

Orange County Employees Retirement System

**Governmental Accounting Standards Board
(GASB) Statement 68**

**Actuarial Valuation Based on December 31, 2018
Measurement Date for Employer Reporting
as of June 30, 2019**



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

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June 4, 2019

*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, 2018 measurement date for employer reporting as of June 30, 2019. It contains various information that will need to be disclosed in order for OCERS employers to comply with GASB 68.

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

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: 

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SECTION 1: Valuation Summary for the Orange County Employees Retirement System

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board (GASB) Statement 68 for employer reporting as of June 30, 2019. 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, 2018. 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, 2017, provided by OCERS;
- The assets of the Plan as of December 31, 2018, provided by OCERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2018 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2018 valuation.

General Observations on GASB 68 Actuarial Valuation

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

- The Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans still develop and adopt funding policies under current practices.
- When measuring pension liability GASB uses the same actuarial cost method (Entry Age 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.

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- 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.
- For this report, the reporting dates for the employers are June 30, 2019 and 2018. The NPL's measured as of December 31, 2018 and 2017 have been determined by rolling forward the TPL as of December 31, 2017 and 2016, 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.

Significant Issues in Valuation Year

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

- The NPL increased from \$4,952.1 million as of December 31, 2017 to \$6,197.2 million as of December 31, 2018 primarily as a result a -2.46%¹ return on the market value of assets during 2018 that was lower than the assumed return of 7.00% of approximately \$1,388 million. This loss was offset to some extent by the gains from lower than expected active salary increases and lower than expected retiree COLA increases during 2017 (because liabilities are rolled forward from December 31, 2017 to December 31, 2018, these changes are not reflected until this valuation as of December 31, 2018)². Changes in these values during the last two plan years ending December 31, 2018 and December 31, 2017 can be found in Exhibit 5.
- The discount rate used to determine the TPL and NPL as of both December 31, 2018 and 2017 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, 2018 can be found in Appendix A of Section 3. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 13 in Section 2.

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 loss on net pension plan assets was \$361,321,000 during 2018 after including both the administrative expenses and discount for prepaid contributions while excluding the losses credited to County Investment Account and O.C. Sanitation District UAAL Deferred Account. Without these adjustments, the actual investment loss was \$324,628,000.

² It should be noted that because of the use of roll forward, any difference between actual and expected COLA increases during 2018 would not be reflected until the next valuation as of December 31, 2019.

SECTION 1: Valuation Summary for the Orange County Employees Retirement System

- The Plan's Fiduciary Net Position of \$14,801,895,000 as of December 31, 2017 is equal to the final market value of assets in the Pension Trust Fund as of December 31, 2017. This differs from the \$14,652,607,000 market value of assets used in our December 31, 2017 funding valuation because the funding valuation excludes \$134,417,000 in the County Investment Account and \$14,871,000 in O.C. Sanitation District UAAL Deferred Account (after transfer of \$24,042,000 required for O.C. Sanitation District to offset UAAL increase for assumption changes).

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 in the O.C. Sanitation District UAAL Deferred Account as of December 31, 2018 is \$0 after transfer of \$14,589,000 to offset a portion of the District's UAAL as of December 31, 2018.)

- In Appendix B, we show the Schedule of Pension Amounts by Employer. The expanded information shown in Appendix B has been used to prepare Exhibits 8 and 9.
- Results shown in this report exclude any employer contributions made after the measurement date of December 31, 2018. Employers should consult with their auditors to determine the deferred outflow that should be created for these contributions.
- 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 #1³ 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 Exhibit 7 in Section 2.

³ 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: Valuation Summary for the Orange County Employees Retirement System

Summary of Key Valuation Results

Reporting Date for Employer under GASB 68 ⁽¹⁾	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Disclosure elements for plan year ending December 31:		
1. Service cost ⁽²⁾	\$491,372,822	\$452,412,003
2. Total Pension Liability	20,678,882,089	19,753,994,401
3. Plan's Fiduciary Net Position	14,481,680,000	14,801,895,000
4. Net Pension Liability	6,197,202,089	4,952,099,401
5. Pension expense	783,713,497	529,375,473
Schedule of contributions for plan year ending December 31:		
6. Actuarially determined contributions ^{(3),(4)}	\$556,728,000	\$536,726,000
7. Actual contributions ^{(3),(4)}	580,905,000	572,104,000
8. Contribution deficiency (excess) ⁽⁵⁾ (6) – (7)	(24,177,000)	(35,378,000)
Demographic data for plan year ending December 31:		
9. Number of retired members and beneficiaries	17,674	16,947
10. Number of vested terminated members	6,026	5,803
11. Number of active members	21,929	21,721
Key assumptions as of December 31:		
12. Investment rate of return	7.00%	7.00%
13. Inflation rate	2.75%	2.75%
14. 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, 2018 and December 31, 2017.

⁽²⁾ The service cost is based on the previous year's valuation, meaning the 2018 and 2017 measurement date values are based on the valuations as of December 31, 2017 and December 31, 2016, respectively. The 2018 service cost has been calculated using the assumptions shown in the December 31, 2017 column and the 2017 service cost has been calculated using the assumptions used in the December 31, 2016 valuation. The key assumptions as of December 31, 2016 are as follows:

Key assumptions as of December 31, 2016:

Investment rate of return	7.25%
Inflation rate	3.00%
Projected salary increases*	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%

* Includes inflation at 3.00% plus real across-the-board salary increases of 0.50% plus merit and promotional increases.

SECTION 1: Valuation Summary for the Orange County Employees Retirement System

⁽³⁾ *Reduced by discount for prepaid contributions and transfer from County Investment Account, if any.*

⁽⁴⁾ *Exclude transfers of \$14,589,000 and \$24,042,000 from O.C. Sanitation District Deferred UAAL Account required to offset UAAL increase as of December 31, 2018 and December 31, 2017, respectively.*

⁽⁵⁾ *Includes additional contributions made by employers toward the reduction of their UAAL. Details are shown in Exhibit 6 of this report.*

⁽⁶⁾ *Includes inflation at 2.75% plus real across-the-board salary increases of 0.50% plus merit and promotional increases.*

SECTION 1: Valuation Summary for the Orange County Employees Retirement System

Important Information about Actuarial Valuations

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

In order to prepare an actuarial valuation, Segal Consulting (“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 projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

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

- The 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.

SECTION 1: Valuation Summary for the Orange County Employees Retirement System

- 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 Consulting 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 for the Orange County Employees Retirement System

EXHIBIT 1

General Information – “Financial Statements”, Note Disclosures and Required Supplementary Information for a Cost-Sharing 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, 2018, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	17,674
Vested terminated members entitled to, but not yet receiving benefits	6,026
Active members	<u>21,929</u>
Total	45,629

Note: Data as of December 31, 2018 is not used in the measurement of the TPL as of December 31, 2018.

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

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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).

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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 2018 or the second half of fiscal year 2017-2018 (based on the December 31, 2015 valuation) was 37.25%¹ of compensation. The average employer contribution rate for the last six months of calendar year 2018 or the first half of fiscal year 2018-2019 (based on the December 31, 2016 valuation) was 36.56%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 2018 or the second half of fiscal year 2017-2018 (based on the December 31, 2015 valuation) was 12.21%² of compensation. The average member contribution rate for the last six months of calendar year 2018 or the first half of fiscal year 2018-2019 (based on the December 31, 2016 valuation) was 12.01%² of compensation.

¹ *These employer contribution rates are higher than the composite rate for 2018 as shown on page 9 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.*

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EXHIBIT 2

Net Pension Liability

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
The components of the Net Pension Liability are as follows:		
Total Pension Liability	\$20,678,882,089	\$19,753,994,401
Plan's Fiduciary Net Position	<u>(14,481,680,000)</u>	<u>(14,801,895,000)</u>
Net Pension Liability	\$6,197,202,089	\$4,952,099,401
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	70.03%	74.93%

The Net Pension Liability (NPL) was measured as of December 31, 2018 and 2017. 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, 2017 and 2016, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of December 31, 2018 and 2017 are the same as those used in the OCERS actuarial valuations as of December 31, 2018 and 2017, respectively.

Actuarial assumptions. The TPLs as of December 31, 2018 and 2017 were determined by actuarial valuations as of December 31, 2017 and 2016, 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, 2018 and 2017 funding valuations for OCERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

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

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EXHIBIT 3

Target Asset Allocation

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation but before deducting investment expenses are 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, 2018 and 2017 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	<u>8.0%</u>	9.48%
Total	100.0%	

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EXHIBIT 3 (continued)

Target Asset Allocation

Discount rate. The discount rate used to measure the TPL was 7.00% as of December 31, 2018 and 2017. 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, 2018 and 2017.

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EXHIBIT 4

Discount Rate Sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL as of December 31, 2018, 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:

Employer	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Orange County	\$7,162,237,483	\$4,918,576,912	\$3,094,724,273
O.C. Cemetery District	2,522,723	962,119	(306,483)
O.C. Law Library	2,131,439	573,252	(693,385)
O.C. Vector Control District	6,493,528	2,492,695	(759,548)
O.C. Retirement System	41,606,979	28,844,760	18,470,461
O.C. Fire Authority	757,726,799	466,731,526	230,183,938
Cypress Recreation and Parks	1,772,444	408,781	(699,729)
Department of Education	5,334,034	3,517,372	2,040,623
Transportation Corridor Agency	20,108,650	13,253,632	7,681,246
City of San Juan Capistrano	46,363,150	32,142,058	20,581,853
O.C. Sanitation District	131,317,068	29,029,145	(54,119,840)
O.C. Transportation Authority	410,027,534	269,788,642	155,789,636
U.C.I.	50,627,765	34,808,679	21,949,478
O.C. Children and Families Comm.	1,710,176	630,610	(246,960)
Local Agency Formation Comm.	2,282,962	1,582,703	1,013,468
Rancho Santa Margarita	8,165	1,284	(4,310)
O.C. Superior Court	566,535,998	392,760,910	251,500,616
O.C. IHSS Public Authority	<u>1,822,788</u>	<u>1,097,009</u>	<u>507,030</u>
Total for all Employers	\$9,210,629,685	\$6,197,202,089	\$3,747,612,367

