial number of non-English-speaking people" to mean a group of people that does not speak English or has limited English proficiency and makes up 3% or more of the state's population. This bill would also require each county to translate all emergency-related proclamations, communications, materials, and announcements made by the county related to a duly proclaimed state of emergency or a local emergency duly proclaimed by the county into all languages spoken by 1,000 or more of the county's residents.
(STATUS: Introduced 02/21/19; original bill language replaced in full on 04/22/20 **and again on 05/26/20**. **From committee chair, with author's amendments: Amend, and re-refer to committee. Read second time, amended, and re-referred to Committee on L., P.E. & R. on 05/26/20.)**

AB 1945 (Sala)
Under existing law, the California Emergency Services Act, the Governor is authorized to proclaim a state of emergency, as defined, under specified circumstances. The California Emergency Services Act also authorizes the governing body of a city, county, city and county, or an official designated by ordinance adopted by that governing body, to proclaim a local emergency, as defined. A person who violates any provision of the act is guilty of a misdemeanor.

This bill would, for purposes of the California Emergency Services Act, define "first responder" as an employee of the state or a local public agency who provides emergency response services, including a peace officer, firefighter, paramedic, emergency medical technician, public safety dispatcher, public safety telecommunicator, or emergency response communication employee. The bill would provide that the definition of first responder described above does not confer a right to, or entitlement upon, an employee or prospective employee to obtain a retirement benefit formula for an employment classification that is not included in, or is expressly excluded from, that formula, as specified. The bill would prohibit an employer from offering, or indicating an ability to offer to an employee or prospective employee a retirement benefit formula for an employment classification that is not included in, or is expressly excluded from, that formula because of the definition of "first responder."
(STATUS: Introduced 01/17/20. Referred to Committees on G.O. and P.E. & R. on 01/30/20. From Committee Chair, with author's amendments: Amend, and re-refer to Committee on G.O. Read second time and amended on 05/04/20. Re-referred to Committee on G.O. on 05/05/20. From committee: Do pass and re-referred to Committee on APPR. on 05/13/20.)

AB 1975 (Bigelow)
Existing law, the Public Employees' Medical and Hospital Care Act (PEMHCA), which is administered by the Board of Administration of the Public Employees' Retirement System, authorizes the board to contract for health benefit plans for employees and annuitants, as defined, which may include employees and annuitants of contracting agencies. PEMHCA prescribes requirements for the contributions of contracting agencies and their employees and annuitants for these benefits and creates alternative funding formulations for specified counties and districts.

This bill would create an alternative funding formulation for employer contributions for postretirement health care benefits for specified employees of the County of Madera. The bill would apply its provisions to unrepresented and extra help employees, appointed department heads, and represented employees, as specified, provided that these employees are otherwise eligible. The bill would require the employees to have a specified minimum amount of service credit, including at least 5 years of service with the county. If the employees are represented, the bill would require a mutually agreed-upon memorandum of understanding regarding contributions for postretirement health benefits consistent with the bill's provisions to be in place. With regard to unrepresented and extra help employees and appointed department heads, the bill would require a specified resolution to have been adopted by a majority of the county board of supervisors that provides for contributions for postretirement health benefits. Upon satisfaction of these conditions, the bill would prescribe a schedule pursuant to which the county would pay employer contributions for postretirement health care benefits for the employees based on specified percentages associated with the employee's credited years of service, that would reach 100% when the employee attains 20 years of service. The bill would apply these provisions to employees of the County of Madera first hired and appointed on and after the date the bill becomes effective.

(STATUS: Introduced 02/22/20. Original bill language replaced in full on 05/04/20. From committee chair, with author's amendments: Amend, and re-refer to Committee on P.E. & R. Read second time and amended on 05/04/20. Re-referred to Committee on P.E. & R. on 05/05/20.)

AB 2226 (Voepel)
The Personal Income Tax Law imposes a tax on individual taxpayers measured by the taxpayer's taxable income for the taxable year, but excludes certain items of income from the computation of tax, including an exclusion for combat-related special compensation. This bill, for taxable years beginning on or after January 1, 2021, and before January 1, 2031, would exclude from gross income specified amounts of retirement pay received by a taxpayer from the federal government for service performed in the uniformed services, as defined, during the taxable year. Current law requires any bill authorizing a new tax expenditure to contain, among other things, specific goals, purposes, and objectives that the tax expenditure will achieve, detailed performance indicators, and data collection requirements. The bill also would include additional information required for any bill authorizing a new tax expenditure. This bill would take effect immediately as a tax levy.
(STATUS: Introduced 02/12/20. Referred to Committee on REV. and TAX on 02/20/20. Hearing postponed by committee on 03/16/20.)

AB 2378 (Cooper)
The PERL requires that upon the death of certain members after retirement and while receiving a retirement allowance, a specified sum of money be paid to the member's designated beneficiary. Existing law provides that the additional employer contributions required to fund these benefits be computed as a level percentage of member compensation, and requires the contributions to be deposited in the Public Employees' Retirement Fund. This bill would authorize the CalPERS Board, beginning on or after January 1, 2021, to adjust the death benefit amounts following each actuarial valuation to reflect changes in the All Urban California Consumer Price Index, as specified. By authorizing the board to increase contributions deposited in the Public Employees' Retirement Fund, this bill would make an appropriation.
(STATUS: Introduced 02/18/20. Referred to Committee on P.E. and R. on 02/24/20.)

AB 2394 (Cooper)
Pursuant to the PERL, CalPERS provides a defined benefit to members of the system, based on final compensation, credited service, and age at retirement, subject to certain variations. Existing law generally provides that retirement allowances are adjusted annually to reflect increases in the cost of living in relation to the consumer price index, as defined. Existing law defines "consumer price index" for these purposes to mean the United States city average "Consumer Price Index for All Urban Consumers," effective January 1, 1978. Existing law establishes the Department of Industrial Relations as an instrumentality of California government. This bill would change the definition of "consumer price index," effective January 1, 2021, to instead refer to the California Consumer Price Index for All Urban Consumers for all items, as determined by the Department of Industrial Relations.
(STATUS: Introduced 02/18/20. Referred to Committee on P.E. and R. on 02/24/20.)

AB 2452 (C. Garcia)
Current law authorizes the California State Auditor to establish a high-risk local government agency audit program to identify, audit, and issue reports on any local government agency, including any city, county, or special district, or any publicly created entity that the California State Auditor identifies as being at high risk for the potential of waste, fraud, abuse, or mismanagement or that has major challenges associated with its economy, efficiency, or effectiveness. Existing law authorizes the California State Auditor to consult with the

Controller, the Attorney General, and other state agencies in identifying local government agencies that are at high risk. Current law also authorizes the legislative body of a local agency or a district to enter into an association for the purposes of attending the Legislature and the Congress of the United States, and any committees thereof, and presenting information regarding legislation that the legislative body or the district deems to be beneficial or detrimental to the local agency or the district.

This bill would authorize the California State Auditor to include in the high-risk local government agency audit program any local agency or district association that the California State Auditor identifies as being at high risk for the potential of waste, fraud, abuse, or mismanagement or that has major challenges associated with its economy, efficiency, or effectiveness.
(STATUS: Introduced 02/19/20. Referred to Committee on A. & A.R. on 02/27/20.)

AB 2473 (Cooper)
The California Public Records Act requires state and local agencies to make their records available for public inspection, unless an exemption from disclosure applies. Existing law excludes from the disclosure requirement certain records regarding alternative investments in which public investment funds invest. This bill would exempt from disclosure under the act specified records regarding an internally managed private loan made directly by a public investment fund, including quarterly and annual financial statements of the borrower or its constituent owners, unless the information has already been publicly released by the keeper of the information.
(STATUS: Introduced 02/19/20. Referred to Committee on P.E. & R. and JUD on 03/12/20**. From committee: Do pass and re-refer to the Committee on APPR on 05/05/20.)**

AB 2510 (Cooley)
The CalSTRS Defined Benefit Program provides a defined benefit to members of the program, based on final compensation, credited service, and age at retirement, subject to certain variations. Current law authorizes the CalSTRS board, upon a finding by the board that necessary investment expertise is not available within existing civil service classifications, and with approval of the State Personnel Board, to contract with qualified investment managers, as provided. This bill would additionally authorize the board to contract with investment advisers, as defined, upon the same finding by the board and approval by the State Personnel Board. The bill would, pursuant to a policy adopted by the board, authorize the board to establish a competitive bidding process and to specify the contract terms and conditions the board solely deems necessary and prudent to contract with qualified investment managers and investment advisers.
(STATUS: Introduced 02/19/20. Referred to Committee on P.E. & R. on 02/27/20. **First hearing canceled at the request of author on 05/04/20.**)

AB 2659 (Chen)
The Information Practices Act of 1977 prescribes a set of requirements, prohibitions, and remedies applicable to public agencies with regard to their collection, storage, and disclosure of personal information. The act specifically requires an agency to establish rules of conduct for persons involved in the design, development, operation, disclosure, or maintenance of records containing personal information and to instruct these people with respect to the rules and the requirements of the act. This bill would require that the above-described rules of conduct include security awareness and training policies and procedures.
(STATUS: Introduced 02/20/20. Referred to Committee on P. & C.P. on 03/12/20.)

AB 2676 (Quirk)
Current law exempts from disclosure critical infrastructure information, as defined, that is voluntarily submitted to the Office of Emergency Services for use by that office, including the identity of the person who or entity that voluntarily submitted the information. This law defines "voluntarily submitted" for that purpose. This bill would remove the restriction that the submission be voluntary, thereby expanding that exemption.

