

# **Orange County Employees Retirement System**

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

**Actuarial Valuation Based on December 31, 2017  
Measurement Date for Employer Reporting  
as of June 30, 2018**



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. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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*June 1, 2018*

*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, 2017 measurement date for employer reporting as of June 30, 2018. 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; 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 OCERS.*

*Sincerely,*

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

By:

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*AW/jl*

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

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### **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, 2018. 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, 2017. 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, 2016, provided by OCERS;
- The assets of the Plan as of December 31, 2017, provided by OCERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2017 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2017 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.

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

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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.

### Significant Issues in Valuation Year

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

- The NPL's measured as of December 31, 2017 and 2016 have been determined by rolling forward the TPL as of December 31, 2016 and 2015, 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.
- The NPL decreased slightly from \$5,191.2 million as of December 31, 2016 to \$4,952.1 million as of December 31, 2017 primarily as a result of a 14.79% return on the market value of assets during 2017 that was greater than the assumed return of 7.25%. The gain was offset to some extent by the \$827.2 million loss from changes in actuarial assumptions. Changes in these values during the last two plan years ending December 31, 2016 and December 31, 2017 can be found in Exhibit 5.
- The discount rates originally used to determine the TPL and NPL as of December 31, 2017 and December 31, 2016 were 7.25% and 7.25%, respectively, following the same assumptions used by OCERS in the pension funding valuations as of December 31, 2016 and December 31, 2015. However, as the Board has approved a new discount rate of 7.00% (together with other new actuarial assumptions) for use in the next pension funding valuation as of December 31, 2017, we have estimated the impact of this assumption change by (1) revaluing the actuarial valuation TPL as of December 31, 2016 (before the roll forward) and (2) using this revalued TPL in rolling forward the results from December 31, 2016 to December 31, 2017. The detailed calculation of the discount rate of 7.00% used in the calculation of the TPL and NPL as of December 31, 2017 can be found in Appendix A of Section 3. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 13 in Section 2.
- The Plan's Fiduciary Net Position of \$12,809,208,000 as of December 31, 2016 is equal to the final market value of assets in the Pension Trust Fund as of December 31, 2016. This differs from the \$12,657,418,000 market value of assets used in our December 31, 2016 funding valuation because the funding valuation excludes \$117,723,000 in the County Investment Account and \$34,067,000 in O.C. Sanitation District UAAL Deferred Account.

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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 the UAAL increase due to the assumption changes).

- 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, 2017. 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 #1<sup>1</sup> 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.

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<sup>1</sup> The NPL for Rate Group #1 was adjusted by the NPLs for the O.C. Vector Control District, Cypress Parks and Recreation, 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 <sup>(1)</sup>	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	December 31, 2017	December 31, 2016
<b>Disclosure elements for plan year ending December 31:</b>		
1. Service cost <sup>(2)</sup>	\$452,412,003	\$427,473,217
2. Total Pension Liability	19,753,994,401	18,000,424,603
3. Plan's Fiduciary Net Position	14,801,895,000	12,809,208,000
4. Net Pension Liability	4,952,099,401	5,191,216,603
5. Pension expense	529,375,473	600,371,307
<b>Schedule of contributions for plan year ending December 31:</b>		
6. Actuarially determined contributions <sup>(3)</sup>	\$536,726,000 <sup>(4)</sup>	\$521,447,000
7. Actual contributions <sup>(3)</sup>	572,104,000 <sup>(4)(5)</sup>	567,196,000 <sup>(6)</sup>
8. Contribution deficiency (excess) (6) – (7)	(35,378,000) <sup>(5)</sup>	(45,749,000) <sup>(6)</sup>
<b>Demographic data for plan year ending December 31:</b>		
9. Number of retired members and beneficiaries	16,947	16,369
10. Number of vested terminated members	5,803	5,370
11. Number of active members	21,721	21,746
<b>Key assumptions as of December 31:</b>		
12. Investment rate of return	7.00%	7.25%
13. Inflation rate	2.75%	3.00%
14. Projected salary increases <sup>(7)</sup>	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%

<sup>(1)</sup> The reporting date and measurement date for the plan are December 31, 2017 and December 31, 2016.

<sup>(2)</sup> The service cost is based on the previous year's valuation, meaning the 2017 and 2016 values are based on the valuations as of December 31, 2016 and December 31, 2015, respectively. Both of the service costs have been calculated using the assumptions shown in the December 31, 2016 column as there had been no changes in the actuarial assumptions between the December 31, 2016 and December 31, 2015 valuations.

<sup>(3)</sup> Reduced by discount for prepaid contributions and transfer from County Investment Account, if any.

<sup>(4)</sup> \$24,042,000 transfer from O.C. Sanitation District Deferred UAAL Account required to offset the UAAL increase due to the assumption changes has been excluded from both these amounts.

<sup>(5)</sup> 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.

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

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<sup>(6)</sup> 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.

<sup>(7)</sup> Includes inflation at 2.75% plus real across-the-board salary increases of 0.50% plus merit and promotional increases for December 31, 2017 and includes inflation at 3.00% plus real across-the-board salary increases of 0.50% plus merit and promotional increases for December 31, 2016.

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

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### 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 valuation 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

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- 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**

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**EXHIBIT 1**

**General Information – “Financial Statements”, Note Disclosures and Required Supplementary Information for a Cost-Sharing Pension Plan**

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**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 twelve 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, 2017, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	16,947
Vested terminated members entitled to, but not yet receiving benefits	5,803
Active members	<u>21,721</u>
Total	44,471

*Note: Data as of December 31, 2017 is not used in the measurement of the TPL as of December 31, 2017.*

*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

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

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members employed 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).

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.

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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 2017 or the second half of fiscal year 2016-2017 (based on the December 31, 2014 valuation) was 37.41%<sup>1</sup> of compensation. The average employer contribution rate for the last six months of calendar year 2017 or the first half of fiscal year 2017-2018 (based on the December 31, 2015 valuation) was 37.25%<sup>1</sup> 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 2017 or the second half of fiscal year 2016-2017 (based on the December 31, 2014 valuation) was 12.42%<sup>2</sup> of compensation. The average member contribution rate for the last six months of calendar year 2017 or the first half of fiscal year 2017-2018 (based on the December 31, 2015 valuation) was 12.21%<sup>2</sup> of compensation.

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<sup>1</sup> *These employer contribution rates are higher than the composite rate for 2017 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.*

<sup>2</sup> *It should be noted that these member contribution rates provided above have not been adjusted to reflect any pick-ups or reverse pick-ups.*

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

**EXHIBIT 2**

**Net Pension Liability**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
The components of the Net Pension Liability are as follows:		
Total Pension Liability	\$19,753,994,401	\$18,000,424,603
Plan's Fiduciary Net Position	<u>(14,801,895,000)</u>	<u>(12,809,208,000)</u>
Net Pension Liability	\$4,952,099,401	\$5,191,216,603
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	74.93%	71.16%

The Net Pension Liability (NPL) was measured as of December 31, 2017 and 2016. 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, 2016 and 2015, respectively.

*Plan provisions.* The plan provisions used in the measurement of the NPL as of December 31, 2017 and 2016 are the same as those used in the OCERS actuarial valuations as of December 31, 2017 and 2016, respectively.

*Actuarial assumptions.* The TPL as of December 31, 2017 was remeasured by (1) revaluing the TPL as of December 31, 2016 (before the roll forward) to include the following actuarial assumptions that the Retirement Board has adopted for use in the pension funding valuation as of December 31, 2017 and (2) using this revalued TPL in rolling forward the results from December 31, 2016 to December 31, 2017:

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

The TPL as of December 31, 2016 was determined by an actuarial valuation as of December 31, 2015. The actuarial assumptions used were based on the results of an experience study for the period from January 1, 2011 through December 31, 2013 and they are the same assumptions used in the December 31, 2016 funding valuation for OCERS.

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**EXHIBIT 2 (continued)**

**Net Pension Liability**

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Inflation	3.00%
Salary increases	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%, vary by service, including inflation
Investment rate of return	7.25%, net of pension plan investment expense, including inflation
Other assumptions	See analysis of actuarial experience during the period January 1, 2011 through December 31, 2013

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### EXHIBIT 3

#### Target Asset Allocation

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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, used in the derivation of the December 31, 2017 long-term expected investment rate of return assumption are summarized in the following table:

<b>Asset Class</b>	<b>Target Allocation</b>	<b>Long-Term Expected Arithmetic Real Rate of Return</b>
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%
<b>Total</b>	<b>100.0%</b>	

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### EXHIBIT 3 (continued)

#### Target Asset Allocation

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*Discount rate.* The discount rates used to measure the TPL were 7.00% and 7.25% as of December 31, 2017 and 2016, respectively. 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, 2017 and 2016.