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 5

Schedule of Changes in OCERS Net Pension Liability – Last Two Plan Years

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Total Pension Liability		
1. Service cost	\$491,372,822	\$452,412,003
2. Interest	1,379,917,267	1,305,268,322
3. Change of benefit terms	0	0
4. Differences between expected and actual experience	(118,124,401)	(66,963,603)
5. Changes of assumptions	0	827,197,076
6. Benefit payments, including refunds of member contributions	(828,278,000)	(764,344,000)
7. Transfer of members among Rate Groups	0	0
8. Other	0	0
9. Net change in Total Pension Liability	\$924,887,688	\$1,753,569,798
10. Total Pension Liability – beginning	<u>19,753,994,401</u>	<u>18,000,424,603</u>
11. Total Pension Liability – ending	<u>\$20,678,882,089</u>	<u>\$19,753,994,401</u>
Plan's Fiduciary Net Position		
12. Contributions – employer ⁽¹⁾	\$580,905,000 ⁽²⁾	\$572,104,000 ⁽³⁾
13. Contributions – plan members	270,070,000	262,294,000
14. Net investment income/(loss)	(324,628,000)	1,939,635,000
15. Benefit payments, including refunds of member contributions	(828,278,000)	(764,344,000)
16. Transfer of members among Rate Groups	0	0
17. Administrative expense	(18,284,000)	(17,002,000)
18. Other	0	0
19. Net change in Plan's Fiduciary Net Position	\$(320,215,000)	\$1,992,687,000
20. Plan's Fiduciary Net Position – beginning	<u>14,801,895,000</u>	<u>12,809,208,000</u>
21. Plan's Fiduciary Net Position – ending	\$14,481,680,000	\$14,801,895,000
22. Net Pension Liability – ending (11) – (21)	<u>\$6,197,202,089</u>	<u>\$4,952,099,401</u>
23. Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	70.03%	74.93%
24. Covered payroll ⁽⁴⁾	\$1,718,798,000	\$1,678,322,000
25. Plan Net Pension Liability as percentage of covered payroll	360.55%	295.06%

⁽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⁾ \$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 this amount.

⁽⁴⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 6

Schedule of Employer Contributions – Last Ten Plan 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)}
2009	\$337,496,000	\$338,387,000 ⁽⁴⁾	\$(891,000)	\$1,598,888,000	21.16%
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 ⁽⁵⁾	(1,075,000)	1,494,745,000	28.57%
2014	476,320,000	625,520,000 ⁽⁶⁾	(149,200,000)	1,513,206,000	41.34%
2015	502,886,000	571,298,000 ⁽⁷⁾	(68,412,000)	1,521,036,000	37.56%
2016	521,447,000	567,196,000 ⁽⁸⁾	(45,749,000)	1,602,675,000	35.40%
2017	536,726,000 ⁽⁹⁾	572,104,000 ^{(9),(10)}	(35,378,000)	1,678,322,000	34.09%
2018	556,728,000 ⁽¹¹⁾	580,905,000 ^{(11),(12)}	(24,177,000)	1,718,798,000	33.80%

⁽¹⁾ Reduced by transfers from County Investment Account (funded by pension obligation proceeds held by OCERS). Those transfers are as follows:

<i>Plan Year Ended December 31</i>	<i>Transfers from County Investment Account</i>	<i>Plan Year Ended December 31</i>	<i>Transfers from County Investment Account</i>
2009	\$34,900,000	2014	\$5,000,000
2010	11,000,000	2015	0
2011	11,000,000	2016	0
2012	5,500,000	2017	0
2013	5,000,000	2018	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 \$891,000 made by O.C. Fire Authority towards the reduction of their UAAL.

⁽⁵⁾ Includes additional contributions of \$1,075,000 made by O.C. Fire Authority towards the reduction of their UAAL.

⁽⁶⁾ 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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 6 (continued)

Schedule of OCERS' Contributions – Last Ten Plan Years

- ⁽⁷⁾ *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.*
- ⁽⁸⁾ *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.*
- ⁽⁹⁾ *\$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.*
- ⁽¹⁰⁾ *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.*
- ⁽¹¹⁾ *\$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.*
- ⁽¹²⁾ *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.*

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

Notes to Exhibit 6

Methods and assumptions used to establish “actuarially determined contribution” rates:

Valuation date

Actuarially determined contribution rates for the first six months of calendar year 2018 or the second half of fiscal year 2017-2018 are calculated based on the December 31, 2015 valuation. Actuarially determined contribution rates for the last six months of calendar year 2018 or the first half of fiscal year 2018-2019 are calculated based on the December 31, 2016 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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

Notes to Exhibit 6 (continued)

Actuarial assumptions:

December 31, 2015 valuation

<i>Investment rate of return</i>	7.25%, net of pension plan investment expense, including inflation
<i>Inflation rate</i>	3.00%
<i>Real across-the-board salary increase</i>	0.50%
<i>Projected salary increases</i>	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%, vary by service, including inflation
<i>Cost of living adjustments</i>	3.00% of retirement income
<i>Other assumptions</i>	Same as those used in the December 31, 2015 funding actuarial valuation

December 31, 2016 valuation

<i>Investment rate of return</i>	7.25%, net of pension plan investment expense, including inflation
<i>Inflation rate</i>	3.00%
<i>Real across-the-board salary increase</i>	0.50%
<i>Projected salary increases</i>	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%, vary by service, including inflation
<i>Cost of living adjustments</i>	3.00% of retirement income
<i>Other assumptions</i>	Same as those used in the December 31, 2016 funding actuarial valuation

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7

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, 2017 to December 31, 2017						
Employer	Rate Group #1		Rate Group #2		Rate Group #3	
	Rate Group #1	Percentage	Rate Group #2	Percentage	Rate Group #3	Percentage
Orange County	\$14,766,000	98.637%	\$247,280,000	87.558%	\$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%	1,960,000	0.694%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Cypress Recreation and Parks ⁽¹⁾	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%	2,391,000	0.847%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	7,625,000	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%	249,000	0.088%	0	0.000%
Local Agency Formation Comm.	0	0.000%	116,000	0.041%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	30,423,000	10.772%	0	0.000%
O.C. IHSS Public Authority	<u>204,000</u>	<u>1.363%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$14,970,000	100.000%	\$282,419,000	100.000%	\$7,625,000	100.000%

⁽¹⁾ After the December 31, 2016 funding valuation, we have applied the Board's withdrawing employer policy to allocate a portion of the Unfunded Actuarial Accrued Liability to the District as of December 31, 2016. However, no UAAL contributions have been made by the District during 2017.

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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, 2017 to December 31, 2017						
Employer	Rate Group #4		Rate Group #5		Rate Group #9	
	Rate Group #4	Percentage	Rate Group #5	Percentage	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%	1,738,000	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%	24,310,000	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$0	100.000%	\$24,310,000	100.000%	\$1,738,000	100.000%

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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, 2017 to December 31, 2017						
Employer	Rate Group #10		Rate Group #11		Rate Group #12	
	Rate Group #10	Percentage	Rate Group #11	Percentage	Rate Group #12	Percentage
Orange County	\$0	0.000%	\$0	0.000%	\$0	0.000%
O.C. Cemetery District	0	0.000%	170,000	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	264,000	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	8,348,000	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$8,348,000	100.000%	\$170,000	100.000%	\$264,000	100.000%

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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, 2017 to December 31, 2017						
Employer	Rate Group #6		Rate Group #7		Rate Group #8	
	Rate Group #6	Percentage	Rate Group #7	Percentage	Rate Group #8	Percentage
Orange County	\$26,930,000	100.000%	\$131,526,000	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%	56,891,000	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$26,930,000	100.000%	\$131,526,000	100.000%	\$56,891,000	100.000%

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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, 2017 to December 31, 2017		
Employer	Total Contributions⁽²⁾	Total Percentage
Orange County	\$420,502,000	75.740%
O.C. Cemetery District	170,000	0.030%
O.C. Law Library	264,000	0.047%
O.C. Vector Control District	0	0.000%
O.C. Retirement System	1,960,000	0.353%
O.C. Fire Authority	65,239,000	11.751%
Cypress Recreation and Parks ⁽¹⁾	0	0.000%
Department of Education	0	0.000%
Transportation Corridor Agency	1,738,000	0.313%
City of San Juan Capistrano	2,391,000	0.431%
O.C. Sanitation District	7,625,000	1.373%
O.C. Transportation Authority	24,310,000	4.379%
U.C.I.	0	0.000%
O.C. Children and Families Comm.	249,000	0.045%
Local Agency Formation Comm.	116,000	0.021%
Rancho Santa Margarita	0	0.000%
O.C. Superior Court	30,423,000	5.480%
O.C. IHSS Public Authority	<u>204,000</u>	<u>0.037%</u>
Total for all Employers	\$555,191,000	100.000%

⁽¹⁾ After the December 31, 2016 funding valuation, we have applied the Board's withdrawing employer policy to allocate a portion of the Unfunded Actuarial Accrued Liability to the District as of December 31, 2016. However, no UAAL contributions have been made by the District during 2017.

⁽²⁾ Excludes combined additional contributions of \$35,378,000 made by O.C. Law Library, O.C. Fire Authority and O.C. Children and Families Comm. towards the reduction of their UAALs, combined contributions of \$3,472,000 made by Department of Education and U.C.I. and combined employer pick-up contributions of \$985,000.

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2017 Net Pension Liability							
Employer	Rate Group #1		Rate Group #2		Rate Group #3		
	Rate Group #1	Percentage	Rate Group #2	Percentage	Rate Group #3	Percentage	
Orange County	\$46,159,638	58.485%	\$2,620,699,334	87.267%	\$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 ⁽³⁾	1,166,920	1.478%	0	0.000%	0	0.000%	
O.C. Retirement System	0	0.000%	21,427,080	0.714%	0	0.000%	
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%	
Cypress Recreation and Parks ⁽³⁾	718,340	0.910%	0	0.000%	0	0.000%	
Department of Education ⁽³⁾	2,530,324	3.206%	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%	26,138,852	0.870%	0	0.000%	
O.C. Sanitation District	0	0.000%	0	0.000%	(39,571,102)	100.000%	
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%	
U.C.I. ⁽³⁾	27,644,960	35.026%	0	0.000%	0	0.000%	
O.C. Children and Families Comm.	0	0.000%	962,204	0.032%	0	0.000%	
Local Agency Formation Comm.	0	0.000%	1,268,133	0.042%	0	0.000%	
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%	
O.C. Superior Court	0	0.000%	332,589,831	11.075%	0	0.000%	
O.C. IHSS Public Authority	<u>706,343</u>	<u>0.895%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	
Total for all Employers	\$78,926,525	100.000%	\$3,003,085,434	100.000%	\$(39,571,102)	100.000%	

⁽³⁾ 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, 2016 to December 31, 2017 for the actual contributions, benefit payments and return on their VVAs during 2017. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2017. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2016).