Current constitutional provisions require that a statute that limits the right of access to the meetings of public bodies or the writings of public officials and agencies be adopted with findings demonstrating the interest protected by the limitation and the need for protecting that interest. This bill would make legislative findings to that effect. The California Constitution also requires local agencies, for the purpose of ensuring public access to the meetings of public bodies and the writings of public officials and agencies, to comply with a statutory enactment that amends or enacts laws relating to public records or open meetings and contains findings demonstrating that the enactment furthers the constitutional requirements relating to this purpose. This bill would make legislative findings to that effect.
(STATUS: Introduced 02/20/20. Referred to Committee on JUD on 03/02/20. Hearing postponed by Committee on 03/17/20.)

AB 2768 (Kalra)
Existing law authorizes the use of a digital signature in any written communication with a public entity, as defined, in which a signature is required or used. Under existing law, if a public entity elects to use a digital signature, that digital signature has the same force and effect as the use of a manual signature if it embodies all of specified attributes, including being unique to the person using it and conforming to regulations adopted by the Secretary of State. Existing law requires the Secretary of State to have adopted the initial regulations for these provisions no later than January 1, 1997, including seeking the advice of public and private entities in developing these regulations and holding at least one public hearing to receive comments before adopting the regulations.

This bill would delete the above-described language requiring the adoption of the initial regulations, as prescribed. The bill would instead require digital signatures to conform to regulations adopted by the Secretary of State pursuant to specified procedures. The bill would further require the Secretary of State to adopt emergency regulations to provide appropriate and timely guidance to public entities and the public generally regarding the signature requirements and to make the regulatory changes needed to update these provisions no later than March 1, 2022, in accordance with the Administrative Procedure Act. The bill would make the emergency regulations adopted pursuant to these provisions effective only until nonemergency, final regulations are adopted and become effective through the regular rulemaking process.
(STATUS: Introduced 02/20/20; original bill language replaced in full on 05/04/20**. From committee chair, with author's amendments: Amend, and re-refer to Committee on JUD. Read second time and amended on 05/04/20. Re-referred to Committee on JUD. on 05/05/20.)**

AB 2780 (Holden)
Existing law, upon the passage of a federal law imposing sanctions on the government of Turkey for failure to officially acknowledge its responsibility for the Armenian Genocide, prohibits the CalPERS and CalSTRS boards from making additional or new investments, or renewing existing investments, of public employee retirement funds in an investment vehicle in the government of Turkey that is issued by the government of Turkey or that is owned by the government of Turkey. Existing law requires the boards to liquidate existing investments in the government of Turkey within 18 months of the passage of the above-described federal law.

This bill, upon the passage of a federal law imposing sanctions on the government of Turkey for imposing an economic blockade of Armenia, would prohibit the boards that administer the Public Employees' Retirement Fund, the Legislators' Retirement Fund, the State Teachers' Retirement Fund, the Judges' Retirement Fund, the Judges' Retirement Fund II, the Volunteer Firefighters Fund, and the General Fund portion of the University of California Retirement Fund from making additional or new investments or renew existing investments of public employee retirement funds in any investment vehicle that is issued or owned by the government of Azerbaijan or Turkey. The bill would require the boards to liquidate investments in the government of Azerbaijan or Turkey within 18 months of the passage of the above-described law.

The bill would not apply the above provisions to an investment vehicle if the governing body of the financial institution issuing the investment vehicle, by resolution, adopts a policy not to renew existing, expand existing, or engage in new, discriminatory practices in furtherance of or in compliance with the economic blockade of Armenia by the governments of Turkey and Azerbaijan. The bill would require a copy of the resolution to be submitted to the Treasurer and the chief administrative officer of each public employee retirement fund, accompanied by a certification, under penalty of perjury, that the adopted policy is being complied with by the financial institution. By expanding the scope of the crime of perjury, the bill would impose a state-mandated local program.

The bill would also require these boards to make specified reports to the Legislature and the Governor regarding these actions within one year of the passage of a federal law imposing those sanctions on the government of Azerbaijan or Turkey. The bill would specify that its provisions do not require a board to take any action that the board determines in good faith is inconsistent with its constitutional fiduciary responsibilities to the retirement system.

The bill would indemnify from the General Fund and hold harmless the present, former, and future board members, officers, and employees of, and investment managers under contract with, the boards, in connection with actions relating to these investments. The bill would repeal the above-described prohibited investment and reporting provisions on January 1, 2026, or if a determination is made by the Legislature, the Department of State, the Congress of the United States, or another appropriate federal agency that the government of either Turkey or both Turkey and Azerbaijan has adopted a policy to cease their economic blockade of Armenia.
(STATUS: Introduced 02/20/20. Original bill language replaced in full on 05/04/20. From committee chair, with author's amendments: Amend, and re-refer to Committee on P.E. & R. Read second time and amended on 05/04/20. Referred to Committee on P.E. & R. on 05/05/20.

AB 2937 (Fong)
The CERL prescribes the methods for calculating a non-service-connected disability retirement for different membership classifications and for the purpose of calculating reciprocal benefits. In these instances, the sum of allowance may vary depending on whether or not the retirement board finds, in its opinion, the member's disability is due to intemperate use of alcoholic liquor or drugs, among other things. In this regard, the CERL conditions the grant of a disability retirement pension by a county or district on a finding by the board that the member's disability is not the result of intemperate use of alcoholic liquor or drugs.

This bill would create an optional provision, to be elected by a county board of supervisors, that would remove the retirement board's assessment regarding the intemperate use of alcoholic liquor or drugs as a condition to the disability retirement.
(STATUS: Introduced 02/21/20. Read first time 02/24/20. Referred to Committee on P.E. & R. on 03/05/20.)

AB 2967 (O'Donnell) Amended 05/04/20
Existing law, the Public Employees' Medical and Hospital Care Act, which is administered by the CalPERS Board of Administration, governs the funding and provision of postemployment health care benefits for eligible retired public employees and their beneficiaries. The act deems a surviving spouse or other eligible family member of certain firefighters or peace officers, whose deaths occur as a result of injury or disease arising out of their official duties, to be an annuitant, as specified, for purposes of enrollment in a health benefit plan, if the spouse or family member is uninsured. Existing law requires the employer of the deceased firefighter or peace officer to notify the board within 10 business days of the death of the employee, among other things, if that spouse or family member may be eligible for enrollment. This bill would reduce the period within which an employer is to provide notice to the board, as described above, to within seven calendar days.
(STATUS: Introduced 02/21/20. **Original bill language replaced in full on 05/04/20. From committee chair, with author's amendments: Amend and re-refer to Committee on P.E. & R; read second time and amended on 05/04/20. Re-referred to Committee on P.E. & R. From committee: Do pass and re-refer to Committee on APPR. on 05/05/20.)**

AB 2998 (Kiley)
The CalSTRS Defined Benefit Program provides a defined benefit to members of the program based on final compensation, credited service, and age at retirement, subject to certain variations. The Defined Benefit Program is funded by employer and employee contributions, as well as investment returns and state appropriations, which are deposited or credited to the Teachers' Retirement Fund. Existing law requires the governing board of a school district to adopt a schedule of salaries to be paid to the certificated employees of the school district. Existing law prohibits the governing board of a school district from drawing orders for the salary of any teacher in violation of a salary schedule based on a uniform allowance for years of training and years of experience, or on other criteria agreed to by the school district and the exclusive representative of the certificated employees of the school district.

This bill would authorize a school district to offer a defined contribution plan to certificated employees and would exclude a certificated employee who opts into a defined contribution plan from membership in the Defined Benefit Program. The bill would authorize a school district to offer a higher salary or lower contribution rate to a defined contribution plan as an incentive for a certificated employee to opt into a defined contribution plan. The bill would authorize a certificated employee to negotiate a salary or contribution rate for a defined contribution plan outside of the school district's salary schedule. The bill would provide that, to the extent the bill's provisions conflict with any provision of a collective bargaining agreement entered into by a public school employer and an exclusive bargaining representative before January 1, 2021, these provisions do not apply to the school district until the expiration or renewal of that collective bargaining agreement.
(STATUS: Introduced 02/19/20. From committee chair with author's amendments; re-referred to Committee on P.E. & R.; read second time and amended on 05/04/20. Re-referred to Committee on P.E. & R. on 05/05/20.)

AB 3249 (Fong)
Current law requires state and local public retirement systems to submit audited financial statements to the Controller at the earliest practicable opportunity within 6 months of the close of each fiscal year, and requires the Controller, within 12 months of receipt of the information, to compile and publish a report on the financial condition of all state and local public retirement systems. This bill would additionally require the Controller to post the report on the financial condition of all state and local public retirement systems on the Controller's internet website.
(STATUS: Introduced 02/21/2020. Read first time on 02/24/20. Referred to Committee on P.E. & R. on 03/09/20.)

SB 53 (Wilk)
The Bagley-Keene Open Meeting Act requires that all meetings of a state body, as defined, be open and public and that all persons be permitted to attend and participate in a meeting of a state body, subject to certain conditions and exceptions. This bill would specify that the definition of "state body" includes an advisory board, advisory commission, advisory committee, advisory subcommittee, or similar multimember advisory body of a state body that consists of 3 or more individuals, as prescribed, except a board, commission, committee, or similar multimember body on which a member of a body serves in his or her official capacity as a representative of that state body and that is supported, in whole or in part, by funds provided by the state body, whether the multimember body is organized and operated by the state body or by a private corporation. This bill would declare that it is to take effect immediately as an urgency statute.
(STATUS: Introduced 12/10/18. Placed on APPR. suspense file on 08/14/19. Heard on 08/30/19. Held in committee and under submission on 08/30/19.)