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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, 2017, 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:

<b>Employer</b>	<b>1% Decrease (6.00%)</b>	<b>Current Discount Rate (7.00%)</b>	<b>1% Increase (8.00%)</b>
Orange County	\$6,138,092,034	\$3,983,695,231	\$2,233,515,119
O.C. Cemetery District	1,257,143	(173,677)	(1,336,041)
O.C. Law Library	1,484,732	(36,317)	(1,271,981)
O.C. Vector Control District	5,335,981	1,166,920	(2,219,924)
O.C. Retirement System	32,650,996	21,427,080	12,309,040
O.C. Fire Authority	649,140,476	370,674,668	144,455,748
Cypress Parks and Recreation	2,310,431	718,340	(575,036)
Department of Education	4,388,612	2,530,324	1,020,696
Transportation Corridor Agency	16,738,791	10,242,769	4,965,557
City of San Juan Capistrano	39,830,885	26,138,852	15,015,774
O.C. Sanitation District	57,945,374	(39,571,102)	(118,791,140)
O.C. Transportation Authority	348,497,798	212,117,162	101,324,816
U.C.I.	43,977,243	27,644,960	14,377,007
O.C. Children and Families Comm.	2,388,100	962,204	(196,159)
Local Agency Formation Comm.	1,932,406	1,268,133	728,494
Rancho Santa Margarita	4,617	(2,320)	(7,955)
O.C. Superior Court	506,806,776	332,589,831	191,060,178
O.C. IHSS Public Authority	<u>1,363,228</u>	<u>706,343</u>	<u>172,705</u>
<b>Total for all Employers</b>	<b>\$7,854,145,623</b>	<b>\$4,952,099,401</b>	<b>\$2,594,546,898</b>

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

**EXHIBIT 5**

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

Reporting Date for Employer under GASB 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	December 31, 2017	December 31, 2016
<b>Total Pension Liability</b>		
1. Service cost	\$452,412,003	\$427,473,217
2. Interest	1,305,268,322	1,241,079,174
3. Change of benefit terms	0	0
4. Differences between expected and actual experience	(66,963,603)	(323,565,741)
5. Changes of assumptions	827,197,076	0
6. Benefit payments, including refunds of member contributions	(764,344,000)	(717,976,000)
7. Transfer of members among Rate Groups	0	0
8. Other <sup>(1)</sup>	0	(508,788)
9. Net change in Total Pension Liability	\$1,753,569,798	\$626,501,862
10. Total Pension Liability – beginning	<u>18,000,424,603</u>	<u>17,373,922,741</u>
11. Total Pension Liability – ending	<u>\$19,753,994,401</u>	<u>\$18,000,424,603</u>
<b>Plan's Fiduciary Net Position</b>		
12. Contributions – employer <sup>(2)</sup>	\$572,104,000 <sup>(3)</sup>	\$567,196,000
13. Contributions – plan members	262,294,000	258,297,000
14. Net investment income	1,939,635,000	1,061,243,000
15. Benefit payments, including refunds of member contributions	(764,344,000)	(717,976,000)
16. Transfer of members among Rate Groups	0	0
17. Administrative expense	(17,002,000)	(16,870,000)
18. Other	0	0
19. Net change in Plan's Fiduciary Net Position	\$1,992,687,000	\$1,151,890,000
20. Plan's Fiduciary Net Position – beginning	<u>12,809,208,000</u>	<u>11,657,318,000</u>
21. Plan's Fiduciary Net Position – ending	\$14,801,895,000	\$12,809,208,000
22. Net Pension Liability – ending (11) – (21)	<u>\$4,952,099,401</u>	<u>\$5,191,216,603</u>
23. Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	74.93%	71.16%
24. Covered payroll <sup>(4)</sup>	\$1,678,322,000	\$1,602,675,000
25. Plan Net Pension Liability as percentage of covered payroll	295.06%	323.91%

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

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### EXHIBIT 5 (continued)

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

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- <sup>(1)</sup> *O.C. Law Library was separated out from O.C. Sanitation District in Rate Group #3 and put into their own Rate Group (Rate Group #12) after the December 31, 2015 valuation. As we previously described in our October 2016 letters to OCERS for these two employers, there was an adjustment to the UAAL for Rate Group #3 that we originally included in our December 31, 2015 valuation. This was a credit of \$509,000 given to O.C. Law Library to reflect that their future service enhancement did not increase the UAAL.*
- <sup>(2)</sup> *Reduced by discount for prepaid contributions and transfers from County Investment Account, if any.*
- <sup>(3)</sup> *\$24,042,000 transfer from O.C. Sanitation District Deferred UAAL Account required to offset the UAAL increase for the assumption changes has been excluded from this amount.*
- <sup>(4)</sup> *Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.*

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

**EXHIBIT 6**

**Schedule of OCERS' Contributions – Last Ten Plan Years**

<b>Year Ended December 31</b>	<b>Actuarially Determined Contributions<sup>(1),(2)</sup></b>	<b>Contributions in Relation to the Actuarially Determined Contributions<sup>(1),(2)</sup></b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Payroll<sup>(3)</sup></b>	<b>Contributions as a Percentage of Covered Payroll<sup>(1),(2)</sup></b>
2008	\$359,673,000	\$360,365,000 <sup>(4)</sup>	\$(692,000)	\$1,526,113,000	23.61%
2009	337,496,000	338,387,000 <sup>(5)</sup>	(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 <sup>(6)</sup>	(1,075,000)	1,494,745,000	28.57%
2014	476,320,000	625,520,000 <sup>(7)</sup>	(149,200,000)	1,513,206,000	41.34%
2015	502,886,000	571,298,000 <sup>(8)</sup>	(68,412,000)	1,521,036,000	37.56%
2016	521,447,000	567,196,000 <sup>(9)</sup>	(45,749,000)	1,602,675,000	35.40%
2017	536,726,000 <sup>(10)</sup>	572,104,000 <sup>(10),(11)</sup>	(35,378,000)	1,678,322,000	34.09%

<sup>(1)</sup> 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>
2008	\$0	2013	\$5,000,000
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

<sup>(2)</sup> Reduced by discount for prepaid contributions.

<sup>(3)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

<sup>(4)</sup> Includes additional contributions of \$692,000 made by O.C. Fire Authority towards the reduction of their UAAL.

<sup>(5)</sup> Includes additional contributions of \$891,000 made by O.C. Fire Authority towards the reduction of their UAAL.

<sup>(6)</sup> Includes additional contributions of \$1,075,000 made by O.C. Fire Authority towards the reduction of their UAAL.

<sup>(7)</sup> 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

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### EXHIBIT 6 (continued)

#### Schedule of OCERS' Contributions – Last Ten Plan Years

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- <sup>(8)</sup> *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.*
- <sup>(9)</sup> *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.*
- <sup>(10)</sup> *\$24,042,000 transfer from O.C. Sanitation District Deferred UAAL Account required to offset the UAAL increase for the assumption changes has been excluded from both these amounts.*
- <sup>(11)</sup> *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.*

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

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### Notes to Exhibit 6

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

##### Valuation date

Actuarially determined contribution rates for the first six months of calendar year 2017 or the second half of fiscal year 2016-2017 are calculated based on the December 31, 2014 valuation. Actuarially determined contribution rates for the last six months of calendar year 2017 or the first half of fiscal year 2017-2018 are calculated based on the December 31, 2015 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

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### Notes to Exhibit 6 – continued

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#### Actuarial assumptions:

December 31, 2014 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, 2014 funding actuarial valuation

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

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**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, 2016 to December 31, 2016**

<b>Employer</b>	<b>Rate Group #1</b>		<b>Rate Group #2</b>		<b>Rate Group #3</b>	
	<b>Rate Group #1</b>	<b>Percentage</b>	<b>Rate Group #2</b>	<b>Percentage</b>	<b>Rate Group #3</b>	<b>Percentage</b>
Orange County	\$14,670,000	98.721%	\$247,553,000	87.257%	\$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%	1,975,000	0.696%	0	0.000%
O.C. Fire Authority	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%	2,264,000	0.798%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	9,764,000	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%	285,000	0.100%	0	0.000%
Local Agency Formation Comm.	0	0.000%	121,000	0.043%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	31,509,000	11.106%	0	0.000%
O.C. IHSS Public Authority	<u>190,000</u>	<u>1.279%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
<b>Total for all Employers</b>	<b>\$14,860,000</b>	<b>100.000%</b>	<b>\$283,707,000</b>	<b>100.000%</b>	<b>\$9,764,000</b>	<b>100.000%</b>

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**

<b>Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group</b>						
<b>January 1, 2016 to December 31, 2016</b>						
<b>Employer</b>	<b>Rate Group #4</b>		<b>Rate Group #5</b>		<b>Rate Group #9</b>	
	<b>Rate Group #4</b>	<b>Percentage</b>	<b>Rate Group #5</b>	<b>Percentage</b>	<b>Rate Group #9</b>	<b>Percentage</b>
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%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	1,799,000	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%	24,584,000	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>
<b>Total for all Employers</b>	<b>\$0</b>	<b>100.000%</b>	<b>\$24,584,000</b>	<b>100.000%</b>	<b>\$1,799,000</b>	<b>100.000%</b>

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**

<b>Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2016 to December 31, 2016</b>						
<b>Employer</b>	<b>Rate Group #10</b>		<b>Rate Group #11</b>		<b>Rate Group #12</b>	
	<b>Rate Group #10</b>	<b>Percentage</b>	<b>Rate Group #11</b>	<b>Percentage</b>	<b>Rate Group #12</b>	<b>Percentage</b>
Orange County	\$0	0.000%	\$0	0.000%	\$0	0.000%
O.C. Cemetery District	0	0.000%	160,000	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	316,000	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	8,105,000	100.000%	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>
<b>Total for all Employers</b>	<b>\$8,105,000</b>	<b>100.000%</b>	<b>\$160,000</b>	<b>100.000%</b>	<b>\$316,000</b>	<b>100.000%</b>

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**

<b>Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2016 to December 31, 2016</b>						
<b>Employer</b>	<b>Rate Group #6</b>		<b>Rate Group #7</b>		<b>Rate Group #8</b>	
	<b>Rate Group #6</b>	<b>Percentage</b>	<b>Rate Group #7</b>	<b>Percentage</b>	<b>Rate Group #8</b>	<b>Percentage</b>
Orange County	\$25,628,000	100.000%	\$118,592,000	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%	54,594,000	100.000%
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>
<b>Total for all Employers</b>	<b>\$25,628,000</b>	<b>100.000%</b>	<b>\$118,592,000</b>	<b>100.000%</b>	<b>\$54,594,000</b>	<b>100.000%</b>