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2017 Net Pension Liability						
Employer	Rate Group #4		Rate Group #5		Rate Group #9	
	Rate Group #4	Percentage	Rate Group #5	Percentage	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%	10,242,769	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%	212,117,162	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	(2,320)	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$(2,320)	100.000%	\$212,117,162	100.000%	\$10,242,769	100.000%

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2017 Net Pension Liability						
Employer	Rate Group #10		Rate Group #11		Rate Group #12	
	Rate Group #10	Percentage	Rate Group #11	Percentage	Rate Group #12	Percentage
Orange County	\$0	0.000%	\$0	0.000%	\$0	0.000%
O.C. Cemetery District	0	0.000%	(173,677)	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	(36,317)	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	49,719,504	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$49,719,504	100.000%	\$(173,677)	100.000%	\$(36,317)	100.000%

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2017 Net Pension Liability						
Employer	Rate Group #6		Rate Group #7		Rate Group #8	
	Rate Group #6	Percentage	Rate Group #7	Percentage	Rate Group #8	Percentage
Orange County	\$237,985,846	100.000%	\$1,078,850,413	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%	320,955,164	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$237,985,846	100.000%	\$1,078,850,413	100.000%	\$320,955,164	100.000%

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2017 Net Pension Liability		
Employer	Total NPL	Total Percentage
Orange County	\$3,983,695,231	80.445%
O.C. Cemetery District	(173,677)	(0.004%)
O.C. Law Library	(36,317)	(0.001%)
O.C. Vector Control District ⁽³⁾	1,166,920	0.024%
O.C. Retirement System	21,427,080	0.433%
O.C. Fire Authority	370,674,668	7.485%
Cypress Recreation and Parks ⁽³⁾	718,340	0.015%
Department of Education ⁽³⁾	2,530,324	0.051%
Transportation Corridor Agency	10,242,769	0.207%
City of San Juan Capistrano	26,138,852	0.528%
O.C. Sanitation District	(39,571,102)	(0.799%)
O.C. Transportation Authority	212,117,162	4.283%
U.C.I. ⁽³⁾	27,644,960	0.558%
O.C. Children and Families Comm.	962,204	0.019%
Local Agency Formation Comm.	1,268,133	0.026%
Rancho Santa Margarita	(2,320)	(0.000%)
O.C. Superior Court	332,589,831	6.716%
O.C. IHSS Public Authority	<u>706,343</u>	<u>0.014%</u>
Total for all Employers	\$4,952,099,401	100.000%

⁽³⁾ 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, 2016 to December 31, 2017 for the actual contributions, benefit payments and return on their VVAs during 2017. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2017. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2016).

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Notes Regarding Determination of Proportionate Share as of December 31, 2017 Measurement Date:

1. Based on the January 1, 2017 through December 31, 2017 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 2017.)
- 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 2017. Again, as there were no such County POB contributions made during 2017, we have continued to apply the same proportions determined in 2014 for each of the four County Rate Groups to allocate the \$134,417,000 in the County Investment Account as of December 31, 2017. 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 in that account has been reduced by \$24,042,000 to \$14,871,000 at the end of the year to mitigate the additional UAAL due to the changes in assumption approved by the Board for the December 31, 2017 valuation (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 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):	\$524,000
(ii) Rate Group #1 (U.C.I.):	\$2,948,000
(iii) Rate Group #2 (O.C. Children and Families Comm.):	\$1,744,000
 - 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, 2017 and are used to reduced the NPL for the three employers as of December 31, 2017.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Notes Regarding Determination of Proportionate Share as of December 31, 2017 Measurement Date:

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:	\$4,967,147
Rate Group #2:	82,611,101
Rate Group #6:	8,585,705
Rate Group #7:	<u>38,253,047</u>
Total:	\$134,417,000

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 \$1,759,910 as of December 31, 2017 when adjusted with interest from November 15, 2017 to December 31, 2017. 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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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						
Employer	Rate Group #1		Rate Group #2		Rate Group #3	
	Rate Group #1	Percentage	Rate Group #2	Percentage	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	<u>191,000</u>	<u>1.409%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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						
Employer	Rate Group #4		Rate Group #5		Rate Group #9	
	Rate Group #4	Percentage	Rate Group #5	Percentage	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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**

Employer	Rate Group #10		Rate Group #11		Rate Group #12	
	Rate Group #10	Percentage	Rate Group #11	Percentage	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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						
Employer	Rate Group #6		Rate Group #7		Rate Group #8	
	Rate Group #6	Percentage	Rate Group #7	Percentage	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

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**

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	<u>191,000</u>	<u>0.033%</u>
Total for all Employers	\$574,606,000	100.000%

⁽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.

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2018 Net Pension Liability							
Employer	Rate Group #1		Rate Group #2		Rate Group #3		
	Rate Group #1	Percentage	Rate Group #2	Percentage	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	<u>1,097,009</u>	<u>0.961%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	
Total for all Employers	\$114,189,673	100.000%	\$3,702,614,951	100.000%	\$29,029,145	100.000%	

⁽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).

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2018 Net Pension Liability						
Employer	Rate Group #4		Rate Group #5		Rate Group #9	
	Rate Group #4	Percentage	Rate Group #5	Percentage	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2018 Net Pension Liability						
Employer	Rate Group #10		Rate Group #11		Rate Group #12	
	Rate Group #10	Percentage	Rate Group #11	Percentage	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2018 Net Pension Liability						
Employer	Rate Group #6		Rate Group #7		Rate Group #8	
	Rate Group #6	Percentage	Rate Group #7	Percentage	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	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
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.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

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	<u>1,097,009</u>	<u>0.018%</u>
Total for all Employers	\$6,197,202,089	100.000%

⁽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).

Note: Results may not total due to rounding.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

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.)
- 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 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.
 - 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 reduced the NPL for the three employers as of December 31, 2018.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 7 (continued)

Determination of Proportionate Share

Notes Regarding Determination of Proportionate Share as of December 31, 2018 Measurement Date:

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:	<u>37,533,901</u>
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.

For the active employers, the following items are allocated based on the corresponding proportionate share within each Rate Group:

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

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8

Pension Expense: Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$491,372,822	\$452,412,003
2. Interest on the Total Pension Liability	1,379,917,267	1,305,268,323
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(19,987,206)	(11,142,029)
6. Expensed portion of current-period changes of assumptions or other inputs	0	137,636,784
7. Member contributions ⁽¹⁾	(270,234,000)	(263,279,000)
8. Projected earnings on plan investments	(1,035,650,701)	(929,983,428)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	272,055,741	(201,930,314)
10. Administrative expense	18,284,000	17,002,000
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	399,004,768	258,095,232
13. Recognition of beginning of year deferred inflows of resources as pension expense	(451,049,194)	(234,704,098)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$783,713,497	\$529,375,473

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: Orange County

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$361,704,111	\$331,004,944
2. Interest on the Total Pension Liability	1,025,915,198	965,662,018
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	2,225,549	1,348,921
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(14,167,674)	(2,367,219)
6. Expensed portion of current-period changes of assumptions or other inputs	0	105,720,645
7. Member contributions ⁽¹⁾	(207,127,558)	(201,833,900)
8. Projected earnings on plan investments	(748,179,749)	(670,274,220)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	195,956,417	(144,893,476)
10. Administrative expense	13,464,032	12,328,336
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	298,563,409	189,480,429
13. Recognition of beginning of year deferred inflows of resources as pension expense	(327,351,945)	(176,479,079)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>5,016,038</u>	<u>3,667,117</u>
Pension Expense	\$606,017,828	\$413,364,516

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Cemetery District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$348,025	\$266,508
2. Interest on the Total Pension Liability	708,227	632,926
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	24,792	(34,941)
6. Expensed portion of current-period changes of assumptions or other inputs	0	81,205
7. Member contributions ⁽¹⁾	(141,000)	(131,000)
8. Projected earnings on plan investments	(696,211)	(623,108)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	185,536	(132,686)
10. Administrative expense	6,553	5,970
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	232,446	151,243
13. Recognition of beginning of year deferred inflows of resources as pension expense	(301,651)	(134,024)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$366,717	\$82,093

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Law Library

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$322,890	\$293,545
2. Interest on the Total Pension Liability	710,772	680,271
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(59,333)	(11,212)
6. Expensed portion of current-period changes of assumptions or other inputs	0	71,355
7. Member contributions ⁽¹⁾	(159,000)	(163,000)
8. Projected earnings on plan investments	(726,252)	(553,962)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	193,384	(135,333)
10. Administrative expense	6,897	39,754
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	782,777	711,421
13. Recognition of beginning of year deferred inflows of resources as pension expense	(626,694)	(480,149)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(372,508)</u>	<u>(372,508)</u>
Pension Expense	\$72,933	\$80,182

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Vector Control District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	1,848,812	1,912,655
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(196,473)	55,049
6. Expensed portion of current-period changes of assumptions or other inputs	0	144,654
7. Member contributions ⁽¹⁾	0	(4,000)
8. Projected earnings on plan investments	(1,848,408)	(1,767,751)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	497,306	(368,815)
10. Administrative expense	0	82
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	721,308	521,606
13. Recognition of beginning of year deferred inflows of resources as pension expense	(865,968)	(497,153)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$156,577	\$(3,673)

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Retirement System

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$1,995,184	\$1,689,285
2. Interest on the Total Pension Liability	5,980,605	5,190,896
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	368,482	8,281
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(79,280)	(21,922)
6. Expensed portion of current-period changes of assumptions or other inputs	0	558,486
7. Member contributions ⁽¹⁾	(1,344,479)	(1,214,802)
8. Projected earnings on plan investments	(4,355,868)	(3,600,833)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	1,144,155	(780,091)
10. Administrative expense	75,152	64,326
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,591,215	898,870
13. Recognition of beginning of year deferred inflows of resources as pension expense	(2,056,153)	(1,081,169)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>335,339</u>	<u>327,058</u>
Pension Expense	\$3,654,352	\$2,038,385

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Fire Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$57,116,725	\$54,227,641
2. Interest on the Total Pension Liability	132,967,401	126,475,589
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(2,961,807)	(4,002,910)
6. Expensed portion of current-period changes of assumptions or other inputs	0	9,375,593
7. Member contributions ⁽¹⁾	(23,623,000)	(22,249,000)
8. Projected earnings on plan investments	(107,511,750)	(93,925,010)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	28,451,707	(20,480,172)
10. Administrative expense	2,443,231	2,400,825
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	37,792,896	28,417,306
13. Recognition of beginning of year deferred inflows of resources as pension expense	(41,721,158)	(17,238,076)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$82,954,245	\$63,001,786