SB 266 (Leyva)
Under existing law, CalPERS is responsible for correcting errors and omissions in the administration of the system and the payment of benefits. Existing law requires the board to correct all actions taken as a result of errors or omissions of the state or a contracting agency, in accordance with certain procedures. This bill would establish new procedures under PERL for cases in which CalPERS determines that the benefits of a member or annuitant are, or would be, based on disallowed compensation that conflicts with PEPRA and other specified laws and thus impermissible under PERL. The bill would also apply these procedures retroactively to determinations made on or after January 1, 2017, if an appeal has been filed and the employee member, survivor, or beneficiary has not exhausted their administrative or legal remedies. At the threshold, after determining that compensation for an employee member reported by the state, school employer, or a contracting agency is disallowed, the bill would require the applicable employer to discontinue the reporting of the disallowed compensation. The bill would require that contributions made on the disallowed compensation, for active members, be credited against future contributions on behalf of the state, school employer, or contracting agency that reported the disallowed compensation and would require that the state, school employer, or contracting agency return to the member any contributions paid by the member or on the member's behalf.

With respect to retired members, survivors, or beneficiaries whose benefits are based on disallowed final compensation, the bill would require PERS to adjust the benefit to reflect the exclusion of the disallowed compensation, and provide that contributions made on the disallowed compensation be credited against future contributions on behalf of the employer entity that reported the disallowed compensation. Additionally, if specified conditions are met, the bill would require the employing entity to refund overpayment costs to the system and to pay retired members, survivors, and beneficiaries whose benefits have been reduced an annuity or a lump sum, as prescribed, that reflects the difference between the monthly allowance that was based on the disallowed compensation and the adjusted monthly allowance calculated without the disallowed compensation, as provided. The bill would require the system to provide certain notices in this regard. This bill would require the system to provide confidential contact information of retired members, and their survivors and beneficiaries, who are affected by these provisions to the relevant employing entities, the confidentiality of which the entities would be required to maintain.

The bill would authorize the state, a school employer, as specified, or a contracting agency, as applicable, to submit to the system an additional compensation item proposed to be included or contained in a memorandum of understanding or collective bargaining agreement on and after January 1, 2020, that is intended to form the basis of a pension benefit calculation order for PERS to review its consistency with PEPRA and other laws, as specified, and would require PERS to provide guidance regarding the review within 90 days, as specified. The bill would require PERS to publish notices regarding proposed compensation language submitted to the system for review and the guidance given by the system that is connected with it. For educational entities that participate in the system, the final responsibility for funding payments to the system and to retired members, survivors, and beneficiaries would belong to the educational entity that is the actual employer of the employee.
(STATUS: Introduced 02/12/19. Read third time in Assembly; ordered to the Senate; Senate concurred in amendments; ordered to engrossing and enrolling on 09/12/19. Withdrawn from engrossing and enrolling, and ordered held at the Desk on 09/13/19.)

SB 430 (Wieckowski)
PEPRA prohibits a public employer offering a defined benefit pension plan from exceeding specified retirement formulas for new members and prohibits an enhancement of a public employee's retirement formula or benefit adopted after January 1, 2013, from applying to service performed prior to the operative date of the enhancement. PEPRA defines "new member" to mean, among other things, an individual who becomes a member of any public retirement system for the first time on or after January 1, 2013, and who was not a member of any other public retirement system prior to date. Existing law creates the Judges' Retirement System II, which is administered by the Board of Administration of the Public Employees' Retirement System, for the provision of retirement and other benefits to specified judges and their beneficiaries.

This bill would grant a judge who was elected to office in 2012, but did not take office until on or after January 1, 2013, the option of making a one-time, irrevocable election to have a pre-January 1, 2013, membership status in the Judges' Retirement System II for service accrued after on and after July 1, 2020. The bill would require the election to be made during a 30-day period beginning March 1, 2020. A judge making this election would no longer be a new member under specified provisions of PEPRA. The election would apply prospectively only, and membership rights and obligations that accrued based on service subject to PEPRA prior to July 1, 2020, would remain unchanged. The bill would specify that the Public Employees' Retirement System is not obligated to inform or locate a person who may be eligible to make the election and that its provisions do not affect the Legislature's reserved right to increase contributions or reduce benefits for purposes of the Judges' Retirement System II.
(STATUS: Introduced 02/21/19. Passed out of the Senate and ordered to the Assembly on 05/21/19. Referred to the Committee on P.E. & R. on 05/30/19. Hearing cancelled at request of author on 06/26/19.)

SB 749 (Durazo)
The California Public Records Act provides that nothing in the act requires the disclosure of corporate proprietary information including trade secrets, among other things. This bill would provide that specified

records of a private industry employer that are prepared, owned, used, or retained by a public agency are not trade secrets and are public records, including certain records relating to employment terms and conditions of employees working for a private industry employer pursuant to a contract with a public agency, if those wages, benefits, working hours and other employment terms and conditions relate to work performed under the contract, records of compliance with local, state, or federal domestic content requirements, and records of a private industry employer's compliance with job creation, job quality, or job retention obligations contained in a contract or agreement with a state or local agency. The bill, however, would exclude contracts between a public agency and a private industry employer entered into on or before January 1, 2020, and records that include communications between the state or local agency and specified state or local officials, on matters posing a threat to the security of a public building, a threat to the security of essential public services, or a threat to the public's right of access to public services or public facilities, from these provisions. Because the bill would require local officials to perform additional duties, it would impose a state-mandated local program.
(STATUS: Introduced 02/22/19. From committee with author's amendments. Read second time and amended. Re-referred to Committee on JUD. on 09/10/19. Assembly Rule 96 suspended. Withdrawn from committee and ordered to third reading on 09/12/19. Ordered to inactive file on request of Assembly Member Calderon on 09/13/19.)

SB 783 (Senate Committee on Labor, Public Employees and Retirement)
The CERL authorizes counties to establish retirement systems pursuant to its provisions for the purpose of providing pension and death benefits to county and district employees. This bill would correct several erroneous and obsolete cross-references within CERL.
(STATUS: Introduced 03/07/19. Passed out of the Senate and ordered to the Assembly on 05/02/19. Referred to Committee on P.E. & R. on 05/16/19.)

SB 931 (Wieckowski)
The Brown Act requires meetings of the legislative body of a local agency to be open and public and also requires regular and special meetings of the legislative body to be held within the boundaries of the territory over which the local agency exercises jurisdiction, with specified exceptions. Current law authorizes a person to request that a copy of an agenda, or a copy of all the documents constituting the agenda packet, of any meeting of a legislative body be mailed to that person. This bill would require, if the local agency has an internet website, a legislative body or its designee to email a copy of, or website link to, the agenda or a copy of all the documents constituting the agenda packet if the person requests that the items be delivered by email. The bill would require, where the local agency determines it is technologically infeasible to send a copy of all documents constituting the agenda packet or a website link containing the documents by electronic mail or by other electronic means, the legislative body or its designee to send by electronic mail a copy of the agenda or a website link to the agenda and mail a copy of all other documents constituting the agenda packet in accordance with the mailing requirements.
(STATUS: Introduced 02/05/20. Referred to Committee on GOV. and F. on 02/12/20. From committee with author's amendments; read second time and amended; re-referred to Committee on GOV. and F. on 04/02/20.)

SB 1042 (Pan)
The California Secure Choice Retirement Savings Trust Act establishes the CalSavers Retirement Savings Program to be administered by the California Secure Choice Retirement Savings Investment Board. Existing law requires the Treasurer, on behalf of the board, to appoint an executive director, who is not a member of the board and who serves at its pleasure. Existing law requires eligible employers to offer a payroll deposit retirement savings arrangement so that eligible employees may contribute a portion of their salary or wages to a retirement

savings program account in the program, as specified. Existing law requires the board to take various actions upon implementation of the program and, for to up 3 years following its initial implementation of the program, requires the board to establish managed accounts invested in United States Treasuries, myRAs, or similar investments. Existing law states that the program is implemented as of January 1, 2017.

This bill would rename the California Secure Choice Retirement Savings Trust Act as the CalSavers Retirement Savings Trust Act, the body that administers the act as the CalSavers Retirement Savings Board, and make conforming changes in this regard. The bill would make various changes in the act to reflect that it has been implemented, including eliminating the requirement to establish managed accounts invested in United States Treasuries, myRAs, or similar investments described above. The bill would authorize the board to delegate rulemaking authority to its executive director. The bill would authorize an employee to opt out of participation in the program by telephone and would eliminate a condition relating to contribution amounts that depends on the length of time that an employee has contributed to the program.