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**

<b>Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group January 1, 2016 to December 31, 2016</b>		
<b>Employer</b>	<b>Total Contributions<sup>(1)</sup></b>	<b>Total Percentage</b>
Orange County	\$406,443,000	74.974%
O.C. Cemetery District	160,000	0.030%
O.C. Law Library	316,000	0.058%
O.C. Vector Control District	0	0.000%
O.C. Retirement System	1,975,000	0.364%
O.C. Fire Authority	62,699,000	11.566%
Department of Education	0	0.000%
Transportation Corridor Agency	1,799,000	0.332%
City of San Juan Capistrano	2,264,000	0.418%
O.C. Sanitation District	9,764,000	1.801%
O.C. Transportation Authority	24,584,000	4.535%
U.C.I.	0	0.000%
O.C. Children and Families Comm.	285,000	0.053%
Local Agency Formation Comm.	121,000	0.022%
Rancho Santa Margarita	0	0.000%
O.C. Superior Court	31,509,000	5.812%
O.C. IHSS Public Authority	<u>190,000</u>	<u>0.035%</u>
Total for all Employers	\$542,109,000	100.000%

<sup>(1)</sup> Excludes combined additional contributions of \$12,220,000 made by O.C. Law Library, O.C. Fire Authority and O.C. Sanitation District towards the reduction of their UAALs, \$33,529,000 made by O.C. Sanitation District towards their UAAL Deferred Account, combined contributions of \$1,315,000 made by U.C.I. and combined employer pick-up contributions of \$2,376,000.

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, 2016 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	\$55,990,224	56.573%	\$2,670,961,353	86.955%	\$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 <sup>(2)</sup>	1,669,793	1.687%	0	0.000%	0	0.000%
O.C. Retirement System	0	0.000%	21,886,393	0.713%	0	0.000%
O.C. Fire Authority	0	0.000%	0	0.000%	0	0.000%
Department of Education <sup>(2)</sup>	4,415,517	4.461%	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%	25,089,009	0.817%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	(10,384,510)	100.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I. <sup>(2)</sup>	36,113,699	36.489%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	3,158,290	0.103%	0	0.000%
Local Agency Formation Comm.	0	0.000%	1,340,888	0.044%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	349,173,850	11.368%	0	0.000%
O.C. IHSS Public Authority	<u>781,506</u>	<u>0.790%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total for all Employers	\$98,970,739	100.000%	\$3,071,609,783	100.000%	\$(10,384,510)	100.000%

<sup>(2)</sup> In determining the NPLs for the O.C. Vector Control District, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2015 to December 31, 2016 for the actual contributions, benefit payments and return on their VVAs during 2016. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2016. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

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, 2016 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%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	12,423,364	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%	230,260,478	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	9,332	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	\$9,332	100.000%	\$230,260,478	100.000%	\$12,423,364	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**

<b>Allocation of December 31, 2016 Net Pension Liability</b>						
<b>Employer</b>	<b>Rate Group #10</b>		<b>Rate Group #11</b>		<b>Rate Group #12</b>	
	<b>Rate Group #10</b>	<b>Percentage</b>	<b>Rate Group #11</b>	<b>Percentage</b>	<b>Rate Group #12</b>	<b>Percentage</b>
Orange County	\$0	0.000%	\$0	0.000%	\$0	0.000%
O.C. Cemetery District	0	0.000%	222,409	100.000%	0	0.000%
O.C. Law Library	0	0.000%	0	0.000%	1,770,282	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	66,956,418	100.000%	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	\$66,956,418	100.000%	\$222,409	100.000%	\$1,770,282	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**

<b>Allocation of December 31, 2016 Net Pension Liability</b>						
<b>Employer</b>	<b>Rate Group #6</b>		<b>Rate Group #7</b>		<b>Rate Group #8</b>	
	<b>Rate Group #6</b>	<b>Percentage</b>	<b>Rate Group #7</b>	<b>Percentage</b>	<b>Rate Group #8</b>	<b>Percentage</b>
Orange County	\$217,761,584	100.000%	\$1,099,142,482	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%	402,474,242	100.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
Total for all Employers	\$217,761,584	100.000%	\$1,099,142,482	100.000%	\$402,474,242	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**

<b>Allocation of December 31, 2016 Net Pension Liability</b>		
<b>Employer</b>	<b>Total NPL</b>	<b>Total Percentage</b>
Orange County	\$4,043,855,643	77.898%
O.C. Cemetery District	222,409	0.004%
O.C. Law Library	1,770,282	0.034%
O.C. Vector Control District <sup>(2)</sup>	1,669,793	0.032%
O.C. Retirement System	21,886,393	0.422%
O.C. Fire Authority	469,430,660	9.043%
Department of Education <sup>(2)</sup>	4,415,517	0.085%
Transportation Corridor Agency	12,423,364	0.239%
City of San Juan Capistrano	25,089,009	0.483%
O.C. Sanitation District	(10,384,510)	(0.200%)
O.C. Transportation Authority	230,260,478	4.436%
U.C.I. <sup>(2)</sup>	36,113,699	0.696%
O.C. Children and Families Comm.	3,158,290	0.061%
Local Agency Formation Comm.	1,340,888	0.026%
Rancho Santa Margarita	9,332	0.000%
O.C. Superior Court	349,173,850	6.726%
O.C. IHSS Public Authority	<u>781,506</u>	<u>0.015%</u>
Total for all Employers	\$5,191,216,603	100.000%

<sup>(2)</sup> In determining the NPLs for the O.C. Vector Control District, Department of Education and U.C.I., we first start by rolling forward the VVAs of these employers as of December 31, 2015 to December 31, 2016 for the actual contributions, benefit payments and return on their VVAs during 2016. Those VVAs are then marked to the Plan's Fiduciary Net Position as of December 31, 2016. The TPLs for these employers are obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not total due to rounding.

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

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### EXHIBIT 7 (continued)

#### Determination of Proportionate Share

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##### Notes Regarding Determination of Proportionate Share as of December 31, 2016 Measurement Date:

1. Based on the January 1, 2016 through December 31, 2016 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 2016.)
- 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 2016. Again, as there were no such County POB contributions made during 2016, we have continued to apply the same proportions determined in 2014 for each of the four County Rate Groups to allocate the \$117,723,000 in the County Investment Account as of December 31, 2016. These amounts are provided in item 3. The O.C. Sanitation District UAAL Deferred Account is allocated entirely to Rate Group #3.
- 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, 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 three 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 (U.C.I.): \$1,315,000
  - 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 contribution referenced in (i) above is adjusted with interest to December 31, 2016 and is used to reduced the NPL for the employer as of December 31, 2016.

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

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### EXHIBIT 7 (continued)

#### Determination of Proportionate Share

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##### Notes Regarding Determination of Proportionate Share as of December 31, 2016 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:	\$4,350,249
Rate Group #2:	72,351,166
Rate Group #6:	7,519,398
Rate Group #7:	<u>33,502,187</u>
Total:	\$117,723,000

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**

<b>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</b>						
<b>Employer</b>	<b>Rate Group #1</b>		<b>Rate Group #2</b>		<b>Rate Group #3</b>	
	<b>Rate Group #1</b>	<b>Percentage</b>	<b>Rate Group #2</b>	<b>Percentage</b>	<b>Rate Group #3</b>	<b>Percentage</b>
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 Parks and Recreation <sup>(1)</sup>	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%

<sup>(1)</sup> 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**

<b>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</b>						
<b>Employer</b>	<b>Rate Group #4</b>		<b>Rate Group #5</b>		<b>Rate Group #9</b>	
	<b>Rate Group #4</b>	<b>Percentage</b>	<b>Rate Group #5</b>	<b>Percentage</b>	<b>Rate Group #9</b>	<b>Percentage</b>
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 Parks and Recreation	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>
<b>Total for all Employers</b>	<b>\$0</b>	<b>100.000%</b>	<b>\$24,310,000</b>	<b>100.000%</b>	<b>\$1,738,000</b>	<b>100.000%</b>

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**

<b>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</b>						
<b>Employer</b>	<b>Rate Group #10</b>		<b>Rate Group #11</b>		<b>Rate Group #12</b>	
	<b>Rate Group #10</b>	<b>Percentage</b>	<b>Rate Group #11</b>	<b>Percentage</b>	<b>Rate Group #12</b>	<b>Percentage</b>
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 Parks and Recreation	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>
<b>Total for all Employers</b>	<b>\$8,348,000</b>	<b>100.000%</b>	<b>\$170,000</b>	<b>100.000%</b>	<b>\$264,000</b>	<b>100.000%</b>

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**

<b>Actual Contributions (Excluding Employer Paid Member Contributions and not Reduced for Discount due to Prepaid Contributions) by Employer and Rate Group</b>						
<b>January 1, 2017 to December 31, 2017</b>						
<b>Employer</b>	<b>Rate Group #6</b>		<b>Rate Group #7</b>		<b>Rate Group #8</b>	
	<b>Rate Group #6</b>	<b>Percentage</b>	<b>Rate Group #7</b>	<b>Percentage</b>	<b>Rate Group #8</b>	<b>Percentage</b>
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 Parks and Recreation	0	0.000%	0	0.000%	0	0.000%
Department of Education	0	0.000%	0	0.000%	0	0.000%
Transportation Corridor Agency	0	0.000%	0	0.000%	0	0.000%
City of San Juan Capistrano	0	0.000%	0	0.000%	0	0.000%
O.C. Sanitation District	0	0.000%	0	0.000%	0	0.000%
O.C. Transportation Authority	0	0.000%	0	0.000%	0	0.000%
U.C.I.	0	0.000%	0	0.000%	0	0.000%
O.C. Children and Families Comm.	0	0.000%	0	0.000%	0	0.000%
Local Agency Formation Comm.	0	0.000%	0	0.000%	0	0.000%
Rancho Santa Margarita	0	0.000%	0	0.000%	0	0.000%
O.C. Superior Court	0	0.000%	0	0.000%	0	0.000%
O.C. IHSS Public Authority	0	0.000%	0	0.000%	0	0.000%
<b>Total for all Employers</b>	<b>\$26,930,000</b>	<b>100.000%</b>	<b>\$131,526,000</b>	<b>100.000%</b>	<b>\$56,891,000</b>	<b>100.000%</b>

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**

<b>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</b>		
<b>Employer</b>	<b>Total Contributions<sup>(2)</sup></b>	<b>Total Percentage</b>
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 Parks and Recreation <sup>(1)</sup>	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%

<sup>(1)</sup> 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.