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: Cypress Recreation and Parks

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	300,934	299,448
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	3,345	710,578
6. Expensed portion of current-period changes of assumptions or other inputs	0	23,368
7. Member contributions ⁽¹⁾	0	0
8. Projected earnings on plan investments	(259,495)	10,169
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	70,660	(800,458)
10. Administrative expense	15,899	0
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	733,946	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(800,458)	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$64,831	\$243,105

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: Department of Education

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	856,137	872,268
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	34,113	(205,455)
6. Expensed portion of current-period changes of assumptions or other inputs	0	59,066
7. Member contributions ⁽¹⁾	0	0
8. Projected earnings on plan investments	(675,747)	(663,547)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	180,008	(140,158)
10. Administrative expense	6,477	10,677
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	382,586	323,520
13. Recognition of beginning of year deferred inflows of resources as pension expense	(504,215)	(158,602)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$279,359	\$97,769

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: Transportation Corridor Agency

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$1,693,722	\$1,481,244
2. Interest on the Total Pension Liability	3,137,101	2,926,806
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(31,117)	(264,613)
6. Expensed portion of current-period changes of assumptions or other inputs	0	292,487
7. Member contributions ⁽¹⁾	(840,000)	(692,000)
8. Projected earnings on plan investments	(2,396,991)	(2,117,402)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	624,025	(467,722)
10. Administrative expense	51,803	47,844
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	806,977	514,489
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,103,568)	(371,233)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$1,941,952	\$1,349,900

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: City of San Juan Capistrano

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$2,223,256	\$2,060,755
2. Interest on the Total Pension Liability	6,664,259	6,332,364
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(24,181)	278,735
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(88,342)	(26,743)
6. Expensed portion of current-period changes of assumptions or other inputs	0	681,296
7. Member contributions ⁽¹⁾	(1,498,168)	(1,481,934)
8. Projected earnings on plan investments	(4,853,795)	(4,392,649)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	1,274,945	(951,631)
10. Administrative expense	83,742	78,471
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,773,109	1,096,529
13. Recognition of beginning of year deferred inflows of resources as pension expense	(2,291,196)	(1,318,916)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(76,591)</u>	<u>(355,326)</u>
Pension Expense	\$3,187,038	\$2,000,951

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Sanitation District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$16,436,454	\$14,599,044
2. Interest on the Total Pension Liability	46,856,849	44,099,066
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	558,074	(912,523)
6. Expensed portion of current-period changes of assumptions or other inputs	0	4,090,055
7. Member contributions ⁽¹⁾	(7,825,000)	(7,496,000)
8. Projected earnings on plan investments	(48,767,818)	(44,715,731)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	13,140,559	(9,558,791)
10. Administrative expense	327,747	301,020
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	12,786,061	8,696,006
13. Recognition of beginning of year deferred inflows of resources as pension expense	(18,624,486)	(8,153,172)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>372,508</u>	<u>372,508</u>
Pension Expense	\$15,260,948	\$1,321,482

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Transportation Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$21,969,087	\$20,177,368
2. Interest on the Total Pension Liability	64,268,721	61,058,113
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(2,053,634)	(2,891,372)
6. Expensed portion of current-period changes of assumptions or other inputs	0	7,282,694
7. Member contributions ⁽¹⁾	(9,162,000)	(8,926,000)
8. Projected earnings on plan investments	(49,856,360)	(45,299,139)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	13,108,760	(9,816,088)
10. Administrative expense	705,212	652,940
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	18,923,272	11,640,577
13. Recognition of beginning of year deferred inflows of resources as pension expense	(22,803,216)	(10,095,756)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$35,099,842	\$23,783,337

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: U.C.I.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	7,453,561	7,693,145
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	115,980	(791,340)
6. Expensed portion of current-period changes of assumptions or other inputs	0	473,486
7. Member contributions ⁽¹⁾	0	0
8. Projected earnings on plan investments	(5,577,083)	(5,525,591)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	1,483,017	(1,167,612)
10. Administrative expense	61,773	60,070
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,987,876	1,514,390
13. Recognition of beginning of year deferred inflows of resources as pension expense	(3,684,569)	(1,725,616)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$1,840,555	\$530,932

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Children and Families Comm.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$43,618	\$75,858
2. Interest on the Total Pension Liability	130,749	233,102
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(61,098)	(74,128)
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(1,733)	(984)
6. Expensed portion of current-period changes of assumptions or other inputs	0	25,079
7. Member contributions ⁽¹⁾	(29,393)	(54,552)
8. Projected earnings on plan investments	(95,229)	(161,699)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	25,014	(35,031)
10. Administrative expense	1,643	2,889
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	34,787	40,365
13. Recognition of beginning of year deferred inflows of resources as pension expense	(44,952)	(48,551)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(289,199)</u>	<u>(215,071)</u>
Pension Expense	\$(285,793)	\$(212,723)

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: Local Agency Formation Comm.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$109,475	\$99,978
2. Interest on the Total Pension Liability	328,154	307,216
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	2,334	(8,500)
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(4,350)	(1,297)
6. Expensed portion of current-period changes of assumptions or other inputs	0	33,053
7. Member contributions ⁽¹⁾	(73,771)	(71,896)
8. Projected earnings on plan investments	(239,005)	(213,110)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	62,779	(46,169)
10. Administrative expense	4,124	3,807
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	87,309	53,198
13. Recognition of beginning of year deferred inflows of resources as pension expense	(112,820)	(63,988)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>28,915</u>	<u>37,415</u>
Pension Expense	\$193,144	\$129,707

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: Rancho Santa Margarita

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	3,220	3,263
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	132	(1,287)
6. Expensed portion of current-period changes of assumptions or other inputs	0	159
7. Member contributions ⁽¹⁾	0	0
8. Projected earnings on plan investments	(3,328)	(3,147)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	586	(998)
10. Administrative expense	0	0
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	4,028	3,869
13. Recognition of beginning of year deferred inflows of resources as pension expense	(3,362)	(1,077)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
Pension Expense	\$1,276	\$782

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. Superior Court

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$27,167,159	\$26,220,982
2. Interest on the Total Pension Liability	81,434,123	80,572,779
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(2,508,769)	(1,564,112)
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(1,079,499)	(340,280)
6. Expensed portion of current-period changes of assumptions or other inputs	0	8,668,789
7. Member contributions ⁽¹⁾	(18,306,917)	(18,856,078)
8. Projected earnings on plan investments	(59,311,106)	(55,891,915)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	15,579,236	(12,108,524)
10. Administrative expense	1,023,291	998,464
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	21,666,565	13,952,203
13. Recognition of beginning of year deferred inflows of resources as pension expense	(27,997,338)	(16,781,835)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(5,054,972)</u>	<u>(3,490,860)</u>
Pension Expense	\$32,611,773	\$21,379,613

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 8 (continued)

Pension Expense: O.C. IHSS Public Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Components of Pension Expense		
1. Service cost	\$243,116	\$214,851
2. Interest on the Total Pension Liability	352,444	316,398
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(2,317)	10,803
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(400)	(33,558)
6. Expensed portion of current-period changes of assumptions or other inputs	0	55,314
7. Member contributions ⁽¹⁾	(103,714)	(104,838)
8. Projected earnings on plan investments	(296,506)	(264,783)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	77,647	(46,559)
10. Administrative expense	6,424	6,525
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	134,201	79,211
13. Recognition of beginning of year deferred inflows of resources as pension expense	(155,445)	(75,702)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>40,470</u>	<u>29,667</u>
Pension Expense	\$295,920	\$187,329

⁽¹⁾ Member contributions include employer paid member contributions, if any.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9

Deferred Outflows of Resources and Deferred Inflows of Resources: Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$30,727,591	\$24,632,387
2. Changes of assumptions or other inputs	585,314,769	751,249,228
3. Difference between projected and actual earnings on pension plan investments	1,258,427,015	399,097,683
4. Difference between expected and actual experience in the Total Pension Liability	<u>18,724,448</u>	<u>19,285,230</u>
5. Total Deferred Outflows of Resources	\$1,893,193,823	\$1,194,264,528
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$30,727,591	\$24,632,387
7. Changes of assumptions or other inputs	57,779,687	106,745,521
8. Difference between projected and actual earnings on pension plan investments	691,386,466	936,796,353
9. Difference between expected and actual experience in the Total Pension Liability	<u>454,047,301</u>	<u>508,967,680</u>
10. Total Deferred Inflows of Resources	\$1,233,941,045	\$1,577,141,941

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:

2019	N/A	\$(52,044,426)
2020	\$142,015,101	(110,053,434)
2021	32,203,133	(219,865,402)
2022	123,394,687	(128,673,848)
2023	378,563,286	126,494,755
2024	(16,923,429)	1,264,942
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: Orange County

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$25,452,653	\$19,581,719
2. Changes of assumptions or other inputs	451,779,162	578,664,495
3. Difference between projected and actual earnings on pension plan investments	907,051,313	289,836,042
4. Difference between expected and actual experience in the Total Pension Liability	<u>10,053,569</u>	<u>12,560,694</u>
5. Total Deferred Outflows of Resources	\$1,394,336,697	\$900,642,950
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$108,921	\$149,391
7. Changes of assumptions or other inputs	43,625,464	80,224,845
8. Difference between projected and actual earnings on pension plan investments	498,410,128	672,815,006
9. Difference between expected and actual experience in the Total Pension Liability	<u>315,142,849</u>	<u>358,243,068</u>
10. Total Deferred Inflows of Resources	\$857,287,362	\$1,111,432,310

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:

2019	N/A	\$(23,522,660)
2020	\$115,938,471	(67,689,625)
2021	36,829,538	(146,661,529)
2022	105,067,064	(78,664,919)
2023	289,031,435	104,702,347
2024	(9,817,173)	1,047,026
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Cemetery District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	325,633	406,838
3. Difference between projected and actual earnings on pension plan investments	859,393	262,218
4. Difference between expected and actual experience in the Total Pension Liability	<u>134,653</u>	<u>19,195</u>
5. Total Deferred Outflows of Resources	\$1,319,679	\$688,251
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	38,647	71,399
8. Difference between projected and actual earnings on pension plan investments	450,507	609,417
9. Difference between expected and actual experience in the Total Pension Liability	<u>287,311</u>	<u>397,300</u>
10. Total Deferred Inflows of Resources	\$776,465	\$1,078,116

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:

2019	N/A	\$(69,205)
2020	\$113,405	(96,923)
2021	57,227	(153,101)
2022	92,962	(117,366)
2023	256,591	46,264
2024	23,029	466
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Law Library