Current law, the Control, Regulate and Tax Adult Use of Marijuana Act (AUMA), an initiative measure approved as Proposition 64 at the November 8, 2016, statewide general election, authorizes a person who obtains a state license under AUMA to engage in commercial adult-use cannabis activity pursuant to that license and applicable local ordinances. Existing law, the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA), among other things, consolidates the licensure and regulation of commercial medicinal and adult-use cannabis activities. MAUCRSA generally divides responsibility for the state licensure and regulation of commercial cannabis activity among the Department of Food and Agriculture, the State Department of Public Health, and the Bureau of Cannabis Control, which are generally referred to as licensing authorities. This bill would require the licensing authorities described above to provide specified information regarding licensees to the CalSavers Retirement Savings Board upon request by the board.
(STATUS: Introduced on 02/18/20. Referred to Committee on L. P.E. & R. and B., P. & E.D. on 02/27/20. Set for hearing March 25; hearing postponed by committee on 03/18/20. **On 05/12/20, referral to Committee on B., P. & E.D. rescinded due to the shortened 2020 Legislative Calendar.)**

SB 1159 (Hill)
Existing law establishes a workers' compensation system, administered by the Administrative Director of the Division of Workers' Compensation, to compensate an employee for injuries sustained in the course of employment. Existing law creates a disputable presumption that specified injuries sustained in the course of employment of a specified member of law enforcement or a specified first responder arose out of and in the course of the employment.

This bill would, until an unspecified date, define "injury" for a critical worker, as described, to include illness or death that results from exposure to coronavirus disease 2019 (COVID-19) under specified circumstances. The bill would create a disputable presumption, as specified, that an injury that develops or manifests itself while a critical worker is employed arose out of and in the course of the employment.
(STATUS: Introduced 02/20/20; original bill language replaced in full on 04/22/20. From committee with author's amendments; read second time and amended; re-referred to Committee on RLS. on 04/22/20. **Set for hearing May 14 in L., P.E. & R. on 05/08/20. Re-referred to Committee on L., P.E. & R. on 05/11/20. From committee: Do pass and re-refer to Committee on APPR. on 05/18/20. Set for hearing June 1 on 05/26/20.)**

SB 1297 (Moorlach)
This bill would revise the provision of pension and other benefits to members of all state or local public retirement systems. The bill would apply its provisions prospectively to any member of a state or local public retirement system who is employed upon the date of its enactment and to any person who may be employed and become a member thereafter.

The bill would:

- void any limit on a pension that prohibits the pension from exceeding a percentage of final compensation, as specified;
- prohibit a local entity from establishing a deferred retirement option program, as described, and if a local entity has established a deferred retirement option program, whether or not the program is closed to new participants, it would be required to disenroll any participating employees and close the program;
- with regard to any member of a state or local public retirement system, the bill would require that final annual compensation used for purposes of ascertaining any pension or benefit be calculated as an average of the member's three highest earning years;
- prohibit, for any method of calculating a pension that is based on fractional percentage of final compensation multiplied by years of service with respect to a particular age at retirement, that fractional percentage from exceeding 2.7%;
- include findings that changes proposed by this bill address a matter of statewide concern rather than a municipal affair and, therefore, apply to all cities, including charter cities;
- require that an agency participating in PERS that increases the compensation of a member who was previously employed by a different agency to bear all actuarial liability for the action, if it results in an increased actuarial liability beyond what would have been reasonably expected for the member;
- require that the increased actuarial liability be in addition to reasonable compensation growth that is anticipated for a member who works for an employer or multiple employers over an extended time;
- require, if multiple employers cause increased liability, that the liability be apportioned equitably among them; and
- apply to an increase in actuarial liability, as specified, due to increased compensation paid to an employee on and after January 1, 2021.

(STATUS: Introduced on 02/21/20. To Committee on RLS for assignment on 02/21/20. Read first time on 02/24/20. Referred to Committee on L., P.E. & R. on 03/05/20.)

2020 TENTATIVE LEGISLATIVE CALENDAR

COMPILED BY THE OFFICE OF THE ASSEMBLY CHIEF CLERK AND THE OFFICE OF THE SECRETARY OF THE SENATE

Revised 10-18-19

JANUARY

	S	M	T	W	TH	F	S
				1	2	3	4
Wk. 1	5	6	7	8	9	10	11
Wk. 2	12	13	14	15	16	17	18
Wk. 3	19	20	21	22	23	24	25
Wk. 4	26	27	28	29	30	31	

FEBRUARY

	S	M	T	W	TH	F	S
Wk. 4							1
Wk. 1	2	3	4	5	6	7	8
Wk. 2	9	10	11	12	13	14	15
Wk. 3	16	17	18	19	20	21	22
Wk. 4	23	24	25	26	27	28	29

MARCH

	S	M	T	W	TH	F	S
Wk. 1	1	2	3	4	5	6	7
Wk. 2	8	9	10	11	12	13	14
Wk. 3	15	16	17	18	19	20	21
Wk. 4	22	23	24	25	26	27	28
Wk. 1	29	30	31				

APRIL

	S	M	T	W	TH	F	S
Wk. 1				1	2	3	4
Spring Recess	5	6	7	8	9	10	11
Wk. 2	12	13	14	15	16	17	18
Wk. 3	19	20	21	22	23	24	25
Wk. 4	26	27	28	29	30		

MAY

	S	M	T	W	TH	F	S
Wk. 4						1	2
Wk. 1	3	4	5	6	7	8	9
Wk. 2	10	11	12	13	14	15	16
Wk. 3	17	18	19	20	21	22	23
No Hrgs.	24	25	26	27	28	29	30
Wk. 4	31						

*Holiday schedule subject to final approval by Rules Committee.

DEADLINES

Jan. 1 Statutes take effect (Art. IV, Sec. 8(c)).

Jan. 6 Legislature reconvenes (J.R. 51(a)(4)).

Jan. 10 Budget must be submitted by Governor (Art. IV, Sec. 12(a)).

Jan. 17 Last day for **policy committees** to hear and report to **fiscal committees** fiscal bills introduced in their house in the odd-numbered year (J.R. 61(b)(1)).

Jan. 20 Martin Luther King, Jr. Day.

Jan. 24 Last day for any committee to hear and report to the **floor** bills introduced in that house in the odd-numbered year. (J.R. 61(b)(2)). Last day to submit **bill requests** to the Office of Legislative Counsel.

Jan. 31 Last day for each house to pass bills introduced in that house in the odd-numbered year (J.R. 61(b)(3)) (Art. IV, Sec. 10(c)).

Feb. 17 Presidents' Day.

Feb. 21 Last day for bills to be **introduced** (J.R. 61(b)(4), J.R. 54(a)).

Mar. 27 Cesar Chavez Day observed.

Apr. 2 **Spring Recess** begins upon adjournment (J.R. 51(b)(1)).

Apr. 13 Legislature reconvenes from Spring Recess (J.R. 51(b)(1)).

Apr. 24 Last day for **policy committees** to hear and report to fiscal committees **fiscal bills** introduced in their house (J.R. 61(b)(5)).

May 1 Last day for **policy committees** to hear and report to the floor **nonfiscal** bills introduced in their house (J.R. 61(b)(6)).

May 8 Last day for **policy committees** to meet prior to June 1 (J.R. 61(b)(7)).

May 15 Last day for **fiscal committees** to hear and report to the **floor** bills introduced in their house (J.R. 61 (b)(8)). Last day for **fiscal committees** to meet prior to June 1 (J.R. 61 (b)(9)).

May 25 Memorial Day.

May 26-29 **Floor session only**. No committee may meet for any purpose except for Rules Committee, bills referred pursuant to Assembly Rule 77.2, and Conference Committees (J.R. 61(b)(10)).

May 29 Last day for each house to pass bills introduced in that house (J.R. 61(b)(11)).

Page 1 of 2

OVER

2020 TENTATIVE LEGISLATIVE CALENDAR

COMPILED BY THE OFFICE OF THE ASSEMBLY CHIEF CLERK AND THE OFFICE OF THE SECRETARY OF THE SENATE
Revised 10-18-19

JUNE							
	S	M	T	W	TH	F	S
Wk. 4		1	2	3	4	5	6
Wk. 1	7	8	9	10	11	12	13
Wk. 2	14	15	16	17	18	19	20
Wk. 3	21	22	23	24	25	26	27
Wk. 4	28	29	30				

June 1 Committee meetings may resume (J.R. 61(b)(12)).

June 15 Budget Bill must be passed by midnight (Art. IV, Sec. 12(c)).

June 25 Last day for a legislative measure to qualify for the Nov. 3 General Election ballot (Elections Code Sec. 9040).

June 26 Last day for **policy committees** to hear and report **fiscal bills** to fiscal committees (J.R. 61(b)(13).

JULY							
	S	M	T	W	TH	F	S
Wk. 4				1	2	3	4
Summer Recess	5	6	7	8	9	10	11
Summer Recess	12	13	14	15	16	17	18
Summer Recess	19	20	21	22	23	24	25
Summer Recess	26	27	28	29	30	31	

July 2 Last day for **policy committees** to meet and report bills (J.R. 61(b)(14)).

Summer Recess begins upon adjournment, provided Budget Bill has been passed (J.R. 51(b)(2)).

July 3 Independence Day observed.

AUGUST							
	S	M	T	W	TH	F	S
Summer Recess							1
Wk. 1	2	3	4	5	6	7	8
Wk. 2	9	10	11	12	13	14	15
No Hrgs.	16	17	18	19	20	21	22
No Hrgs.	23	24	25	26	27	28	29
No Hrgs	30	31					

Aug. 3 Legislature reconvenes from **Summer Recess** (J.R. 51(b)(2)).

Aug. 14 Last day for **fiscal committees** to meet and report bills (J.R. 61(b)(15)).

Aug. 17 – 31 **Floor session only**. No committee may meet for any purpose except Rules Committee, bills referred pursuant to Assembly Rule 77.2, and Conference Committees (J.R. 61(b)(16)).