<sup>(2)</sup> 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 <sup>(3)</sup>	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 Parks and Recreation <sup>(3)</sup>	718,340	0.910%	0	0.000%	0	0.000%	
Department of Education <sup>(3)</sup>	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. <sup>(3)</sup>	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%	

<sup>(3)</sup> In determining the NPLs for the O.C. Vector Control District, Cypress Parks and Recreation, 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**

<b>Allocation of December 31, 2017 Net Pension Liability</b>						
<b>Employer</b>	<b>Rate Group #4</b>		<b>Rate Group #5</b>		<b>Rate Group #9</b>	
	<b>Rate Group #4</b>	<b>Percentage</b>	<b>Rate Group #5</b>	<b>Percentage</b>	<b>Rate Group #9</b>	<b>Percentage</b>
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 Parks and Recreation	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**

<b>Allocation of December 31, 2017 Net Pension Liability</b>						
<b>Employer</b>	<b>Rate Group #10</b>		<b>Rate Group #11</b>		<b>Rate Group #12</b>	
	<b>Rate Group #10</b>	<b>Percentage</b>	<b>Rate Group #11</b>	<b>Percentage</b>	<b>Rate Group #12</b>	<b>Percentage</b>
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 Parks and Recreation	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**

<b>Allocation of December 31, 2017 Net Pension Liability</b>						
<b>Employer</b>	<b>Rate Group #6</b>		<b>Rate Group #7</b>		<b>Rate Group #8</b>	
	<b>Rate Group #6</b>	<b>Percentage</b>	<b>Rate Group #7</b>	<b>Percentage</b>	<b>Rate Group #8</b>	<b>Percentage</b>
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 Parks and Recreation	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**

<b>Allocation of December 31, 2017 Net Pension Liability</b>		
<b>Employer</b>	<b>Total NPL</b>	<b>Total Percentage</b>
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 <sup>(3)</sup>	1,166,920	0.024%
O.C. Retirement System	21,427,080	0.433%
O.C. Fire Authority	370,674,668	7.485%
Cypress Parks and Recreation <sup>(3)</sup>	718,340	0.015%
Department of Education <sup>(3)</sup>	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. <sup>(3)</sup>	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%

<sup>(3)</sup> In determining the NPLs for the O.C. Vector Control District, Cypress Parks and Recreation, 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

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### EXHIBIT 7 (continued)

#### Determination of Proportionate Share

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##### 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 assumptions 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 Parks and Recreation, 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 reduce the NPL for the three employers as of December 31, 2017.

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

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### EXHIBIT 7 (continued)

#### Determination of Proportionate Share

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##### 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

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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$452,412,003	\$427,473,217
2. Interest on the Total Pension Liability	1,305,268,323	1,241,079,174
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	(11,142,029)	(54,472,347)
6. Expensed portion of current-period changes of assumptions or other inputs	137,636,784	0
7. Member contributions <sup>(1)</sup>	(263,279,000)	(260,673,000)
8. Projected earnings on plan investments	(929,983,428)	(847,260,430)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(201,930,314)	(42,796,514)
10. Administrative expense	17,002,000	16,870,000
11. Other <sup>(2)</sup>	0	(508,788)
12. Recognition of beginning of year deferred outflows of resources as pension expense	258,095,232	257,782,993
13. Recognition of beginning of year deferred inflows of resources as pension expense	(234,704,098)	(137,122,998)
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>
<b>Pension Expense</b>	<b>\$529,375,473</b>	<b>\$600,371,307</b>

<sup>(1)</sup> Member contributions include employer paid member contributions, if any.

<sup>(2)</sup> O.C. Law Library was separated out from O.C. Sanitation District in Rate Group #3 and put into their own Rate Group (Rate Group #12) after the valuation as of December 31, 2015. As we previously described in our October 2016 letters to OCERS for these two employers, there was an adjustment to the UAAL for Rate Group #3 that we originally included in our December 31, 2015 valuation. This was a credit or a reduction in pension expense of \$509,000 (or \$508,788 before the credit was rounded to the nearest \$1,000) given to O.C. Law Library to reflect that their future service enhancement did not increase the UAAL.

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

**EXHIBIT 8 (continued)**

**Pension Expense: Orange County**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$331,004,944	\$310,677,756
2. Interest on the Total Pension Liability	965,662,018	913,821,313
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	1,348,921	2,433,278
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	(2,367,219)	(41,565,082)
6. Expensed portion of current-period changes of assumptions or other inputs	105,720,645	0
7. Member contributions <sup>(1)</sup>	(201,833,900)	(199,977,528)
8. Projected earnings on plan investments	(670,274,220)	(610,558,840)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(144,893,476)	(31,008,753)
10. Administrative expense	12,328,336	11,987,403
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	189,480,429	189,096,136
13. Recognition of beginning of year deferred inflows of resources as pension expense	(176,479,079)	(103,441,319)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>3,667,117</u>	<u>1,233,839</u>
<b>Pension Expense</b>	<b>\$413,364,516</b>	<b>\$442,698,203</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$266,508	\$252,024
2. Interest on the Total Pension Liability	632,926	601,969
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	(34,941)	(33,320)
6. Expensed portion of current-period changes of assumptions or other inputs	81,205	0
7. Member contributions <sup>(1)</sup>	(131,000)	(122,000)
8. Projected earnings on plan investments	(623,108)	(569,032)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(132,686)	(26,224)
10. Administrative expense	5,970	5,579
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	151,243	151,243
13. Recognition of beginning of year deferred inflows of resources as pension expense	(134,024)	(74,480)
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>
<b>Pension Expense</b>	<b>\$82,093</b>	<b>\$185,759</b>

<sup>(1)</sup> 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 Measurement Date for Employer under GASB 68 Components of Pension Expense	June 30, 2018 December 31, 2017	June 30, 2017 December 31, 2016
1. Service cost	\$293,545	\$279,061
2. Interest on the Total Pension Liability	680,271	637,114
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	(11,212)	(27,568)
6. Expensed portion of current-period changes of assumptions or other inputs	71,355	0
7. Member contributions <sup>(1)</sup>	(163,000)	(168,000)
8. Projected earnings on plan investments	(553,962)	(400,416)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(135,333)	(15,858)
10. Administrative expense	39,754	40,198
11. Other <sup>(2)</sup>	0	(47,635)
12. Recognition of beginning of year deferred outflows of resources as pension expense	711,421	711,421
13. Recognition of beginning of year deferred inflows of resources as pension expense	(480,149)	(436,723)
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>
<b>Pension Expense</b>	<b>\$80,182</b>	<b>\$199,086</b>

<sup>(1)</sup> Member contributions include employer paid member contributions, if any.

<sup>(2)</sup> O.C. Law Library was separated out from O.C. Sanitation District in Rate Group #3 and put into their own Rate Group (Rate Group #12) after the valuation as of December 31, 2015. As we previously described in our October 2016 letters to OCERS for these two employers, there was an adjustment to the UAAL for Rate Group #3 that we originally included in our December 31, 2015 valuation. This was a credit or a reduction in pension expense of \$509,000 (or \$508,788 before the credit was rounded to the nearest \$1,000) given to O.C. Law Library to reflect that their future service enhancement did not increase the UAAL. In addition, there was an adjustment of \$461,153 (which increased the pension expense) to true up the TPL and Plan's Fiduciary Net Position for O.C. Sanitation District to account for the separation of O.C. Law Library from O.C. Sanitation District in Rate Group #3 into their own Rate Group (Rate Group #12) after the valuation as of December 31, 2015.