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$60,420	\$111,626
2. Changes of assumptions or other inputs	286,133	357,488
3. Difference between projected and actual earnings on pension plan investments	1,371,152	1,309,037
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$1,717,705	\$1,778,151
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$872,851	\$1,296,565
7. Changes of assumptions or other inputs	200,032	369,550
8. Difference between projected and actual earnings on pension plan investments	437,711	588,902
9. Difference between expected and actual experience in the Total Pension Liability	<u>774,494</u>	<u>789,153</u>
10. Total Deferred Inflows of Resources	\$2,285,088	\$3,044,170

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:

2019	N/A	\$(216,425)
2020	\$(196,181)	(330,232)
2021	(516,673)	(650,724)
2022	4,672	(129,379)
2023	194,195	60,143
2024	(53,396)	598
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Vector Control District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	580,065	724,719
3. Difference between projected and actual earnings on pension plan investments	2,352,302	882,069
4. Difference between expected and actual experience in the Total Pension Liability	<u>228,434</u>	<u>286,098</u>
5. Total Deferred Outflows of Resources	\$3,160,801	\$1,892,886
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	0	0
8. Difference between projected and actual earnings on pension plan investments	1,278,263	1,732,987
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,811,847</u>	<u>1,258,406</u>
10. Total Deferred Inflows of Resources	\$3,090,110	\$2,991,393

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:

2019	N/A	\$(144,660)
2020	\$262	(300,571)
2021	(362,816)	(663,649)
2022	109,504	(191,329)
2023	500,535	199,703
2024	(176,794)	1,999
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Retirement System

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$2,594,615	\$1,233,255
2. Changes of assumptions or other inputs	2,445,231	2,798,016
3. Difference between projected and actual earnings on pension plan investments	5,304,404	1,565,430
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$10,344,250	\$5,596,701
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$330,892	\$443,441
7. Changes of assumptions or other inputs	374,031	632,877
8. Difference between projected and actual earnings on pension plan investments	2,919,627	3,620,981
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,894,371</u>	<u>2,024,402</u>
10. Total Deferred Inflows of Resources	\$5,518,921	\$6,721,701

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:

2019	N/A	\$(90,487)
2020	\$1,050,111	(322,796)
2021	652,140	(699,315)
2022	826,474	(562,695)
2023	2,027,486	544,845
2024	269,118	5,448
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Fire Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	44,462,250	59,656,589
3. Difference between projected and actual earnings on pension plan investments	130,602,672	39,155,278
4. Difference between expected and actual experience in the Total Pension Liability	<u>703,034</u>	<u>942,161</u>
5. Total Deferred Outflows of Resources	\$175,767,956	\$99,754,028
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	858,688	1,586,390
8. Difference between projected and actual earnings on pension plan investments	69,359,310	93,798,878
9. Difference between expected and actual experience in the Total Pension Liability	<u>58,320,223</u>	<u>60,331,638</u>
10. Total Deferred Inflows of Resources	\$128,538,221	\$155,716,906

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:

2019	N/A	\$(3,928,262)
2020	\$15,998,056	(9,491,844)
2021	(2,215,414)	(27,705,314)
2022	5,226,034	(20,263,866)
2023	30,862,579	5,372,683
2024	(2,641,520)	53,725
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: Cypress Recreation and Parks

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	93,704	117,072
3. Difference between projected and actual earnings on pension plan investments	282,642	0
4. Difference between expected and actual experience in the Total Pension Liability	<u>2,865,838</u>	<u>3,559,994</u>
5. Total Deferred Outflows of Resources	\$3,242,184	\$3,677,066
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	0	0
8. Difference between projected and actual earnings on pension plan investments	2,401,373	3,201,831
9. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
10. Total Deferred Inflows of Resources	\$2,401,373	\$3,201,831

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:

2019	N/A	\$(66,512)
2020	\$7,493	(66,512)
2021	7,493	(66,512)
2022	7,494	(66,511)
2023	807,953	733,946
2024	10,378	7,336
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: Department of Education

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	236,853	295,919
3. Difference between projected and actual earnings on pension plan investments	872,456	304,850
4. Difference between expected and actual experience in the Total Pension Liability	<u>369,390</u>	<u>372,992</u>
5. Total Deferred Outflows of Resources	\$1,478,699	\$973,761
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	66,119	122,153
8. Difference between projected and actual earnings on pension plan investments	499,033	685,764
9. Difference between expected and actual experience in the Total Pension Liability	<u>940,191</u>	<u>1,201,641</u>
10. Total Deferred Inflows of Resources	\$1,505,343	\$2,009,558

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:

2019	N/A	\$(121,629)
2020	\$99,788	(114,333)
2021	(146,986)	(361,107)
2022	(76,751)	(290,872)
2023	67,730	(146,389)
2024	29,575	(1,467)
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: Transportation Corridor Agency

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	1,172,875	1,465,362
3. Difference between projected and actual earnings on pension plan investments	2,855,534	832,113
4. Difference between expected and actual experience in the Total Pension Liability	<u>114,750</u>	<u>156,559</u>
5. Total Deferred Outflows of Resources	\$4,143,159	\$2,454,034
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	184,306	340,496
8. Difference between projected and actual earnings on pension plan investments	1,588,385	2,148,715
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,358,355</u>	<u>1,592,621</u>
10. Total Deferred Inflows of Resources	\$3,131,046	\$4,081,832

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:

2019	N/A	\$(296,591)
2020	\$183,068	(409,840)
2021	52,104	(540,804)
2022	184,190	(408,718)
2023	620,784	27,874
2024	(28,033)	281
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: City of San Juan Capistrano

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$1,434,064	\$1,980,885
2. Changes of assumptions or other inputs	2,724,750	3,413,294
3. Difference between projected and actual earnings on pension plan investments	5,910,760	1,909,665
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$10,069,574	\$7,303,844
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$1,662,955	\$2,167,638
7. Changes of assumptions or other inputs	416,787	772,045
8. Difference between projected and actual earnings on pension plan investments	3,253,375	4,417,227
9. Difference between expected and actual experience in the Total Pension Liability	<u>2,110,920</u>	<u>2,469,564</u>
10. Total Deferred Inflows of Resources	\$7,444,037	\$9,826,474

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:

2019	N/A	\$(596,055)
2020	\$285,103	(879,449)
2021	(218,881)	(1,384,189)
2022	558,425	(605,555)
2023	2,093,974	933,288
2024	(93,084)	9,330
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Sanitation District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$872,851	\$1,296,565
2. Changes of assumptions or other inputs	16,401,122	20,491,177
3. Difference between projected and actual earnings on pension plan investments	59,867,140	16,000,909
4. Difference between expected and actual experience in the Total Pension Liability	<u>2,740,145</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$79,881,258	\$37,788,651
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$60,420	\$111,626
7. Changes of assumptions or other inputs	2,445,073	4,517,168
8. Difference between projected and actual earnings on pension plan investments	32,687,002	44,251,106
9. Difference between expected and actual experience in the Total Pension Liability	<u>10,405,119</u>	<u>15,393,406</u>
10. Total Deferred Inflows of Resources	\$45,597,614	\$64,273,306

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:

2019	N/A	\$(5,465,917)
2020	\$6,841,613	(6,857,020)
2021	3,479,359	(10,219,274)
2022	6,546,883	(7,151,750)
2023	16,876,166	3,177,532
2024	539,623	31,774
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Transportation Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	29,203,603	36,486,297
3. Difference between projected and actual earnings on pension plan investments	60,889,928	19,886,895
4. Difference between expected and actual experience in the Total Pension Liability	<u>429,659</u>	<u>638,231</u>
5. Total Deferred Outflows of Resources	\$90,523,190	\$57,011,423
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	3,903,525	7,211,596
8. Difference between projected and actual earnings on pension plan investments	33,794,383	45,783,529
9. Difference between expected and actual experience in the Total Pension Liability	<u>31,328,024</u>	<u>28,750,678</u>
10. Total Deferred Inflows of Resources	\$69,025,932	\$81,745,803

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:

2019	N/A	\$(3,879,944)
2020	\$4,198,065	(6,857,061)
2021	280,630	(10,774,496)
2022	3,397,014	(7,658,112)
2023	15,446,447	4,391,322
2024	(1,824,898)	43,911
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: U.C.I.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	1,898,677	2,372,163
3. Difference between projected and actual earnings on pension plan investments	7,212,467	2,560,794
4. Difference between expected and actual experience in the Total Pension Liability	<u>1,083,806</u>	<u>748,341</u>
5. Total Deferred Outflows of Resources	\$10,194,950	\$5,681,298
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	521,873	964,138
8. Difference between projected and actual earnings on pension plan investments	4,163,238	6,335,570
9. Difference between expected and actual experience in the Total Pension Liability	<u>3,502,059</u>	<u>4,572,031</u>
10. Total Deferred Inflows of Resources	\$8,187,170	\$11,871,739

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:

2019	N/A	\$(1,696,693)
2020	\$576,825	(1,022,172)
2021	(112,439)	(1,711,436)
2022	159,891	(1,439,106)
2023	1,281,144	(317,854)
2024	102,359	(3,180)
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Children and Families Comm.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	53,458	125,648
3. Difference between projected and actual earnings on pension plan investments	115,966	70,297
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$169,424	\$195,945
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$1,081,690	\$1,070,900
7. Changes of assumptions or other inputs	8,177	28,420
8. Difference between projected and actual earnings on pension plan investments	63,829	162,604
9. Difference between expected and actual experience in the Total Pension Liability	<u>41,415</u>	<u>90,908</u>
10. Total Deferred Inflows of Resources	\$1,195,111	\$1,352,832

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:

2019	N/A	\$(308,321)
2020	\$(342,726)	(318,753)
2021	(304,205)	(285,145)
2022	(221,833)	(194,136)
2023	(99,138)	(50,033)
2024	(57,785)	(499)
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: Local Agency Formation Comm.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$204,067	\$278,946
2. Changes of assumptions or other inputs	134,169	165,597
3. Difference between projected and actual earnings on pension plan investments	291,051	92,648
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$629,287	\$537,191
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$134,872	\$192,297
7. Changes of assumptions or other inputs	20,523	37,456
8. Difference between projected and actual earnings on pension plan investments	160,199	214,303
9. Difference between expected and actual experience in the Total Pension Liability	<u>103,944</u>	<u>119,812</u>
10. Total Deferred Inflows of Resources	\$419,538	\$563,868

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:

2019	N/A	\$3,713
2020	\$50,250	(10,036)
2021	7,729	(52,387)
2022	68,962	8,548
2023	84,409	23,256
2024	(1,601)	229
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: Rancho Santa Margarita

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	639	798
3. Difference between projected and actual earnings on pension plan investments	6,148	7,228
4. Difference between expected and actual experience in the Total Pension Liability	<u>1,170</u>	<u>965</u>
5. Total Deferred Outflows of Resources	\$7,957	\$8,991
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	203	377
8. Difference between projected and actual earnings on pension plan investments	2,995	3,993
9. Difference between expected and actual experience in the Total Pension Liability	<u>7,578</u>	<u>9,768</u>
10. Total Deferred Inflows of Resources	\$10,776	\$14,138

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:

2019	N/A	\$666
2020	\$512	(206)
2021	(1,013)	(1,731)
2022	(2,021)	(2,739)
2023	(408)	(1,128)
2024	111	(9)
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. Superior Court

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	33,295,171	43,430,635
3. Difference between projected and actual earnings on pension plan investments	72,226,722	24,298,513
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$105,521,893	\$67,729,148
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$26,463,615	\$19,200,529
7. Changes of assumptions or other inputs	5,092,945	9,823,473
8. Difference between projected and actual earnings on pension plan investments	39,754,715	56,204,643
9. Difference between expected and actual experience in the Total Pension Liability	<u>25,794,457</u>	<u>31,422,648</u>
10. Total Deferred Inflows of Resources	\$97,105,732	\$116,651,293

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:

2019	N/A	\$(11,664,619)
2020	\$(2,848,528)	(15,270,511)
2021	(5,329,545)	(17,904,480)
2022	1,391,461	(10,914,578)
2023	18,403,968	6,764,398
2024	(3,201,195)	67,645
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources: O.C. IHSS Public Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$108,921	\$149,391
2. Changes of assumptions or other inputs	221,274	277,121
3. Difference between projected and actual earnings on pension plan investments	354,965	123,697
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$685,160	\$550,209
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$11,375	\$0
7. Changes of assumptions or other inputs	23,294	43,138
8. Difference between projected and actual earnings on pension plan investments	162,393	220,897
9. Difference between expected and actual experience in the Total Pension Liability	<u>224,144</u>	<u>300,636</u>
10. Total Deferred Inflows of Resources	\$421,206	\$564,671

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:

2019	N/A	\$19,175
2020	\$59,514	(15,550)
2021	44,885	(30,209)
2022	54,262	(20,765)
2023	107,436	32,558
2024	(2,143)	329
2025	0	0
Thereafter	0	0

⁽¹⁾ Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources

There are changes in each employer's proportionate share of the total NPL during the measurement period ended December 31, 2018. 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., 2018) is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through OCERS which is 5.91 years determined as of December 31, 2017 (the beginning of the measurement period ended December 31, 2018). 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, 2018 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 for the Orange County Employees Retirement System

EXHIBIT 10

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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability: 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%

⁽¹⁾ Covered payroll represents payroll on which contributions to the pension plan are based.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11

Schedule of Reconciliation of Net Pension Liability: Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$4,952,099,401	\$5,191,216,603
2. Pension Expense	783,713,497	529,375,473
3. Employer Contributions	(580,741,000)	(571,119,000)
4. New Net Deferred Inflows/Outflows	990,085,765	(173,982,541)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	52,044,426	(23,391,134)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$6,197,202,089	\$4,952,099,401

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: Orange County

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$3,983,695,231	\$4,043,855,643
2. Pension Expense	606,017,828	413,364,516
3. Employer Contributions	(418,974,842)	(401,124,000)
4. New Net Deferred Inflows/Outflows	714,262,376	(61,773,234)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(1,123,621)	(717,319)
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	10,927,442	6,758,092
7. Recognition of Prior Deferred Inflows/Outflows	28,788,536	(13,001,350)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>(5,016,038)</u>	<u>(3,667,117)</u>
9. Ending Net Pension Liability	\$4,918,576,912	\$3,983,695,231

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Cemetery District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$(173,677)	\$222,409
2. Pension Expense	366,717	82,093
3. Employer Contributions	(164,000)	(162,000)
4. New Net Deferred Inflows/Outflows	863,874	(298,960)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	69,205	(17,219)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$962,119	\$(173,677)

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Law Library

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$(36,317)	\$1,770,282
2. Pension Expense	72,933	80,182
3. Employer Contributions	(162,000)	(1,788,000)
4. New Net Deferred Inflows/Outflows	482,211	(240,017)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(156,083)	(231,272)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>372,508</u>	<u>372,508</u>
9. Ending Net Pension Liability	\$573,252	\$(36,317)

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Vector Control District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$1,166,920	\$1,669,793
2. Pension Expense	156,577	(3,673)
3. Employer Contributions	0	0
4. New Net Deferred Inflows/Outflows	1,024,538	(474,747)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	144,660	(24,453)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$2,492,695	\$1,166,920

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Retirement System

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$21,427,080	\$21,886,393
2. Pension Expense	3,654,352	2,038,385
3. Employer Contributions	(2,187,000)	(1,960,000)
4. New Net Deferred Inflows/Outflows	4,187,357	(432,179)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(175,876)	(2,249)
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	1,809,248	41,489
7. Recognition of Prior Deferred Inflows/Outflows	464,938	182,299
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>(335,339)</u>	<u>(327,058)</u>
9. Ending Net Pension Liability	\$28,844,760	\$21,427,080

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Fire Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$370,674,668	\$469,430,660
2. Pension Expense	82,954,245	63,001,786
3. Employer Contributions	(90,090,000)	(95,575,000)
4. New Net Deferred Inflows/Outflows	99,264,351	(55,003,548)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	3,928,262	(11,179,230)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$466,731,526	\$370,674,668

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: Cypress Recreation and Parks

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$718,340	\$0
2. Pension Expense	64,831	243,105
3. Employer Contributions	(739,966)	0
4. New Net Deferred Inflows/Outflows	299,064	475,235
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	66,512	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$408,781	\$718,340

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: Department of Education

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$2,530,324	\$4,415,517
2. Pension Expense	279,359	97,769
3. Employer Contributions	(301,464)	(524,000)
4. New Net Deferred Inflows/Outflows	887,524	(1,294,044)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	121,629	(164,918)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$3,517,372	\$2,530,324

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: Transportation Corridor Agency

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$10,242,769	\$12,423,364
2. Pension Expense	1,941,952	1,349,900
3. Employer Contributions	(1,571,000)	(1,656,000)
4. New Net Deferred Inflows/Outflows	2,343,320	(1,731,239)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	296,591	(143,256)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$13,253,632	\$10,242,769

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: City of San Juan Capistrano

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$26,138,852	\$25,089,009
2. Pension Expense	3,187,038	2,000,951
3. Employer Contributions	(2,332,000)	(2,273,000)
4. New Net Deferred Inflows/Outflows	4,666,022	(527,215)
5. Change in Allocation of Prior Deferred Inflows/Outflows	6,197	(125,066)
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	(118,729)	1,396,460
7. Recognition of Prior Deferred Inflows/Outflows	518,087	222,387
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>76,591</u>	<u>355,326</u>
9. Ending Net Pension Liability	\$32,142,058	\$26,138,852

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Sanitation District

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$(39,571,102)	\$(10,384,510)
2. Pension Expense	15,260,948	1,321,482
3. Employer Contributions	(7,429,000)	(7,277,000)
4. New Net Deferred Inflows/Outflows	55,302,382	(22,315,732)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	5,838,425	(542,834)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>(372,508)</u>	<u>(372,508)</u>
9. Ending Net Pension Liability	\$29,029,145	\$(39,571,102)

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Transportation Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$212,117,162	\$230,260,478
2. Pension Expense	35,099,842	23,783,337
3. Employer Contributions	(23,660,000)	(23,118,000)
4. New Net Deferred Inflows/Outflows	42,351,694	(17,263,832)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	3,879,944	(1,544,821)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$269,788,642	\$212,117,162

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: U.C.I.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$27,644,960	\$36,113,699
2. Pension Expense	1,840,555	530,932
3. Employer Contributions	(2,875,057)	(2,948,000)
4. New Net Deferred Inflows/Outflows	6,501,528	(6,262,897)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	1,696,693	211,226
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$34,808,679	\$27,644,960

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Children and Families Comm.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$962,204	\$3,158,290
2. Pension Expense	(285,793)	(212,723)
3. Employer Contributions	(177,000)	(1,981,000)
4. New Net Deferred Inflows/Outflows	91,545	(19,407)
5. Change in Allocation of Prior Deferred Inflows/Outflows	40,279	165,166
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	(299,989)	(371,379)
7. Recognition of Prior Deferred Inflows/Outflows	10,165	8,186
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>289,199</u>	<u>215,071</u>
9. Ending Net Pension Liability	\$630,610	\$962,204

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: Local Agency Formation Comm.

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$1,268,133	\$1,340,888
2. Pension Expense	193,144	129,707
3. Employer Contributions	(115,000)	(111,000)
4. New Net Deferred Inflows/Outflows	229,759	(25,578)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(1,390)	3,329
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	11,461	(42,588)
7. Recognition of Prior Deferred Inflows/Outflows	25,511	10,790
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>(28,915)</u>	<u>(37,415)</u>
9. Ending Net Pension Liability	\$1,582,703	\$1,268,133

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: Rancho Santa Margarita

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$(2,320)	\$9,332
2. Pension Expense	1,276	782
3. Employer Contributions	0	0
4. New Net Deferred Inflows/Outflows	2,994	(9,642)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(666)	(2,792)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$1,284	\$(2,320)

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. Superior Court

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$332,589,831	\$349,173,850
2. Pension Expense	32,611,773	21,379,613
3. Employer Contributions	(29,779,000)	(30,423,000)
4. New Net Deferred Inflows/Outflows	57,016,602	(6,708,263)
5. Change in Allocation of Prior Deferred Inflows/Outflows	1,254,017	683,339
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	(12,318,058)	(7,836,200)
7. Recognition of Prior Deferred Inflows/Outflows	6,330,773	2,829,632
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>5,054,972</u>	<u>3,490,860</u>
9. Ending Net Pension Liability	\$392,760,910	\$332,589,831

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability: O.C. IHSS Public Authority