Aug. 21 Last day to **amend** bills on the floor (J.R. 61(b)(17)).

Aug. 31 Last day for each house to pass bills (Art. IV, Sec 10(c), J.R. 61(b)(18)). **Final Recess** begins upon adjournment (J.R. 51(b)(3)).

IMPORTANT DATES OCCURRING DURING FINAL RECESS

2020

Sept. 30 Last day for Governor to sign or veto bills passed by the Legislature before Sept. 1 and in the Governor's possession on or after Sept. 1 (Art. IV, Sec. 10(b)(2)).

Oct. 1 Bills enacted on or before this date take effect January 1, 2021. (Art. IV, Sec. 8(c)).

Nov. 3 General Election.

Nov. 30 Adjournment *sine die* at midnight (Art. IV, Sec. 3(a)).

Dec. 7 2021-22 Regular Session convenes for Organizational Session at 12 noon. (Art. IV, Sec. 3(a)).

2021

Jan. 1 Statutes take effect (Art. IV, Sec. 8(c)).

*Holiday schedule subject to final approval by Rules Committee.

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Memorandum

DATE: June 5, 2020

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **OCERS 2020 BUSINESS PLAN - MID YEAR REVIEW**

Written Report

Background/Discussion

In general the 2020 Business Plan is progressing as crafted at last year's Strategic Planning Workshop. You will find notations added to the Business Plan document next to each objective task providing a status as of mid-year.

COVID-19

While in general COVID-19 has not impacted the Business Plan, there are two objective/tasks that have been delayed because of the pandemic change:

Under the goal of “Talent Management”, a task related to Objective A “Recruit and Retain a Diverse High-Performing Workforce to Meet Organizational Priorities” has been put on hold by the Personnel Committee for the time being. The Committee felt it best to pause on Task 4, which related to OCERS salary ranges and schedules until the Committee members have a better sense of the pandemic’s impact on retention and funding issues.

Also under the goal of "Talent Management", Objective B "Develop and empower every member of the team", Task 3 relates to the ultimate creation of a Master OCERS Procedures repository. That is still one of my primary objectives for this agency in order to ensure we are providing our staff with the best tools possible to increase their effectiveness in serving our members. $150,000 had been budgeted in 2020 to provide for a professional technical writer to assist in this continuing process. COVID 19, with its ensuing requirement that OCERS staff work remotely has just not made it practical to bring in that kind of expertise at this time. We continue to work with staff via Zoom meetings in crafting language and identifying procedural documentation opportunities under the auspices of the LEAD committee. That seems to be the most effective process at this time. It is unlikely that we will be using the services of a technical writer in 2020.

DELAYING FOR A FUTURE YEAR

In my March 2020 quarterly report to the Board regarding the 2020-2022 Strategic Plan, I informed you that following some important discussions with the OCERS management team, we likely had committed to more goals and objectives than we could reasonably accomplish in a year. I let you know I would report back on any suggested modifications with this mid-year report.

We do not see a need to make changes to the broad goals outlined in the Strategic Plan, but you will note in the body of the Business Plan five tasks that we believe will be delayed simply due to the need to accomplish other assigned tasks first.

The five impacted tasks are:

> Risk Management/Objective A (Provide System and Data Security and a Robust Business Continuity Solution) Tasks 2(a) and (b) - two software implementation tasks that cannot both be accomplished in the same year.
>
> Talent Management/Objective B (Develop and Empower Every Member of the Team)/Task 3 - Create Succession Plans across the agency
>
> Effective Governance/Objective B (Improve the Governance and Management of OCERS' Records)/Task 5 - Systemically bring each department within OCERS into compliance with the records retention program, and Task 6 - Establish procedures to maintain and audit compliance with the record retention program.

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

Orange County Employees Retirement System
2223 East Wellington Avenue | Santa Ana | 92701

2020 BUSINESS PLAN

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

MISSION, VISION AND VALUES

MISSION STATEMENT:

We provide secure retirement and disability benefits with the highest standards of excellence.

VISION STATEMENT:

To be a trusted partner providing premier pension administration, distinguished by consistent, quality member experiences and prudent financial stewardship.

VALUES:

- **O**pen and Transparent
- **C**ommitment to Superior Service
- **E**ngaged and Dedicated Workforce
- **R**eliable and Accurate
- **S**ecure and Sustainable

2020-2022 STRATEGIC GOALS

- Fund Sustainability
- Excellent Service and Support
- Risk Management
- Talent Management
- Effective Governance

FUND SUSTAINABILITY

GOAL: STRENGTHEN THE LONG-TERM STABILITY OF THE PENSION FUND

Business Plan Initiatives

Objective A: Mitigate the Risk of Significant Investment Loss
Executive Lead – Molly Murphy

1. Conduct and begin implementation of a triennial asset allocation study – presented and approved by IC in April 2020
2. Conduct a competitive procurement for an investment/risk management system – in process

Objective B: Prudent Use and Security of Resources
Executive Leads – Molly Murphy;

1. Investigate Custodial Bank Services options – in process; information only in 2020 for action in a later year

EXCELLENT SERVICE AND SUPPORT

GOAL: ACHIEVE EXCELLENCE IN THE SERVICE AND SUPPORT WE PROVIDE TO OUR MEMBERS AND PLAN SPONSORS

Business Plan Initiatives

Objective A: Provide Accurate and Timely Benefits

Executive Leads – Suzanne Jenike;

1. Streamline the service retirement process by implementing;
    a. LEAN action items – in process
    b. Application packets – in process
2. Improve customer service standards by enhancing V3 workflows, monitoring and reporting (year two) – in process

Objective B: Provide Education to our Members and Employers

Executive Lead – Suzanne Jenike

1. Design and implement a bi-annual employer workshop – Done (except we decided to make this an annual workshop).
2. Create white board videos that will provide education to members and stakeholders about OCERS benefits (year two) - Done

Objective C: Continuously Improve Business Processes and Procedures to be Efficient and Effective

Executive Lead – Brenda Shott and Suzanne Jenike

1. Explore the process of obtaining LEAN certifications – in process
2. Identify additional business process to implement LEAN principles – in process, likely multi year.
3. Procure and begin conversion to new accounting software – will begin in second half of 2020.

RISK MANAGEMENT

GOAL: CULTIVATE A RISK-INTELLIGENT ORGANIZATION

Business Plan Initiatives

Objective A: Provide System and Data Security and a Robust Business Continuity Solution
Executive Leads – Brenda Shott, Matt Eakin & Jenny Sadoski

1. Continue implementation plan for security and operational best practice controls – in progress
2. Continuously assess current Information Security environment and address identified risks:
   a. Implement software application whitelisting solution to prevent the installation and execution of unknown programs on OCERS systems – to begin in second half of 2020 or possibly differed to 2021
   b. Implement a Privileged Account Management (PAM) solution to secure, control, manage and monitor privileged accounts – to begin in second half of 2020 or possibly differed to 2021

c. Perform review of firewall solutions and migrate to new firewall solution if warranted – in progress
d. Continue development of OCERS data map, data classification structure and data exchange flows and identify associated risks (year two) – in progress
e. Develop a process for mitigating risks associated with external third party IT business partners – in progress

3. Implement tools and processes to mitigate the risk of data or financial loss or information disclosure:
   a. Implement an Identity and Access Management (IAM) solution incorporating Single Sign-On (SSO) and Multi-Factor Authentication (MFA)
      In progress.
   b. Implement tools to secure OCERS cloud based environments
      Not yet started
   c. Implement automated hardware and software inventory tool
      Not yet started
   d. Enhance processes between Managed Security / Managed Detection & Response vendor and Information Security staff
      In progress
   e. Determine alternative methods of exchanging member identification protocols
      In progress

4. Enhance the Business Continuity and Disaster Recovery Program:
   a. Establish alternate work space / work site plan (year two)
      Remote work capabilities implemented. Re-evaluate need for another alternate work space.
   b. Expand the Business Continuity and Disaster Recovery test plan
      In progress.

Objective B: Ensure a Safe and Secure Workplace and Public Service Facility
Executive Lead – Brenda Shott

1. Plan and implement building security, safety and health upgrades and space management projects (year three) – in progress

TALENT MANAGEMENT

GOAL: RECRUIT, RETAIN AND INSPIRE A HIGH-PERFORMING WORKFORCE

Business Plan Initiatives

Objective A: Recruit and Retain a Diverse High-Performing Workforce to Meet Organizational Priorities
Executive Lead – Steve Delaney and Cynthia Hockless

1. Enhance onboarding and transitioning of new hires into the organization
    a. Continue to expand the newly implemented onboarding process – in process
2. Expand advertising and outreach sources in order to continue to encourage diversity in recruitments – in process
3. Implement recommendations from workforce analysis (year three) – process is with Personnel Committee
4. Implement recommendations of the Personnel Committee regarding staff retention strategies – on hold due to COVID-19

Objective B: Develop and empower every member of the team
Executive Lead – Steve Delaney

1. Design and develop a comprehensive training program that embeds a talent management mindset throughout the organization – in process
2. Customize training programs based on individual needs and career goals within OCERS – in process
3. Create succession plans across the agency (year three) – on hold (awaiting completion of other team development initiatives)

4. Develop a comprehensive standardized library of procedure manuals accessible on the OCERS Intranet – in process

Objective C: Cultivate a Collaborative, Inclusive and Creative Culture
Executive Lead – Steve Delaney