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

**EXHIBIT 8 (continued)**

**Pension Expense: O.C. Vector Control District**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	1,912,655	1,865,032
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	55,049	2,615
6. Expensed portion of current-period changes of assumptions or other inputs	144,654	0
7. Member contributions <sup>(1)</sup>	(4,000)	0
8. Projected earnings on plan investments	(1,767,751)	(1,723,119)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(368,815)	(85,909)
10. Administrative expense	82	0
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	521,606	518,991
13. Recognition of beginning of year deferred inflows of resources as pension expense	(497,153)	(411,244)
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>
<b>Pension Expense</b>	<b>\$(3,673)</b>	<b>\$166,366</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$1,689,285	\$1,600,895
2. Interest on the Total Pension Liability	5,190,896	4,937,984
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	8,281	(112,549)
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	(21,922)	(243,301)
6. Expensed portion of current-period changes of assumptions or other inputs	558,486	0
7. Member contributions <sup>(1)</sup>	(1,214,802)	(1,231,971)
8. Projected earnings on plan investments	(3,600,833)	(3,297,426)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(780,091)	(166,647)
10. Administrative expense	64,326	64,645
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	898,870	897,655
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,081,169)	(669,760)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>327,058</u>	<u>439,607</u>
<b>Pension Expense</b>	<b>\$2,038,385</b>	<b>\$2,219,132</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$54,227,641	\$51,569,319
2. Interest on the Total Pension Liability	126,475,589	120,041,748
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	(4,002,910)	(5,249,320)
6. Expensed portion of current-period changes of assumptions or other inputs	9,375,593	0
7. Member contributions <sup>(1)</sup>	(22,249,000)	(20,637,000)
8. Projected earnings on plan investments	(93,925,010)	(83,957,811)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(20,480,172)	(3,959,396)
10. Administrative expense	2,400,825	1,771,539
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	28,417,306	28,178,179
13. Recognition of beginning of year deferred inflows of resources as pension expense	(17,238,076)	(7,790,233)
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>
<b>Pension Expense</b>	<b>\$63,001,786</b>	<b>\$79,967,025</b>

<sup>(1)</sup> 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 Parks and Recreation**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	299,448	0
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	710,578	0
6. Expensed portion of current-period changes of assumptions or other inputs	23,368	0
7. Member contributions <sup>(1)</sup>	0	0
8. Projected earnings on plan investments	10,169	0
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(800,458)	
10. Administrative expense	0	0
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	0	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	0	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>
<b>Pension Expense</b>	<b>\$243,105</b>	<b>\$0</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	872,268	979,191
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	(205,455)	(1,101)
6. Expensed portion of current-period changes of assumptions or other inputs	59,066	0
7. Member contributions <sup>(1)</sup>	0	0
8. Projected earnings on plan investments	(663,547)	(667,430)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(140,158)	(39,279)
10. Administrative expense	10,677	0
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	323,520	323,520
13. Recognition of beginning of year deferred inflows of resources as pension expense	(158,602)	(118,222)
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>
<b>Pension Expense</b>	<b>\$97,769</b>	<b>\$476,679</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$1,481,244	\$1,410,755
2. Interest on the Total Pension Liability	2,926,806	2,837,696
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	(264,613)	32,522
6. Expensed portion of current-period changes of assumptions or other inputs	292,487	0
7. Member contributions <sup>(1)</sup>	(692,000)	(724,000)
8. Projected earnings on plan investments	(2,117,402)	(1,886,066)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(467,722)	(92,608)
10. Administrative expense	47,844	49,701
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	514,489	481,967
13. Recognition of beginning of year deferred inflows of resources as pension expense	(371,233)	(278,625)
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>
<b>Pension Expense</b>	<b>\$1,349,900</b>	<b>\$1,831,342</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$2,060,755	\$1,835,153
2. Interest on the Total Pension Liability	6,332,364	5,660,555
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	278,735	(295,453)
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	(26,743)	(278,903)
6. Expensed portion of current-period changes of assumptions or other inputs	681,296	0
7. Member contributions <sup>(1)</sup>	(1,481,934)	(1,412,245)
8. Projected earnings on plan investments	(4,392,649)	(3,779,936)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(951,631)	(191,032)
10. Administrative expense	78,471	74,105
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,096,529	1,029,009
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,318,916)	(767,766)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(355,326)</u>	<u>(59,873)</u>
<b>Pension Expense</b>	<b>\$2,000,951</b>	<b>\$1,813,614</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$14,599,044	\$14,366,332
2. Interest on the Total Pension Liability	44,099,066	42,188,934
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	(912,523)	(809,609)
6. Expensed portion of current-period changes of assumptions or other inputs	4,090,055	0
7. Member contributions <sup>(1)</sup>	(7,496,000)	(7,328,000)
8. Projected earnings on plan investments	(44,715,731)	(39,478,918)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(9,558,791)	(2,005,313)
10. Administrative expense	301,020	1,139,179
11. Other <sup>(2)</sup>	0	(461,153)
12. Recognition of beginning of year deferred outflows of resources as pension expense	8,696,006	8,696,006
13. Recognition of beginning of year deferred inflows of resources as pension expense	(8,153,172)	(5,338,250)
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>
<b>Pension Expense</b>	<b>\$1,321,482</b>	<b>\$11,341,716</b>

<sup>(1)</sup> Member contributions include employer paid member contributions, if any.

<sup>(2)</sup> There was an adjustment of \$(461,153) (which decreased the pension expense) to true up the TPL and Plan's Fiduciary Net Position for O.C. Sanitation District to account for the separation of O.C. Law Library from O.C. Sanitation District in Rate Group #3 into their own Rate Group (Rate Group #12) after the valuation as of December 31, 2015.

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

**EXHIBIT 8 (continued)**

**Pension Expense: O.C. Transportation Authority**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$20,177,368	\$19,401,018
2. Interest on the Total Pension Liability	61,058,113	59,200,130
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	(2,891,372)	(2,389,215)
6. Expensed portion of current-period changes of assumptions or other inputs	7,282,694	0
7. Member contributions <sup>(1)</sup>	(8,926,000)	(9,069,000)
8. Projected earnings on plan investments	(45,299,139)	(41,830,640)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(9,816,088)	(2,173,058)
10. Administrative expense	652,940	660,214
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	11,640,577	11,640,577
13. Recognition of beginning of year deferred inflows of resources as pension expense	(10,095,756)	(5,533,483)
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>
<b>Pension Expense</b>	<b>\$23,783,337</b>	<b>\$29,906,543</b>

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$0	\$32,564
2. Interest on the Total Pension Liability	7,693,145	8,229,536
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	(791,340)	36,729
6. Expensed portion of current-period changes of assumptions or other inputs	473,486	0
7. Member contributions <sup>(1)</sup>	0	(2,000)
8. Projected earnings on plan investments	(5,525,591)	(5,609,543)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,167,612)	(330,201)
10. Administrative expense	60,070	26,915
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,514,390	1,477,661
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,725,616)	(1,395,415)
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>
<b>Pension Expense</b>	<b>\$530,932</b>	<b>\$2,466,246</b>

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$75,858	\$231,015
2. Interest on the Total Pension Liability	233,102	712,570
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(74,128)	(100,828)
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	(984)	(35,109)
6. Expensed portion of current-period changes of assumptions or other inputs	25,079	0
7. Member contributions <sup>(1)</sup>	(54,552)	(177,778)
8. Projected earnings on plan investments	(161,699)	(475,831)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(35,031)	(24,048)
10. Administrative expense	2,889	9,329
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	40,365	129,535
13. Recognition of beginning of year deferred inflows of resources as pension expense	(48,551)	(96,649)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(215,071)</u>	<u>(114,243)</u>
<b>Pension Expense</b>	<b>\$(212,723)</b>	<b>\$57,963</b>

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$99,978	\$98,081
2. Interest on the Total Pension Liability	307,216	302,530
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(8,500)	51,545
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	(1,297)	(14,906)
6. Expensed portion of current-period changes of assumptions or other inputs	33,053	0
7. Member contributions <sup>(1)</sup>	(71,896)	(75,478)
8. Projected earnings on plan investments	(213,110)	(202,020)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(46,169)	(10,210)
10. Administrative expense	3,807	3,961
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	53,198	54,996
13. Recognition of beginning of year deferred inflows of resources as pension expense	(63,988)	(41,033)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>37,415</u>	<u>(14,130)</u>
<b>Pension Expense</b>	<b>\$129,707</b>	<b>\$153,336</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$0	\$0
2. Interest on the Total Pension Liability	3,263	3,734
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	(1,287)	(635)
6. Expensed portion of current-period changes of assumptions or other inputs	159	0
7. Member contributions <sup>(1)</sup>	0	0
8. Projected earnings on plan investments	(3,147)	(3,524)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(998)	1,246
10. Administrative expense	0	0
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	3,869	2,623
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,077)	(442)
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>
<b>Pension Expense</b>	<b>\$782</b>	<b>\$3,002</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$26,220,982	\$25,540,564
2. Interest on the Total Pension Liability	80,572,779	78,780,220
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(1,564,112)	(1,984,092)
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	(340,280)	(3,881,603)
6. Expensed portion of current-period changes of assumptions or other inputs	8,668,789	0
7. Member contributions <sup>(1)</sup>	(18,856,078)	(19,654,778)
8. Projected earnings on plan investments	(55,891,915)	(52,606,887)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(12,108,524)	(2,658,671)
10. Administrative expense	998,464	1,031,349
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	13,952,203	14,321,126
13. Recognition of beginning of year deferred inflows of resources as pension expense	(16,781,835)	(10,685,305)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(3,490,860)</u>	<u>(1,506,768)</u>
<b>Pension Expense</b>	<b>\$21,379,613</b>	<b>\$26,695,155</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Components of Pension Expense</b>		
1. Service cost	\$214,851	\$178,680
2. Interest on the Total Pension Liability	316,398	278,918
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	10,803	8,099
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	(33,558)	(14,541)
6. Expensed portion of current-period changes of assumptions or other inputs	55,314	0
7. Member contributions <sup>(1)</sup>	(104,838)	(93,222)
8. Projected earnings on plan investments	(264,783)	(212,991)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(46,559)	(10,553)
10. Administrative expense	6,525	5,883
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	79,211	72,348
13. Recognition of beginning of year deferred inflows of resources as pension expense	(75,702)	(44,049)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>29,667</u>	<u>21,568</u>
<b>Pension Expense</b>	<b>\$187,329</b>	<b>\$190,140</b>

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$24,632,387	\$21,323,498
2. Changes of assumptions or other inputs	751,249,228	89,986,612
3. Difference between projected and actual earnings on pension plan investments	399,097,683	627,991,311
4. Difference between expected and actual experience in the Total Pension Liability	<u>19,285,230</u>	<u>3,792,676</u>
5. Total Deferred Outflows of Resources	\$1,194,264,528	\$743,094,097
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$24,632,387	\$21,323,498
7. Changes of assumptions or other inputs	106,745,521	155,711,355
8. Difference between projected and actual earnings on pension plan investments	936,796,353	172,554,667
9. Difference between expected and actual experience in the Total Pension Liability	<u>508,967,680</u>	<u>579,008,315</u>
10. Total Deferred Inflows of Resources	\$1,577,141,941	\$928,597,835