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	December 31, 2018	December 31, 2017
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$706,343	\$781,506
2. Pension Expense	295,920	187,329
3. Employer Contributions	(183,671)	(199,000)
4. New Net Deferred Inflows/Outflows	308,624	(77,242)
5. Change in Allocation of Prior Deferred Inflows/Outflows	394	(7,200)
6. New Net Deferred Flows Due to Change in Proportion ⁽¹⁾	(11,375)	54,126
7. Recognition of Prior Deferred Inflows/Outflows	21,244	(3,509)
8. Recognition of Prior Deferred Flows Due to Change in Proportion ⁽¹⁾	<u>(40,470)</u>	<u>(29,667)</u>
9. Ending Net Pension Liability	\$1,097,009	\$706,343

⁽¹⁾ Includes differences between employer contributions and proportionate share of contributions.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 12

Schedule of Recognition of Changes in Total Net Pension Liability

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	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:								
			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)	\$(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)	(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)	(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)	(11,142,029)
2019	(118,124,401)	5.91	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>(19,987,206)</u>	<u>(19,987,206)</u>	<u>(19,987,206)</u>	<u>(19,987,206)</u>	<u>(19,987,206)</u>
Net increase (decrease) in pension expense			\$(52,977,684)	\$(86,882,416)	\$(141,354,763)	\$(152,496,792)	\$(172,483,998)	\$(172,483,998)	\$(129,042,298)	\$(84,367,522)	

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	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:								
			2023	2024	2025	2026	2027	2028	2029	2030	
2015	\$(327,402,088)	6.18	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	(205,462,673)	6.06	0	0	0	0	0	0	0	0	0
2017	(323,565,741)	5.94	0	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	0
2019	(118,124,401)	5.91	<u>(19,987,206)</u>	<u>(18,188,371)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			\$(31,129,235)	\$(18,299,800)	\$0	\$0	\$0	\$0	\$0	\$0	\$0

As described in Exhibit 9, 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, 2017 (the beginning of the measurement period ending December 31, 2018) is 5.91 years.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 12 (continued)

Schedule of Recognition of Changes in Total Net Pension Liability

Reporting Date for Employer under GASB 68 Year Ended June 30	Effects of Assumption Changes	Recognition Period (Years)	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:							
			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	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
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	Effects of Assumption Changes	Recognition Period (Years)	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:							
			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	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			\$137,636,784	\$1,376,371	\$0	\$0	\$0	\$0	\$0	\$0

As described in Exhibit 9, 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, 2017 (the beginning of the measurement period ending December 31, 2018) is 5.91 years.

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 12 (continued)

Schedule of Recognition of Changes in Total Net Pension Liability

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	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:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	\$290,045,074	5.00	\$58,009,015	\$58,009,015	\$58,009,015	\$58,009,015	\$58,009,014	\$0	\$0	\$0
2016	851,007,781	5.00	N/A	170,201,555	170,201,555	170,201,555	170,201,555	170,201,561	0	0
2017	(213,982,570)	5.00	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)	5.00	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	5.00	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>272,055,741</u>	<u>272,055,741</u>	<u>272,055,741</u>	<u>272,055,741</u>
Net increase (decrease) in pension expense			\$58,009,015	\$228,210,570	\$185,414,056	\$(16,516,258)	\$255,539,482	\$197,530,474	\$27,328,913	\$70,125,425

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	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:							
			2023	2024	2025	2026	2027	2028	2029	2030
2015	\$290,045,074	5.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	851,007,781	5.00	0	0	0	0	0	0	0	0
2017	(213,982,570)	5.00	0	0	0	0	0	0	0	0
2018	(1,009,651,572)	5.00	0	0	0	0	0	0	0	0
2019	1,360,278,701	5.00	<u>272,055,737</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			\$272,055,737	\$0	\$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 for the Orange County Employees Retirement System

EXHIBIT 12 (continued)

Schedule of Recognition of Changes in Total Net Pension Liability

Reporting Date for Employer under GASB 68 Year Ended June 30	Total Differences	Total Increase (Decrease) in Pension Expense							
		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	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>252,068,535</u>	<u>252,068,535</u>	<u>252,068,535</u>	<u>252,068,535</u>
Net increase (decrease) in pension expense		\$(15,636,828)	\$120,659,995	\$23,391,134	\$(52,044,425)	\$200,024,109	\$142,015,101	\$32,203,133	\$123,394,687

Reporting Date for Employer under GASB 68 Year Ended June 30	Total Differences	Total Increase (Decrease) in Pension Expense							
		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	<u>252,068,531</u>	<u>(18,188,371)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense		\$378,563,286	\$(16,923,429)	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 13

Allocation of Changes in Total Net Pension Liability

In addition to the amounts shown in Exhibit 12, there are changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ending on December 31, 2018. 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, 2018 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 for the Orange County Employees Retirement System

EXHIBIT 13 (continued)

Allocation of Changes in Total Net Pension Liability

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)	Reporting Date for Employer under GASB 68 Year Ended June 30:						Thereafter
			2019	2020	2021	2022	2023	2024	
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	<u>(13,692)</u>	5.91	<u>(2,317)</u>	<u>(2,317)</u>	<u>(2,317)</u>	<u>(2,317)</u>	<u>(2,317)</u>	<u>(2,107)</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 13 (continued)

Allocation of Changes in Total Net Pension Liability

The amounts as of December 31, 2017 are as follows:

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:						
			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	<u>64,929</u>	6.01	<u>10,803</u>	<u>10,803</u>	<u>10,803</u>	<u>10,803</u>	<u>10,803</u>	<u>10,803</u>	<u>111</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 13 (continued)

Allocation of Changes in Total Net Pension Liability

The amounts as of December 31, 2016 are as follows:

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:						
			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	<u>48,111</u>	5.94	<u>8,099</u>	<u>8,099</u>	<u>8,099</u>	<u>8,099</u>	<u>8,099</u>	<u>7,616</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 13 (continued)

Allocation of Changes in Total Net Pension Liability

The amounts as of December 31, 2015 are as follows:

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)	Reporting Date for Employer under GASB 68 Year Ended June 30:						
			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	<u>112,452</u>	6.06	<u>18,556</u>	<u>18,556</u>	<u>18,556</u>	<u>18,556</u>	<u>18,556</u>	<u>18,556</u>	<u>1,116</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 2: GASB 68 Information for the Orange County Employees Retirement System

EXHIBIT 13 (continued)

Allocation of Changes in Total Net Pension Liability

The amounts as of December 31, 2014 are as follows:

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)	Reporting Date for Employer under GASB 68 Year Ended June 30:						
			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	<u>18,616</u>	6.18	<u>3,012</u>	<u>3,012</u>	<u>3,012</u>	<u>3,012</u>	<u>3,012</u>	<u>3,012</u>	<u>544</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

Actuarial Assumptions and Methods

For December 31, 2018 Measurement Date and Employer Reporting as of June 30, 2019

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.

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 for the Orange County Employees Retirement System

Individual Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 2.75% per year, plus “across the board” real salary increases of 0.50% per year, plus the following merit and promotional increases:

Years of Service	General	Safety
Less than 1	9.00	14.00
1	7.25	10.00
2	6.00	7.75
3	5.00	6.00
4	4.00	5.50
5	3.50	4.50
6	2.50	3.75
7	2.25	3.25
8	1.75	2.50
9	1.50	2.25
10	1.50	1.75
11	1.50	1.75
12	1.50	1.75
13	1.50	1.75
14	1.50	1.75
15	1.50	1.75
16	1.00	1.50
17	1.00	1.50
18	1.00	1.50
19	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 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

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.

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.

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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

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.

Termination Rates Before Retirement:

Age	Rate (%)	
	Mortality (General and Safety)	
	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 for the Orange County Employees Retirement System

Termination Rates Before Retirement (Continued):

Age	Rate (%)			
	Disability			
	General All Other ⁽¹⁾	General OCTA ⁽²⁾	Safety - Law & Fire ⁽³⁾	Safety - Probation ⁽⁴⁾
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

- ⁽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 for the Orange County Employees Retirement System

Termination Rates Before Retirement (Continued):

Years of Service	Rate (%)				
	General	All Other	General OCTA	Safety – Law & Fire	Safety - Probation
0	11.00		17.50	4.50	14.00
1	7.50		11.00	2.50	13.00
2	6.50		9.00	2.00	10.00
3	5.00		8.50	1.50	5.00
4	4.50		7.50	1.25	4.00
5	4.25		7.00	1.00	3.50
6	3.75		4.50	0.95	2.75
7	3.25		4.00	0.90	2.00
8	3.00		3.50	0.85	2.00
9	2.75		3.00	0.80	1.75
10	2.50		3.00	0.75	1.75
11	2.00		3.00	0.65	1.50
12	2.00		3.00	0.60	1.25
13	1.75		2.50	0.55	1.00
14	1.50		2.50	0.50	0.75
15	1.40		2.50	0.45	0.75
16	1.30		2.00	0.40	0.75
17	1.20		1.80	0.35	0.25
18	1.10		1.60	0.30	0.25
19	1.00		1.40	0.25	0.25
20 +	0.90		1.20	0.20	0.25

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

Termination Rates Before Retirement (Continued):

<u>Years of Service</u>	<u>Election for Withdrawal of Contributions (%)</u>			
	<u>General All Other</u>	<u>General OCTA</u>	<u>Safety – Law & Fire</u>	<u>Safety - Probation</u>
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 or more	20.0	20.0	20.0	25.0

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

Retirement Rates:

Age	Rate (%)							
	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 for the Orange County Employees Retirement System

Retirement Rates (Continued):

Age	Rate (%)			
	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 for the Orange County Employees Retirement System

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.

Percent Married:

75% of male members and 55% of female members are assumed to be married at retirement or time of pre-retirement death.

Age of Spouse:

Female (or male) three years younger (or older) than spouse.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

Additional Cashout 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:

	<u>Final One Year Salary</u>	<u>Final Three Year Salary</u>
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 additional cashout 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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

- 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 for the Orange County Employees Retirement System

APPENDIX A

Calculation of Discount Rate as of December 31, 2018

Projection of Pension Plan's Fiduciary Net Position (\$ 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)
2018	\$14,802	\$851	\$828	\$18	-\$325	\$14,482
2019	14,482	945	900	18	1,015	15,523
2020	15,523	967	960	19	1,086	16,598
2021	16,598	978	1,021	21	1,160	17,694
2022	17,694	994	1,084	22	1,235	18,818
2023	18,818	1,023	1,150	23	1,312	19,980
2024	19,980	1,030	1,219	25	1,391	21,157
2025	21,157	1,039	1,288	26	1,472	22,354
2026	22,354	1,049	1,359	28	1,553	23,569
2027	23,569	1,059	1,433	29	1,636	24,801
2043	36,099	176	2,645	45	2,441	36,027
2044	36,027	166	2,696	45	2,433	35,886
2045	35,886	156	2,743	44	2,421	35,677
2046	35,677	147	2,786	44	2,405	35,399
2047	35,399	138	2,824	44	2,384	35,054
2092	19,045	39	238	24	1,325	20,148
2093	20,148	39	196	25	1,404	21,369
2094	21,369	39	160	26	1,491	22,712
2095	22,712	39	129	28	1,586	24,180
2096	24,180	40	102	30	1,689	25,776
2131	255,087	315	0 **	315	17,856	272,944
2132	272,944					
2132 Discounted Value:	131 ***					

* Of all the projected total contributions, only the first year's (i.e., 2018) contribution has been reduced by discount for prepaid contributions and transfers from County Investment Account, if any.