1. Explore methods to measure OCERS culture of engagement and continuous improvement – done and continuous (e.g. monthly Ted Talks; annual one-on-ones with CEO; career development discussions)
2. Provide inclusion training to staff – set to launch by Q4
3. Celebrate OCERS 75th Anniversary – done

EFFECTIVE GOVERNANCE

GOAL: IMPROVE THE EFFECTIVENESS AND EFFICIENCY OF THE BOARD AND STAFF BY CLARIFYING ROLES AND RESPONSIBILITIES, IMPROVING OVERSIGHT, CLARIFYING ACCOUNTABILITY AND IMPROVING DECISION MAKING

Objective A: Employ a Governance Structure that Supports a Dynamic System
Executive Lead – Steve Delaney

1. Explore methods of focusing Board and staff time and effort on activities that support or advance OCERS' Strategic Goals – on hold (awaiting Funston Group proposal)

Objective B: Improve the Governance and Management of OCERS' Records
Executive Lead – Gina Ratto

1. Develop and implement, over multiple years, a records retention program that reflects best practices and identifies appropriate retention periods for each category of records *In process*
2. Identify "best practices" in record retention *In process*
3. Establish storage protocols and automate destruction schedules for electronic mail *In process*
4. Establish an alternative "work space" and/or storage place for emails *In process*
5. Systematically bring each department within OCERS into compliance with the records retention program *Not started*
6. Establish procedures to maintain and audit compliance with the record retention program *Not started*

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
www.ocers.org

Memorandum

DATE: June 5, 2020

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **OCERS 2020-2022 STRATEGIC PLAN PROGRESS – MID YEAR REVIEW**

Written Report

Background/Discussion

This is our third year of the simplified strategic plan format. Details relating to each goal and objective are provided in the accompanying 2020 Business Plan.

There is nothing flowing out of the current COVID 19 pandemic that would suggest a need to change our current broad based strategic goals.

FUND SUSTAINABILITY

I would note at this mid-year mark that under the goal of "Fund Sustainability", we are moving closer to completing the tasks (Triennial Study and Investment/Risk Management System) related to Objective A "Mitigate the Risk of Significant Investment Loss", and will likely be able to close those tasks by the end of the year. The objective is obviously a continuous one, and in the future other supportive tasks can be considered for inclusion.

EXCELLENT SERVICE AND SUPPORT

Additionally, under the goal of "Excellent Service and Support" tasks related to Objective B "Provide Education to our Members and Employers" such as employer workshops and white board videos are completed. Again, this is another broad continuous goal that will allow us at year end to identify other supporting tasks for future annual business plans.

The upcoming Strategic Planning Workshop will provide us with an opportunity to review the status and outcomes of these goals, objectives and related tasks, allowing for updates and revisions to the 2021-2023 Strategic Plan.

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

Orange County Employees Retirement System
2223 East Wellington Avenue | Santa Ana | 92701

2020-2022 STRATEGIC PLAN

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

MISSION, VISION AND VALUES

MISSION STATEMENT:

We provide secure retirement and disability benefits with the highest standards of excellence.

VISION STATEMENT:

To be a trusted partner providing premier pension administration, distinguished by consistent, quality member experiences and prudent financial stewardship.

VALUES:

- **O**pen and Transparent
- **C**ommitment to Superior Service
- **E**ngaged and Dedicated Workforce
- **R**eliable and Accurate
- **S**ecure and Sustainable

STRATEGIC PLAN

2020-2022 STRATEGIC GOALS

- Fund Sustainability
- Excellent Service and Support
- Risk Management
- Talent Management
- Effective Governance

FUND SUSTAINABILITY

STRENGTHEN THE LONG-TERM STABILITY OF THE PENSION FUND

Objective A: Mitigate the risk of significant investment loss

Objective B: Prudent Use and Security of Resources

EXCELLENT SERVICE AND SUPPORT

ACHIEVE EXCELLENCE IN THE SERVICE AND SUPPORT WE PROVIDE TO OUR MEMBERS AND PLAN SPONSORS

Objective A: Provide accurate and timely benefits

Objective B: Provide education to our members and plan sponsors

Objective C: Continuously improve business processes and procedures to be efficient and effective

RISK MANAGEMENT

CULTIVATE A RISK-INTELLIGENT ORGANIZATION

Objective A: Provide system and data security and a robust business continuity solution

Objective B: Ensure a safe and secure workplace and public service facility

TALENT MANAGEMENT

RECRUIT, RETAIN AND INSPIRE A HIGH-PERFORMING WORKFORCE

Objective A: Recruit and retain a high-performing workforce to meet organizational priorities

Objective B: Develop and empower every member of the team

Objective C: Cultivate a collaborative, inclusive and creative culture

EFFECTIVE GOVERNANCE

IMPROVE THE EFFECTIVENESS AND EFFICIENCY OF THE BOARD AND STAFF BY CLARIFYING ROLES AND RESPONSIBILITIES, IMPROVING OVERSIGHT, CLARIFYING ACCOUNTABILITY AND IMPROVING DECISION MAKING

Objective A: Employ a governance structure that supports a dynamic System

Objective B: Improve the governance and management of OCERS' records

ORANGE COUNTY

OCERS

EMPLOYEES RETIREMENT SYSTEM

We provide secure retirement and disability benefits
with the highest standards of excellence.

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM
www.ocers.org

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Manuel Serpa, Staff Attorney

SUBJECT: **UPDATE ON OCERS' APPLICATION TO SERVICE MARK OCERS' NAME AND LOGO**

Written Report

Background/Discussion

In January of this year, we filed applications with the U.S. Patent and Trademark Office ("USPTO") for registration of the OCERS mark, both the OCERS acronym and the acronym with the color logo. A "mark" is essentially a brand name and includes any word, name, symbol, device (or any combination), used to identify and distinguish the goods or services of one provider from those of others. A "trademark" applies to goods, a "service mark" to services. There is no other difference between the two, and the USPTO refers to either as a mark. Registering the marks with the USPTO provides the benefit of a presumption of ownership of "OCERS" on a national basis and constructive notice of that ownership to other entities in the United States. Thus, registration of the OCERS mark will help defend against infringement and any unauthorized use of the OCERS' name that may mislead or confuse our members.

The applications for the OCERS' service marks were assigned to a USPTO examining attorney who determined that the marks are eligible for registration and that there are no conflicting marks in the USPTO database of registered marks. The mark that consists of the OCERS acronym alone (U.S. Serial Number: 88762505) was published in the USPTO's Trademark Official Gazette on May 19, 2020. The application for the OCERS acronym with the color logo (U.S. Serial No. 88768807) is scheduled to be published in the Official Gazette on June 16, 2020. The significance of publication is that if no party files an opposition or extension request within thirty days after the publication date, then eleven weeks after the publication date, a certificate of registration should issue. Any party who believes it will be damaged by the registration of the mark may file a notice of opposition with the Trademark Trial and Appeal Board.

Submitted by:

MS-Approved

____

Manuel Serpa
Staff Attorney

Memorandum

DATE: June 5, 2020

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **2020 STRATEGIC PLANNING WORKSHOP – PROPOSED FORMAT AND AGENDA TOPICS**

Presentation

Background/Discussion

It's time to begin planning for OCERS' annual Strategic Planning Workshop scheduled for Wednesday, September 9 and Thursday, September 10, 2020.

The workshop has traditionally had multiple goals, with the overall strategic direction of both the agency and the investment fund being the binding theme**:**

- Combine both education and discussion on topics pertinent to operations and investments over the next several years. Seek consensus on Board and agency priorities for the coming calendar year.
- Focus is generally on operational issues as they relate to the agency's strategic objectives, and their funding. Investment operations and strategic goals are covered as well.
- Presentations and discussions provide the opportunity for sharing of ideas among OCERS' trustees, staff and consultants, truly an opportunity for thinking outside the box as OCERS pursues "continuous improvement."

Though held off-site in the past, no matter where this meeting is held it is a public meeting, and has consistently had an audience of a size similar to regular OCERS Board meetings.

Possible Format

While we are just under three months away from the strategic planning workshop as planned at the start of this year, that planning took place before the pandemic.

There are a number of primary questions regarding format in a COVID-19 world that need to be considered by the Board:

1. Shall the 2020 OCERS Board Strategic Planning Workshop be held by Zoom, in person, or a mixture of the two?
2. If there is interest in holding the workshop in person, should the planned date be moved out to October or November to allow for a clearer picture of best CDC and Orange County Department of Health advice?

3. No matter what format is directed, shall we consider shortening the workshop from its traditional two 8-hour day sessions, to something less, recognizing that if held in-person some travel issues may remain for certain speakers (see attached news article), and if held via Zoom it may simply be too tiring to expect attendees to focus on a monitor for two 8-hour days?

Possible Agenda Topics:

The annual Strategic Planning workshop is the first occasion for the Board to consider staff's early proposals for the coming year's business plan goals, as well as any updates to the multi-year strategic plan.

For general administration issues:

1. STATE OF OCERS
   Due to time constraints in collecting and updating system data, beginning last year I have delivered the annual presentation of "STATE OF OCERS" at the Strategic Planning Workshop.

2. STAKEHOLDER COMMENTS
   Once again we will open with comments from representatives of our participating employers and labor groups. This allows the Board of Trustees to hear directly from our stakeholders regarding the economic and life challenges being faced by employers and members in relation to the retirement benefits this Board administers. Ms. Michelle Aguirre of the County of Orange has again indicated her willingness to share her always informative summary of the issues facing our largest employer.