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:**

2018	N/A	\$23,391,134
2019	\$(52,044,426)	23,391,133
2020	(110,053,434)	(34,617,875)
2021	(219,865,402)	(144,429,843)
2022	(128,673,848)	(53,238,287)
2023	126,494,755	0
2024	1,264,942	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$19,581,719	\$16,466,285
2. Changes of assumptions or other inputs	578,664,495	71,482,998
3. Difference between projected and actual earnings on pension plan investments	289,836,042	455,782,748
4. Difference between expected and actual experience in the Total Pension Liability	<u>12,560,694</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$900,642,950	\$543,732,031
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$149,391	\$124,932
7. Changes of assumptions or other inputs	80,224,845	116,628,948
8. Difference between projected and actual earnings on pension plan investments	672,815,006	124,035,010
9. Difference between expected and actual experience in the Total Pension Liability	<u>358,243,068</u>	<u>441,331,575</u>
10. Total Deferred Inflows of Resources	\$1,111,432,310	\$682,120,465

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

**Reporting Date for Employer under GASB 68 Year Ended June 30:**

2018	N/A	\$16,748,100
2019	\$(23,522,660)	16,748,104
2020	(67,689,625)	(27,320,778)
2021	(146,661,529)	(106,192,104)
2022	(78,664,919)	(38,371,756)
2023	104,702,347	0
2024	1,047,026	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	406,838	0
3. Difference between projected and actual earnings on pension plan investments	262,218	407,188
4. Difference between expected and actual experience in the Total Pension Liability	<u>19,195</u>	<u>25,468</u>
5. Total Deferred Outflows of Resources	\$688,251	\$432,656
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	71,399	104,151
8. Difference between projected and actual earnings on pension plan investments	609,417	104,895
9. Difference between expected and actual experience in the Total Pension Liability	<u>397,300</u>	<u>297,296</u>
10. Total Deferred Inflows of Resources	\$1,078,116	\$506,342

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:**

2018	N/A	\$17,219
2019	\$(69,205)	17,217
2020	(96,923)	(10,501)
2021	(153,101)	(66,679)
2022	(117,366)	(30,942)
2023	46,264	0
2024	466	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$111,626	\$162,832
2. Changes of assumptions or other inputs	357,488	0
3. Difference between projected and actual earnings on pension plan investments	1,309,037	2,020,458
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$1,778,151	\$2,183,290
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,296,565	\$1,720,279
7. Changes of assumptions or other inputs	369,550	539,068
8. Difference between projected and actual earnings on pension plan investments	588,902	63,430
9. Difference between expected and actual experience in the Total Pension Liability	<u>789,153</u>	<u>1,027,751</u>
10. Total Deferred Inflows of Resources	\$3,044,170	\$3,350,528

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:**

2018	N/A	\$(141,236)
2019	\$(216,425)	(141,235)
2020	(330,232)	(255,042)
2021	(650,724)	(575,534)
2022	(129,379)	(54,191)
2023	60,143	0
2024	598	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	724,719	0
3. Difference between projected and actual earnings on pension plan investments	882,069	1,401,060
4. Difference between expected and actual experience in the Total Pension Liability	<u>286,098</u>	<u>12,918</u>
5. Total Deferred Outflows of Resources	\$1,892,886	\$1,413,978
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	0	0
8. Difference between projected and actual earnings on pension plan investments	1,732,987	343,635
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,258,406</u>	<u>1,669,650</u>
10. Total Deferred Inflows of Resources	\$2,991,393	\$2,013,285

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:**

2018	N/A	\$24,453
2019	\$(144,660)	24,452
2020	(300,571)	(131,459)
2021	(663,649)	(494,537)
2022	(191,329)	(22,216)
2023	199,703	0
2024	1,999	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,233,255	\$1,631,373
2. Changes of assumptions or other inputs	2,798,016	0
3. Difference between projected and actual earnings on pension plan investments	1,565,430	2,460,971
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$5,596,701	\$4,092,344
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$443,441	\$555,990
7. Changes of assumptions or other inputs	632,877	921,940
8. Difference between projected and actual earnings on pension plan investments	3,620,981	666,587
9. Difference between expected and actual experience in the Total Pension Liability	<u>2,024,402</u>	<u>2,535,127</u>
10. Total Deferred Inflows of Resources	\$6,721,701	\$4,679,644

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:**

2018	N/A	\$145,005
2019	\$(90,487)	145,005
2020	(322,796)	(86,990)
2021	(699,315)	(463,194)
2022	(562,695)	(327,126)
2023	544,845	0
2024	5,448	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	59,656,589	18,503,614
3. Difference between projected and actual earnings on pension plan investments	39,155,278	61,514,711
4. Difference between expected and actual experience in the Total Pension Liability	<u>942,161</u>	<u>1,181,288</u>
5. Total Deferred Outflows of Resources	\$99,754,028	\$81,199,613
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	1,586,390	2,314,092
8. Difference between projected and actual earnings on pension plan investments	93,798,878	15,837,586
9. Difference between expected and actual experience in the Total Pension Liability	<u>60,331,638</u>	<u>52,828,035</u>
10. Total Deferred Inflows of Resources	\$155,716,906	\$70,979,713

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:**

2018	N/A	\$11,179,230
2019	\$(3,928,262)	11,179,227
2020	(9,491,844)	5,615,645
2021	(27,705,314)	(12,597,825)
2022	(20,263,866)	(5,156,377)
2023	5,372,683	0
2024	53,725	0
Thereafter	0	0

<sup>(1)</sup> 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 Parks and Recreation**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	117,072	0
3. Difference between projected and actual earnings on pension plan investments	0	0
4. Difference between expected and actual experience in the Total Pension Liability	<u>3,559,994</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$3,677,066	\$0
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	0	0
8. Difference between projected and actual earnings on pension plan investments	3,201,831	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
10. Total Deferred Inflows of Resources	\$3,201,831	\$0

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:**

2018	N/A	\$0
2019	\$(66,512)	0
2020	(66,512)	0
2021	(66,512)	0
2022	(66,511)	0
2023	733,946	0
2024	7,336	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	295,919	0
3. Difference between projected and actual earnings on pension plan investments	304,850	457,274
4. Difference between expected and actual experience in the Total Pension Liability	<u>372,992</u>	<u>544,088</u>
5. Total Deferred Outflows of Resources	\$973,761	\$1,001,362
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	122,153	178,187
8. Difference between projected and actual earnings on pension plan investments	685,764	171,705
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,201,641</u>	<u>228,305</u>
10. Total Deferred Inflows of Resources	\$2,009,558	\$578,197

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:**

2018	N/A	\$164,918
2019	\$(121,629)	164,918
2020	(114,333)	172,214
2021	(361,107)	(74,560)
2022	(290,872)	(4,325)
2023	(146,389)	0
2024	(1,467)	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	1,465,362	0
3. Difference between projected and actual earnings on pension plan investments	832,113	1,304,793
4. Difference between expected and actual experience in the Total Pension Liability	<u>156,559</u>	<u>198,368</u>
5. Total Deferred Outflows of Resources	\$2,454,034	\$1,503,161
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	340,496	496,686
8. Difference between projected and actual earnings on pension plan investments	2,148,715	370,433
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,592,621</u>	<u>389,345</u>
10. Total Deferred Inflows of Resources	\$4,081,832	\$1,256,464

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:**

2018	N/A	\$143,256
2019	\$(296,591)	143,257
2020	(409,840)	30,008
2021	(540,804)	(100,956)
2022	(408,718)	31,132
2023	27,874	0
2024	281	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,980,885	\$852,511
2. Changes of assumptions or other inputs	3,413,294	0
3. Difference between projected and actual earnings on pension plan investments	1,909,665	2,821,082
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$7,303,844	\$3,673,593
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$2,167,638	\$2,791,050
7. Changes of assumptions or other inputs	772,045	1,056,846
8. Difference between projected and actual earnings on pension plan investments	4,417,227	764,129
9. Difference between expected and actual experience in the Total Pension Liability	<u>2,469,564</u>	<u>2,906,090</u>
10. Total Deferred Inflows of Resources	\$9,826,474	\$7,518,115

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:**

2018	N/A	\$(564,018)
2019	\$(596,055)	(564,018)
2020	(879,449)	(829,961)
2021	(1,384,189)	(1,317,158)
2022	(605,555)	(569,367)
2023	933,288	0
2024	9,330	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,296,565	\$1,720,279
2. Changes of assumptions or other inputs	20,491,177	0
3. Difference between projected and actual earnings on pension plan investments	16,000,909	24,696,915
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$37,788,651	\$26,417,194
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$111,626	\$162,832
7. Changes of assumptions or other inputs	4,517,168	6,589,263
8. Difference between projected and actual earnings on pension plan investments	44,251,106	8,021,253
9. Difference between expected and actual experience in the Total Pension Liability	<u>15,393,406</u>	<u>14,897,427</u>
10. Total Deferred Inflows of Resources	\$64,273,306	\$29,670,775

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:**

2018	N/A	\$915,342
2019	\$(5,465,917)	915,342
2020	(6,857,020)	(475,761)
2021	(10,219,274)	(3,838,015)
2022	(7,151,750)	(770,489)
2023	3,177,532	0
2024	31,774	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	36,486,297	0
3. Difference between projected and actual earnings on pension plan investments	19,886,895	31,318,900
4. Difference between expected and actual experience in the Total Pension Liability	<u>638,231</u>	<u>846,803</u>
5. Total Deferred Outflows of Resources	\$57,011,423	\$32,165,703
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	7,211,596	10,519,667
8. Difference between projected and actual earnings on pension plan investments	45,783,529	8,692,234
9. Difference between expected and actual experience in the Total Pension Liability	<u>28,750,678</u>	<u>18,879,529</u>
10. Total Deferred Inflows of Resources	\$81,745,803	\$38,091,430