** Less than \$1 million, when rounded.

*** \$272,944 million when discounted with interest at the rate of 7.00% per annum has a value of \$131 million as of December 31, 2018, which is about the balance in the County Investment Account as of December 31, 2018.

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, 2018.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX A (continued)

Calculation of Discount Rate as of December 31, 2018

Projection of Pension Plan's Fiduciary Net Position (\$ in millions)

Notes:

- (1) Amounts may not total exactly due to rounding.
- (2) Amounts shown in the year beginning January 1, 2018 row are actual amounts, based on the financial statements provided by OCERS.
- (3) Years 2028-2042, 2048-2091, and 2097-2130 have been omitted from this table.
- (4) Column (a): Except for the "discounted value" shown for 2132, 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, 2017), 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, 2017. The projected benefit payments reflect the cost of living increase assumptions used in the December 31, 2018 valuation report. The 2018 benefit payments have been increased by the balance of the Medicare Insurance Reserve as of December 31, 2018.
- (7) Column (d): Projected administrative expenses are calculated as approximately 0.12% of the projected beginning Plan's Fiduciary Net Position amount. The 0.12% portion was based on the actual calendar year 2018 administrative expenses (unaudited) as a percentage of the actual beginning Plan's Fiduciary Net Position as of January 1, 2018. Administrative expenses are assumed to occur halfway through the year, on average.
- (8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.00% 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, 2018 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX B

Schedule of Pension Amounts by Employer as of December 31, 2018

	Orange County	O.C. Cemetery District	O.C. Law Library	O.C. Vector Control District	O.C. Retirement System
Deferred Outflows of Resources					
Differences Between Expected and Actual Experience	\$10,053,569	\$134,653	\$0	\$228,434	\$0
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	907,051,313	859,393	1,371,152	2,352,302	5,304,404
Changes of Assumptions	451,779,162	325,633	286,133	580,065	2,445,231
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>25,452,653</u>	<u>0</u>	<u>60,420</u>	<u>0</u>	<u>2,594,615</u>
Total Deferred Outflows of Resources	\$1,394,336,697	\$1,319,679	\$1,717,705	\$3,160,801	\$10,344,250
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	\$315,142,849	\$287,311	\$774,494	\$1,811,847	\$1,894,371
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	498,410,128	450,507	437,711	1,278,263	2,919,627
Changes of Assumptions	43,625,464	38,647	200,032	0	374,031
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>108,921</u>	<u>0</u>	<u>872,851</u>	<u>0</u>	<u>330,892</u>
Total Deferred Inflows of Resources	\$857,287,362	\$776,465	\$2,285,088	\$3,090,110	\$5,518,921
Net Pension Liability as of December 31, 2017	\$3,983,695,231	\$(173,677)	\$(36,317)	\$1,166,920	\$21,427,080
Net Pension Liability as of December 31, 2018	\$4,918,576,912	\$962,119	\$573,252	\$2,492,695	\$28,844,760
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	\$598,776,241	\$366,717	\$445,441	\$156,577	\$2,950,531
Net Amortization of Deferred Amounts from Changes in					
Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>7,241,587</u>	<u>0</u>	<u>(372,508)</u>	<u>0</u>	<u>703,821</u>
Total Employer Pension Expense Excluding That					
Attributable to Employer-Paid Member Contributions	\$606,017,828	\$366,717	\$72,933	\$156,577	\$3,654,352

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2018

	O.C. Fire Authority	Cypress Recreation and Parks	Department of Education	Transportation Corridor Agency	City of San Juan Capistrano
Deferred Outflows of Resources					
Differences Between Expected and Actual Experience	\$703,034	\$2,865,838	\$369,390	\$114,750	\$0
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	130,602,672	282,642	872,456	2,855,534	5,910,760
Changes of Assumptions	44,462,250	93,704	236,853	1,172,875	2,724,750
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,434,064</u>
Total Deferred Outflows of Resources	\$175,767,956	\$3,242,184	\$1,478,699	\$4,143,159	\$10,069,574
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	\$58,320,223	\$0	\$940,191	\$1,358,355	\$2,110,920
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	69,359,310	2,401,373	499,033	1,588,385	3,253,375
Changes of Assumptions	858,688	0	66,119	184,306	416,787
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,662,955</u>
Total Deferred Inflows of Resources	\$128,538,221	\$2,401,373	\$1,505,343	\$3,131,046	\$7,444,037
Net Pension Liability as of December 31, 2017	\$370,674,668	\$718,340	\$2,530,324	\$10,242,769	\$26,138,852
Net Pension Liability as of December 31, 2018	\$466,731,526	\$408,781	\$3,517,372	\$13,253,632	\$32,142,058
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	\$82,954,245	\$64,831	\$279,359	\$1,941,952	\$3,287,810
Net Amortization of Deferred Amounts from Changes in					
Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>(100,772)</u>
Total Employer Pension Expense Excluding That					
Attributable to Employer-Paid Member Contributions	\$82,954,245	\$64,831	\$279,359	\$1,941,952	\$3,187,038

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2018

	O.C. Sanitation District	O.C. Transportation Authority	U.C.I.	O.C. Children and Families Comm.	Local Agency Formation Comm.
Deferred Outflows of Resources					
Differences Between Expected and Actual Experience	\$2,740,145	\$429,659	\$1,083,806	\$0	\$0
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	59,867,140	60,889,928	7,212,467	115,966	291,051
Changes of Assumptions	16,401,122	29,203,603	1,898,677	53,458	134,169
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>872,851</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>204,067</u>
Total Deferred Outflows of Resources	\$79,881,258	\$90,523,190	\$10,194,950	\$169,424	\$629,287
Deferred Inflows of Resources					
Differences Between Expected and Actual Experience	\$10,405,119	\$31,328,024	\$3,502,059	\$41,415	\$103,944
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	32,687,002	33,794,383	4,163,238	63,829	160,199
Changes of Assumptions	2,445,073	3,903,525	521,873	8,177	20,523
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>60,420</u>	<u>0</u>	<u>0</u>	<u>1,081,690</u>	<u>134,872</u>
Total Deferred Inflows of Resources	\$45,597,614	\$69,025,932	\$8,187,170	\$1,195,111	\$419,538
Net Pension Liability as of December 31, 2017	\$(39,571,102)	\$212,117,162	\$27,644,960	\$962,204	\$1,268,133
Net Pension Liability as of December 31, 2018	\$29,029,145	\$269,788,642	\$34,808,679	\$630,610	\$1,582,703
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions					
Proportionate Share of Allocable Plan Pension Expense	\$14,888,440	\$35,099,842	\$1,840,555	\$64,504	\$161,895
Net Amortization of Deferred Amounts from Changes in					
Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>372,508</u>	<u>0</u>	<u>0</u>	<u>(350,297)</u>	<u>31,249</u>
Total Employer Pension Expense Excluding That					
Attributable to Employer-Paid Member Contributions	\$15,260,948	\$35,099,842	\$1,840,555	\$(285,793)	\$193,144

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2018

	Rancho Santa Margarita	O.C. Superior Court	O.C. IHSS Public Authority	Total for all Employers
Deferred Outflows of Resources				
Differences Between Expected and Actual Experience	\$1,170	\$0	\$0	\$18,724,448
Difference Between Projected and Actual Investment				
Earnings on Pension Plan Investments	6,148	72,226,722	354,965	1,258,427,015
Changes of Assumptions	639	33,295,171	221,274	585,314,769
Changes in Proportion and Differences Between Employer				
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>0</u>	<u>108,921</u>	<u>30,727,591</u>
Total Deferred Outflows of Resources	\$7,957	\$105,521,893	\$685,160	\$1,893,193,823
Deferred Inflows of Resources				
Differences Between Expected and Actual Experience	\$7,578	\$25,794,457	\$224,144	\$454,047,301
Difference Between Projected and Actual Investment				
Earnings on Pension Plan Investments	2,995	39,754,715	162,393	691,386,466
Changes of Assumptions	203	5,092,945	23,294	57,779,687
Changes in Proportion and Differences Between Employer				
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>26,463,615</u>	<u>11,375</u>	<u>30,727,591</u>
Total Deferred Inflows of Resources	\$10,776	\$97,105,732	\$421,206	\$1,233,941,045
Net Pension Liability as of December 31, 2017	\$(2,320)	\$332,589,831	\$706,343	\$4,952,099,401
Net Pension Liability as of December 31, 2018	\$1,284	\$392,760,910	\$1,097,009	\$6,197,202,089
Pension Expense Excluding That Attributable to Employer-Paid Member Contributions				
Proportionate Share of Allocable Plan Pension Expense	\$1,276	\$40,175,514	\$257,767	\$783,713,497
Net Amortization of Deferred Amounts from Changes in				
Proportion and Differences Between Employer				
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>(7,563,741)</u>	<u>38,153</u>	<u>0</u>
Total Employer Pension Expense Excluding That				
Attributable to Employer-Paid Member Contributions	\$1,276	\$32,611,773	\$295,920	\$783,713,497

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX B (continued)

Schedule of Pension Amounts by Employer as of December 31, 2018

Notes:

Amounts shown in this exhibit were allocated by employer based on the Employer Allocation Percentage calculated in Exhibit 7 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., 2018) 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, 2017 (the beginning of the measurement period ending December 31, 2018) and is 5.91 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.

Note: Results may not total due to rounding.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX C

GLOSSARY

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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX C (continued)

GLOSSARY

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.

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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX C (continued)

GLOSSARY

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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX C (continued)

GLOSSARY

Discount rate

The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:

1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the Pension Plan's Fiduciary Net Position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.
2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

Entry age actuarial cost method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the *normal cost*. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the *actuarial accrued liability*.

Inactive employees

Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.

Measurement period

The period between the prior and the current measurement dates.

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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX C (continued)

GLOSSARY

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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Orange County Employees Retirement System

APPENDIX C (continued)

GLOSSARY

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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