3. PUBLIC PENSION PLAN GOVERNANCE BEST PRACTICES
   As part of OCERS' culture of continuous improvement, we are always looking for examples of governance best practice. This year I have arranged for the Legal Counsel and CIO of the Retirement Systems of Alabama (RSA) to share some of their unique approaches to pension administration and investment. (If we hold this by Zoom, I may be able to appeal to the legendary director of RSA, Dr. David Bronner, to speak to his 43 years of experience in leading that system.)

Possible Agenda Topics:

Each June I lay out possible topics that could be considered at the workshop, and request that Trustees offer suggestions as well. Some topics we believe may be of interest:

COVID 19 Impact on Employer Budgets
COVID 19 Impact on the State of California Budget
Furloughs and Layoffs – as they relate to OCERS Members
The Challenges of Running a Remote Office
Real Estate – The Modern Post-COVID Office
Detailed discussion of OCERS' New HQ Project

Credit Investments in a Post-COVID World
Investment Contract Terms – Getting the best possible

Please let me know if there is a topic that you would like explored at this year's workshop and I will work with the Board Chair and Investment Committee Chair to give each request full consideration. I will return in July with an update on proposed format and agenda topics for the 2020 Strategic Planning Workshop for the Board's final review and approval.

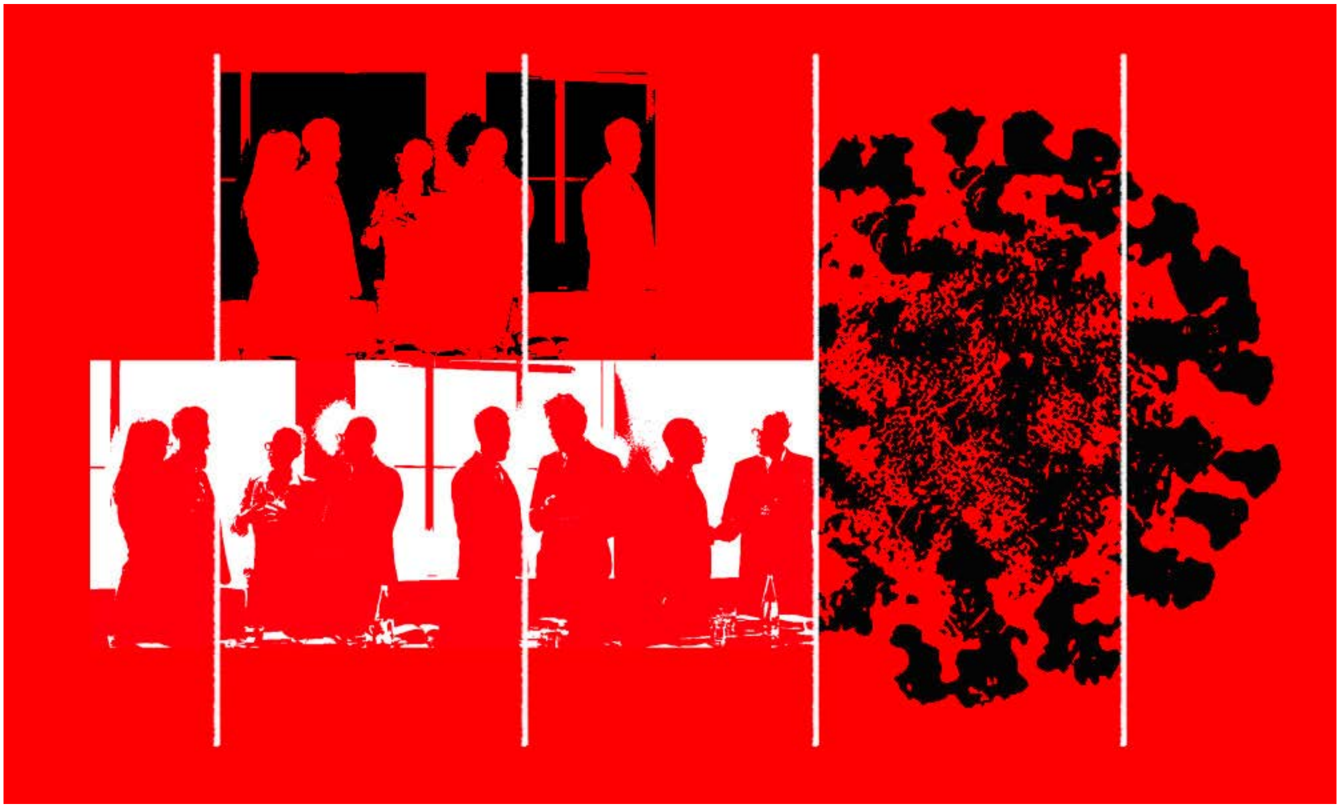
Attachment: The II Fear Index: No Business- as-Usual Anytime Soon

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

The II Fear Index: No Business-as-Usual Anytime Soon



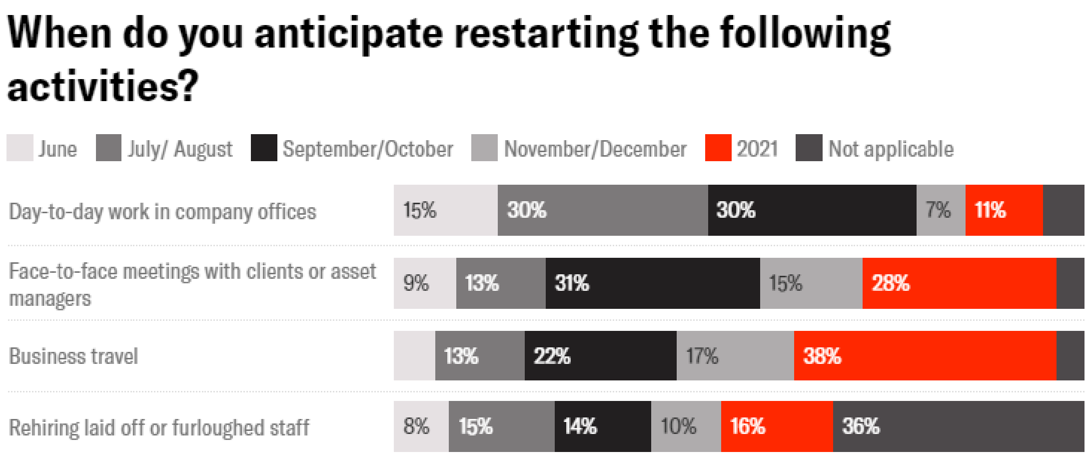
Institutional investors see themselves returning to the office by fall — but business travel may be off the table until next year, according to II's weekly poll.

By Amy Whyte June 02, 2020

Around the world, businesses are beginning to reopen from the coronavirus pandemic. But asset owners and investment managers won't be returning to normal anytime soon, according to the latest II Fear Index.

Institutional investors participating in the weekly poll broadly indicated they would continue to stay home for at least the next month, with just 15 percent planning to return to the office in June. However, a majority believed they would be back at their workplace by fall: Thirty percent said day-to-day office work would resume in July or August, while another 30 percent predicted it would happen in September or October.

There was less consensus on the subject of in-person meetings. While the highest proportion — 31 percent — indicated they would begin meeting with clients or asset managers in September or October, another 28 percent anticipated that they would not have any face-to-face meetings until 2021.



Respondents were least optimistic on the prospects of business travel, with the plurality — 38 percent — predicting they would not resume traveling for work until next year.

The results are part of this week’s II Fear Index, *Institutional Investor*’s recurring poll of institutional allocators and asset managers. For the third week in a row, respondents were split on whether governments should be focusing more on public health or economic stability at this time, with 55 of this week’s 109 respondents prioritizing health and 54 emphasizing GDP.

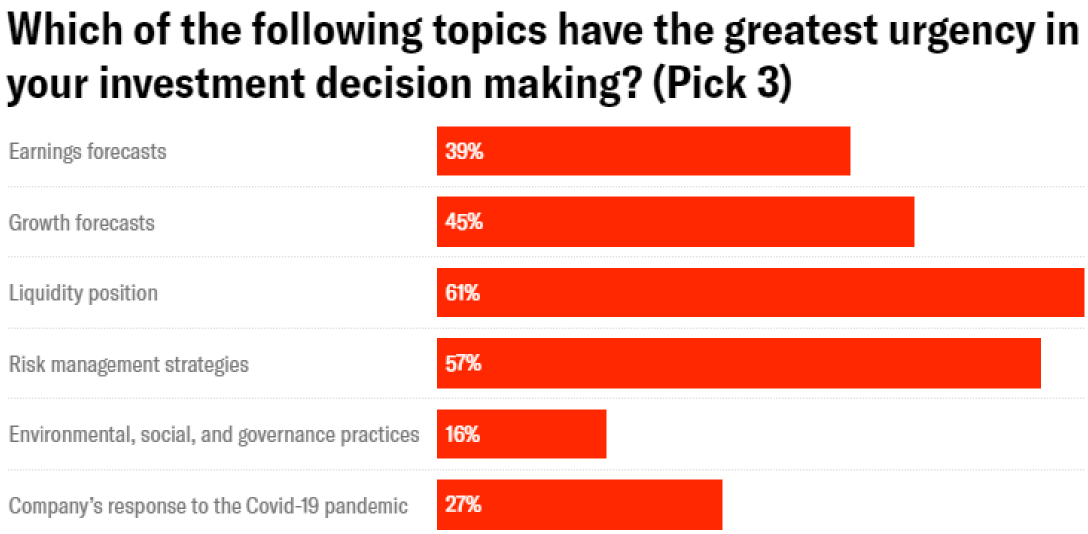
[*II* Deep Dive: The II Fear Index: Investors Want the Fed’s Support, Even If It Increases Credit Risk]

Investors also continued to show unease over the economic leadership of their national governments. Just under half of respondents reported that their level of optimism regarding government ability to manage economic affairs had decreased this week — the highest weekly jump in pessimism recorded by the index so far.