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:**

2018	N/A	\$1,544,821
2019	\$(3,879,944)	1,544,822
2020	(6,857,061)	(1,432,295)
2021	(10,774,496)	(5,349,730)
2022	(7,658,112)	(2,233,345)
2023	4,391,322	0
2024	43,911	0
Thereafter	0	0

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	2,372,163	0
3. Difference between projected and actual earnings on pension plan investments	2,560,794	3,841,190
4. Difference between expected and actual experience in the Total Pension Liability	<u>748,341</u>	<u>982,335</u>
5. Total Deferred Outflows of Resources	\$5,681,298	\$4,823,525
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	964,138	1,406,403
8. Difference between projected and actual earnings on pension plan investments	6,335,570	2,669,842
9. Difference between expected and actual experience in the Total Pension Liability	<u>4,572,031</u>	<u>886,050</u>
10. Total Deferred Inflows of Resources	\$11,871,739	\$4,962,295

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:**

2018	N/A	\$(211,226)
2019	\$(1,696,693)	(211,227)
2020	(1,022,172)	463,294
2021	(1,711,436)	(225,970)
2022	(1,439,106)	46,359
2023	(317,854)	0
2024	(3,180)	0
Thereafter	0	0

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	125,648	0
3. Difference between projected and actual earnings on pension plan investments	70,297	355,127
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$195,945	\$355,127
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,070,900	\$914,592
7. Changes of assumptions or other inputs	28,420	133,039
8. Difference between projected and actual earnings on pension plan investments	162,604	96,191
9. Difference between expected and actual experience in the Total Pension Liability	<u>90,908</u>	<u>365,828</u>
10. Total Deferred Inflows of Resources	\$1,352,832	\$1,509,650

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:**

2018	N/A	\$(241,342)
2019	\$(308,321)	(241,342)
2020	(318,753)	(274,820)
2021	(285,145)	(264,380)
2022	(194,136)	(132,639)
2023	(50,033)	0
2024	(499)	0
Thereafter	0	0

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$278,946	\$365,286
2. Changes of assumptions or other inputs	165,597	0
3. Difference between projected and actual earnings on pension plan investments	92,648	150,773
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$537,191	\$516,059
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$192,297	\$198,634
7. Changes of assumptions or other inputs	37,456	56,483
8. Difference between projected and actual earnings on pension plan investments	214,303	40,839
9. Difference between expected and actual experience in the Total Pension Liability	<u>119,812</u>	<u>155,317</u>
10. Total Deferred Inflows of Resources	\$563,868	\$451,273

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:**

2018	N/A	\$26,261
2019	\$3,713	26,261
2020	(10,036)	12,048
2021	(52,387)	(30,770)
2022	8,548	30,986
2023	23,256	0
2024	229	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	798	0
3. Difference between projected and actual earnings on pension plan investments	7,228	10,654
4. Difference between expected and actual experience in the Total Pension Liability	<u>965</u>	<u>1,408</u>
5. Total Deferred Outflows of Resources	\$8,991	\$12,062
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	377	551
8. Difference between projected and actual earnings on pension plan investments	3,993	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>9,768</u>	<u>4,224</u>
10. Total Deferred Inflows of Resources	\$14,138	\$4,775

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:**

2018	N/A	\$2,792
2019	\$666	2,792
2020	(206)	1,920
2021	(1,731)	395
2022	(2,739)	(612)
2023	(1,128)	0
2024	(9)	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	43,430,635	0
3. Difference between projected and actual earnings on pension plan investments	24,298,513	39,262,139
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$67,729,148	\$39,262,139
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$19,200,529	\$14,855,189
7. Changes of assumptions or other inputs	9,823,473	14,708,557
8. Difference between projected and actual earnings on pension plan investments	56,204,643	10,634,686
9. Difference between expected and actual experience in the Total Pension Liability	<u>31,422,648</u>	<u>40,445,221</u>
10. Total Deferred Inflows of Resources	\$116,651,293	\$80,643,653

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:**

2018	N/A	\$(6,395,313)
2019	\$(11,664,619)	(6,395,314)
2020	(15,270,511)	(10,096,552)
2021	(17,904,480)	(12,826,378)
2022	(10,914,578)	(5,667,957)
2023	6,764,398	0
2024	67,645	0
Thereafter	0	0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$149,391	\$124,932
2. Changes of assumptions or other inputs	277,121	0
3. Difference between projected and actual earnings on pension plan investments	123,697	185,328
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$550,209	\$310,260
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	43,138	57,474
8. Difference between projected and actual earnings on pension plan investments	220,897	42,212
9. Difference between expected and actual experience in the Total Pension Liability	<u>300,636</u>	<u>161,545</u>
10. Total Deferred Inflows of Resources	\$564,671	\$261,231

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:**

2018	N/A	\$32,872
2019	\$19,175	32,872
2020	(15,550)	1,155
2021	(30,209)	(12,448)
2022	(20,765)	(5,422)
2023	32,558	0
2024	329	0
Thereafter	0	0

<sup>(1)</sup> Calculated in accordance with Paragraphs 54 and 55 of GASB 68.

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

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### EXHIBIT 9 (continued)

#### Deferred Outflows of Resources and Deferred Inflows of Resources

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There are changes in each employer's proportionate share of the total NPL during the measurement period ended December 31, 2017. 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., 2017) is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through OCERS which is 6.01 years determined as of December 31, 2016 (the beginning of the measurement period ended December 31, 2017). 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, 2017 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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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 Parks and Recreation**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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.**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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.**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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.**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
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%

<sup>(1)</sup> Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of retirement benefits are included.

**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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$5,191,216,603	\$5,716,604,741
2. Pension Expense	529,375,473	600,371,307
3. Employer Contributions	(571,119,000)	(564,820,000)
4. New Net Deferred Inflows/Outflows	(173,982,541)	(440,279,450)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(23,391,134)	(120,659,995)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$4,952,099,401	\$5,191,216,603

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$4,043,855,643	\$4,391,070,880
2. Pension Expense	413,364,516	442,698,203
3. Employer Contributions	(401,124,000)	(385,953,000)
4. New Net Deferred Inflows/Outflows	(61,773,234)	(329,366,525)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(717,319)	274,357
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	6,758,092	12,020,384
7. Recognition of Prior Deferred Inflows/Outflows	(13,001,350)	(85,654,817)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>(3,667,117)</u>	<u>(1,233,839)</u>
9. Ending Net Pension Liability	\$3,983,695,231	\$4,043,855,643

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$222,409	\$533,906
2. Pension Expense	82,093	185,759
3. Employer Contributions	(162,000)	(151,000)
4. New Net Deferred Inflows/Outflows	(298,960)	(269,493)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(17,219)	(76,763)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$(173,677)	\$222,409

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$1,770,282	\$3,472,003
2. Pension Expense	80,182	199,086
3. Employer Contributions	(1,788,000)	(1,799,000)
4. New Net Deferred Inflows/Outflows	(240,017)	(199,617)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(231,272)	(274,698)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>372,508</u>	<u>372,508</u>
9. Ending Net Pension Liability	\$(36,317)	\$1,770,282

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$1,669,793	\$1,941,891
2. Pension Expense	(3,673)	166,366
3. Employer Contributions	0	0
4. New Net Deferred Inflows/Outflows	(474,747)	(330,717)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(24,453)	(107,747)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$1,166,920	\$1,669,793

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$21,886,393	\$24,747,342
2. Pension Expense	2,038,385	2,219,132
3. Employer Contributions	(1,960,000)	(1,975,000)
4. New Net Deferred Inflows/Outflows	(432,179)	(1,868,493)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(2,249)	(13,096)
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	41,489	(555,990)
7. Recognition of Prior Deferred Inflows/Outflows	182,299	(227,895)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>(327,058)</u>	<u>(439,607)</u>
9. Ending Net Pension Liability	\$21,427,080	\$21,886,393

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$469,430,660	\$517,669,806
2. Pension Expense	63,001,786	79,967,025
3. Employer Contributions	(95,575,000)	(66,049,000)
4. New Net Deferred Inflows/Outflows	(55,003,548)	(41,769,225)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(11,179,230)	(20,387,946)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$370,674,668	\$469,430,660

<sup>(1)</sup> 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 Parks and Recreation**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$0	\$0
2. Pension Expense	243,105	0
3. Employer Contributions	0	0
4. New Net Deferred Inflows/Outflows	475,235	0
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	0	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$718,340	\$0

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$4,415,517	\$4,306,689
2. Pension Expense	97,769	476,679
3. Employer Contributions	(524,000)	0
4. New Net Deferred Inflows/Outflows	(1,294,044)	(162,553)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(164,918)	(205,298)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$2,530,324	\$4,415,517

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$12,423,364	\$12,713,136
2. Pension Expense	1,349,900	1,831,342
3. Employer Contributions	(1,656,000)	(1,708,000)
4. New Net Deferred Inflows/Outflows	(1,731,239)	(209,772)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(143,256)	(203,342)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$10,242,769	\$12,423,364

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$25,089,009	\$29,249,120
2. Pension Expense	2,000,951	1,813,614
3. Employer Contributions	(2,273,000)	(2,140,000)
4. New Net Deferred Inflows/Outflows	(527,215)	(2,141,908)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(125,066)	(30,909)
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	1,396,460	(1,459,538)
7. Recognition of Prior Deferred Inflows/Outflows	222,387	(261,243)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>355,326</u>	<u>59,873</u>
9. Ending Net Pension Liability	\$26,138,852	\$25,089,009