Thirty percent said they felt less optimistic about their country’s economic prospects compared to last week, while 24 percent reported an increase in optimism.

Elsewhere in this week’s survey, investors were asked about asset management fees and the factors driving their investment decision-making.

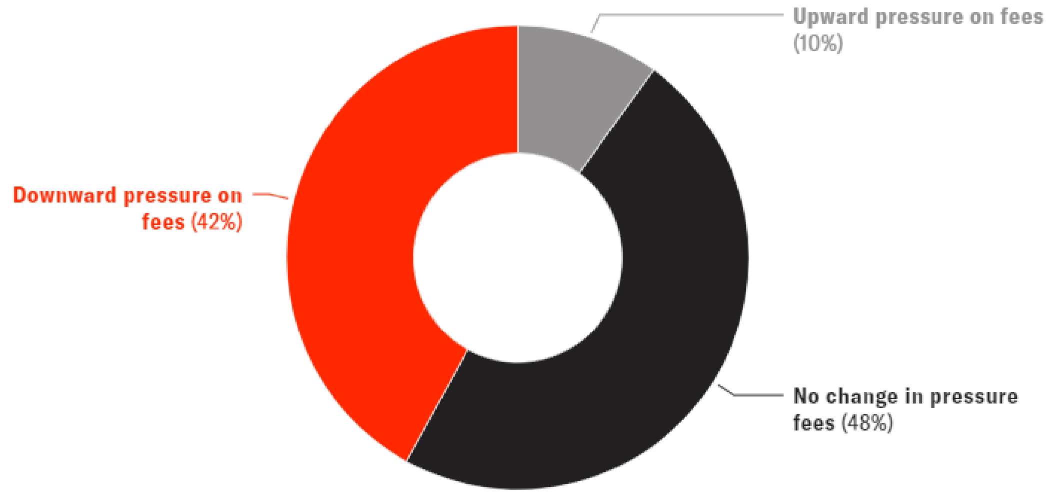
The most urgent consideration for investing in a given company, according to 61 percent of respondents, was the firm's liquidity position. Fifty-seven percent cited risk management strategies among their top-three considerations, while 45 percent said they focused on growth forecasts. Just 16 percent indicated that environmental, social, and governance practices were an urgent concern.



On the subject of fees, asset managers and allocators indicated that the business disruption and market volatility caused by the pandemic would likely shift the balance of power toward allocators. Forty-two percent of survey respondents anticipated downward pressure on fees over the next 12 months, while just 10 percent predicted fees would increase. The rest (48 percent) said fees would not be impacted by recent events.

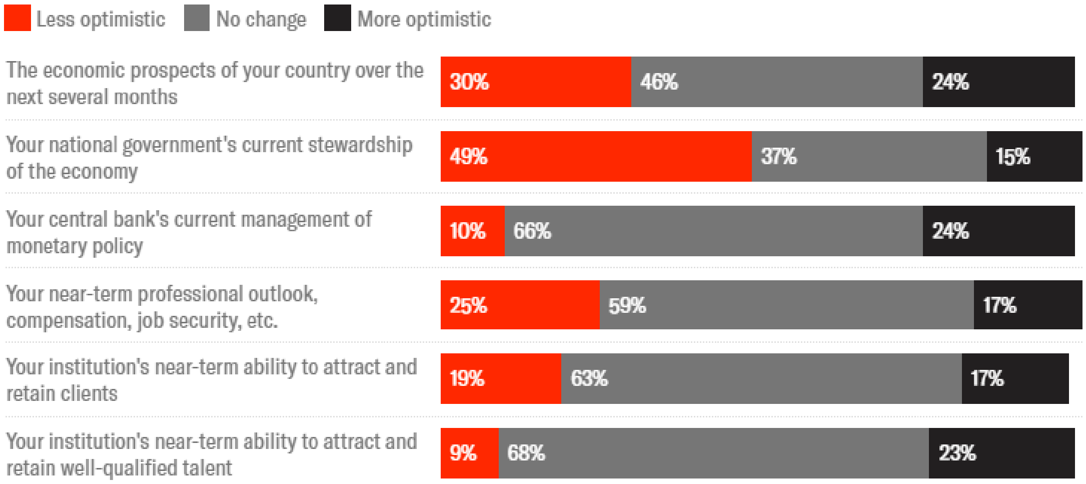
More results from the II Fear Index poll continue below. To contribute to the index, please register here.

Over the next 12 months, do you anticipate asset management fees changing?



As the world endures the Covid-19 pandemic, which is more important for governments to do right now?

What is your level of optimism about the following factors?



Source: II Custom Research Lab

Memorandum

DATE: June 15, 2020

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **COVID-19 UPDATE**

Written Report

The OCERS staff continues to do a great job meeting the COVID-19 challenge and ensuring that our members receive the services they expect as we fulfil this agency's mission. Rather than provide you with a written report of the agency status prior to the Monday, June 15th meeting of the OCERS Board of Retirement, I will instead provide a verbal update of plan status and challenges at that time. This recognizes the fact that issues impacted by COVID-19 seem to change daily.

Submitted by:

SD - Approved

Steve Delaney
Chief Executive Officer

Orange County Employees
Retirement System

Alternative Economic Assumptions for Use in 2020 Sensitivity Analyses

June 15, 2020

Prepared by Paul Angelo and Andy Yeung

Segal

Review of Scope and Terminology (from Actuarial Standard on Risk Assessments)

- Scenario testing – impact of occurrence of possible event(s)
  - For example, illustrations prepared each year to show impact of one year of favorable or unfavorable market return
  - Metrics studied, both by rate group and for entire plan
    - Employer contribution rate
    - Funded ratio
    - Unfunded Actuarial Accrued Liability
  - Scenario test will be repeated using results from 12/31/2019 valuation
- Sensitivity testing – impact of change in actuarial assumption(s)
  - Same metrics but using alternative long term economic assumptions (i.e., different from those used in 12/31/2019 valuation)
  - Performed every year, even if no experience study
  - Results only for entire plan

OCERS Scenario Testing – Impact due to One Year of Favorable or Unfavorable Market Return

- Under three hypothetical market returns for year following valuation
  - 0.00%
  - 7.00% (current baseline)
  - 14.00%
- Metrics studied (by Rate Group)
  - Employer contribution rate
  - Funded ratio
  - Unfunded Actuarial Accrued Liability
- Can be useful as a budgeting tool for the employer
  - Next year's employer contribution rate can be estimated as actual year-to-date market return becomes available from OCERS
- Scenario testing will be updated using results and assumptions from 12/31/2019 valuation

OCERS Sensitivity Testing – Hypothetical Impact of Alternative Economic Assumptions

- Metrics studied (for the entire System) – first done in 2017
  - Employer contribution rate
  - Funded ratio
  - Unfunded Actuarial Accrued Liability
- Illustrates "what if" impact of changes to economic assumptions
  1. Inflation (2.75% used in 12/31/2019 valuation)
     – COLA increases for retirees
     – Component of salary increases for actives and wage increases for amortizing UAAL
     – Component of investment return assumption
  2. Real return (4.25% used in 12/31/2019 valuation)
  3. Investment return (7.00% used in 12/31/2019 valuation)
  - In practice, two of these assumptions determines the third (since Inflation + Real Return = Investment Return)

OCERS Economic Assumptions

	12/31/17-19 Valuation		12/31/14-16 Valuation		12/31/12-13 Valuation		12/31/11 Valuation	
	Return	Pay*	Return	Pay*	Return	Pay*	Return	Pay*
Price Inflation	2.75%	2.75%	3.00%	3.00%	3.25%	3.25%	3.50%	3.50%
Real Wages	n/a	0.50%	n/a	0.50%	n/a	0.50%	n/a	0.25%
Net Real Return	4.25%	n/a	4.25%	n/a	4.00%	n/a	4.25%	n/a
Total	7.00%	3.25%	7.25%	3.50%	7.25%	3.75%	7.75%	3.75%

* Excludes Merit and Promotion component of assumed individual salary increases

Sensitivity Testing – Proposed 2020 Alternative Economic Assumptions

- Alternatives 1, 2 and 3 were recommended by Segal and approved by OCERS in 2018 and 2019
- Alternative 4 shows effect of lowering inflation but not investment return, thereby increasing real return
  - Requested by County for 2020
- These alternatives are not necessarily assumptions Segal would recommend in any future triennial experience study

	Inflation	Real Return	Investment Return
Baseline (assumptions used in 12/31/2019 valuation)	**2.75%**	**4.25%**	**7.00%**
Alt #1: Lower inflation only	**2.50%**	**4.25%**	**6.75%**
Alt #2: Lower real return only	**2.75%**	**4.00%**	**6.75%**
Alt #3: Lower inflation and lower real return	**2.50%**	**4.00%**	**6.50%**
Alt #4: Lower inflation and higher real return	**2.50%**	**4.50%**	**7.00%**

Questions and Discussion

segalco.com