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$(10,384,510)	\$42,439,759
2. Pension Expense	1,321,482	11,341,716
3. Employer Contributions	(7,277,000)	(48,415,000)
4. New Net Deferred Inflows/Outflows	(22,315,732)	(12,020,721)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(542,834)	(3,357,756)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>(372,508)</u>	<u>(372,508)</u>
9. Ending Net Pension Liability	\$(39,571,102)	\$(10,384,510)

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$230,260,478	\$250,192,983
2. Pension Expense	23,783,337	29,906,543
3. Employer Contributions	(23,118,000)	(23,237,000)
4. New Net Deferred Inflows/Outflows	(17,263,832)	(20,494,954)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(1,544,821)	(6,107,094)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$212,117,162	\$230,260,478

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$36,113,699	\$36,184,065
2. Pension Expense	530,932	2,466,246
3. Employer Contributions	(2,948,000)	(1,315,000)
4. New Net Deferred Inflows/Outflows	(6,262,897)	(1,139,366)
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	211,226	(82,246)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$27,644,960	\$36,113,699

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$3,158,290	\$4,066,523
2. Pension Expense	(212,723)	57,963
3. Employer Contributions	(1,981,000)	(269,000)
4. New Net Deferred Inflows/Outflows	(19,407)	(269,631)
5. Change in Allocation of Prior Deferred Inflows/Outflows	165,166	(10,834)
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	(371,379)	(498,088)
7. Recognition of Prior Deferred Inflows/Outflows	8,186	(32,886)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>215,071</u>	<u>114,243</u>
9. Ending Net Pension Liability	\$962,204	\$3,158,290

<sup>(1)</sup> 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.**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$1,340,888	\$1,156,534
2. Pension Expense	129,707	153,336
3. Employer Contributions	(111,000)	(115,000)
4. New Net Deferred Inflows/Outflows	(25,578)	(114,475)
5. Change in Allocation of Prior Deferred Inflows/Outflows	3,329	5,691
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	(42,588)	254,635
7. Recognition of Prior Deferred Inflows/Outflows	10,790	(13,963)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>(37,415)</u>	<u>14,130</u>
9. Ending Net Pension Liability	\$1,268,133	\$1,340,888

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$9,332	\$6,660
2. Pension Expense	782	3,002
3. Employer Contributions	0	0
4. New Net Deferred Inflows/Outflows	(9,642)	1,851
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(2,792)	(2,181)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$(2,320)	\$9,332

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$349,173,850	\$395,957,480
2. Pension Expense	21,379,613	26,695,155
3. Employer Contributions	(30,423,000)	(31,509,000)
4. New Net Deferred Inflows/Outflows	(6,708,263)	(29,809,804)
5. Change in Allocation of Prior Deferred Inflows/Outflows	683,339	(229,513)
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	(7,836,200)	(9,801,415)
7. Recognition of Prior Deferred Inflows/Outflows	2,829,632	(3,635,821)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>3,490,860</u>	<u>1,506,768</u>
9. Ending Net Pension Liability	\$332,589,831	\$349,173,850

<sup>(1)</sup> 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**

<b>Reporting Date for Employer under GASB 68</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>
<b>Measurement Date for Employer under GASB 68</b>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$781,506	\$895,964
2. Pension Expense	187,329	190,140
3. Employer Contributions	(199,000)	(185,000)
4. New Net Deferred Inflows/Outflows	(77,242)	(114,047)
5. Change in Allocation of Prior Deferred Inflows/Outflows	(7,200)	4,304
6. New Net Deferred Flows Due to Change in Proportion <sup>(1)</sup>	54,126	40,012
7. Recognition of Prior Deferred Inflows/Outflows	(3,509)	(28,299)
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(1)</sup>	<u>(29,667)</u>	<u>(21,568)</u>
9. Ending Net Pension Liability	\$706,343	\$781,506

<sup>(1)</sup> 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)	\$(9,535,984)	\$0
2016	(205,462,673)	6.06	N/A	(33,904,732)	(33,904,732)	(33,904,732)	(33,904,732)	(33,904,732)	(33,904,732)	(2,034,281)
2017	(323,565,741)	5.94	N/A	N/A	(54,472,347)	(54,472,347)	(54,472,347)	(54,472,347)	(54,472,347)	(51,204,006)
2018	(66,963,603)	6.01	N/A	N/A	N/A	(11,142,029)	(11,142,029)	(11,142,029)	(11,142,029)	(11,142,029)
Net increase (decrease) in pension expense			\$(52,977,684)	\$(86,882,416)	\$(141,354,763)	\$(152,496,792)	\$(152,496,792)	\$(152,496,792)	\$(109,055,092)	\$(64,380,316)

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
2016	(205,462,673)	6.06	0	0	0	0	0	0	0	0
2017	(323,565,741)	5.94	0	0	0	0	0	0	0	0
2018	(66,963,603)	6.01	(11,142,029)	(111,429)	0	0	0	0	0	0
Net increase (decrease) in pension expense			\$(11,142,029)	\$(111,429)	\$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, 2016 (the beginning of the measurement period ending December 31, 2017) is 6.01 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)	\$(20,668,159)	\$(3,720,266)	\$0
2016	0	6.06	N/A	0	0	0	0	0	0	0	0
2017	0	5.94	N/A	N/A	0	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	137,636,784
Net increase (decrease) in pension expense			\$(20,668,159)	\$(20,668,159)	\$(20,668,159)	\$116,968,625	\$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	\$0
2016	0	6.06	0	0	0	0	0	0	0	0	0
2017	0	5.94	0	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	0
Net increase (decrease) in pension expense			\$137,636,784	\$1,376,371	\$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, 2016 (the beginning of the measurement period ending December 31, 2017) is 6.01 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**

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

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	\$290,045,074	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)
Net increase (decrease) in pension expense			\$58,009,015	\$228,210,570	\$185,414,056	\$(16,516,258)	\$(16,516,259)	\$(74,525,267)	\$(244,726,828)	\$(201,930,316)

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

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	Reporting Date for Employer under GASB 68 Year Ended June 30:							
			2023	2024	2025	2026	2027	2028	2029	2030
2015	\$290,045,074	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
Net increase (decrease) in pension expense			\$0	\$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)
Net increase (decrease) in pension expense		\$(15,636,828)	\$120,659,995	\$23,391,134	\$(52,044,425)	\$(52,044,426)	\$(110,053,434)	\$(219,865,402)	\$(128,673,848)

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)	<u>126,494,755</u>	<u>1,264,942</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		\$126,494,755	\$1,264,942	\$0	\$0	\$0	\$0	\$0	\$0

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

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**EXHIBIT 13**

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

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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, 2017. 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, 2017 is recognized over the same periods. These amounts are shown below. While these amounts are different for each employer, they sum to zero over the entire 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, 2017**

	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 Parks and Recreation	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:

<b>Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for the Year Ended December 31, 2016</b>									
	<b>Total Change to be Recognized</b>	<b>Recognition Period (Years)</b>	<b>Reporting Date for Employer under GASB 68 Year Ended June 30:</b>						
			<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Thereafter</b>
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:

	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:

	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**

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**Actuarial Assumptions and Methods**

**For December 31, 2017 Measurement Date and Employer Reporting as of June 30, 2018**

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**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**

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**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:

<b>Years of Service</b>	<b>General</b>	<b>Safety</b>
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

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#### Demographic Assumptions

##### **Post – Retirement Mortality Rates:**

- Healthy:* For General Members: 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 set back four years, projected generationally with the two-dimensional MP-2016 projection scale.
- Disabled:* For General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward five years, 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.
- Beneficiaries:* Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who is receiving a service (non-disability) retirement.

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 set back 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 set back 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.

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

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For Safety Disabled Retirees: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 80% male and 20% female.

For General Beneficiaries: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 60% male and 40% female.

For Safety Beneficiaries: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 20% male and 80% female.

*Pre-Retirement Mortality Rates:*

For General and Safety Members: Headcount-Weighted RP-2014 Employee Mortality Table times 80%, projected generationally with the two-dimensional MP-2016 projection scale.

**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 <sup>(1)</sup>	General OCTA <sup>(2)</sup>	Safety - Law & Fire <sup>(3)</sup>	Safety - Probation <sup>(4)</sup>
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

- <sup>(1)</sup> 60% of General All Other disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected.
- <sup>(2)</sup> 65% of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.
- <sup>(3)</sup> 100% of Safety Law Enforcement and Fire disabilities are assumed to be service connected disabilities.
- <sup>(4)</sup> 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**

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**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**

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**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 &amp; 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 <sup>(1)</sup>	General - SJC (31676.12)	Safety - Law (31664.1) <sup>(2)</sup>	Safety - Law (31664.2) <sup>(2)</sup>	Safety - Fire (31664.1)	Safety - Fire (31664.2)	Safety - Probation <sup>(2)</sup>
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
49	30.0	25.0	0.0	12.0	0.0	2.0	0.0	0.0
50	2.5	2.0	3.0	18.0	11.5	5.0	8.0	3.3
51	2.0	2.0	3.0	18.0	12.0	7.0	10.0	3.3
52	2.5	2.0	3.0	17.0	12.7	9.5	11.0	4.3
53	2.5	2.8	3.0	17.0	17.9	10.5	12.0	4.3
54	5.5	2.8	3.0	22.0	18.8	15.0	14.0	7.0
55	15.0	3.3	4.0	22.0	30.7	18.0	24.0	12.0
56	10.0	3.5	5.0	20.0	20.0	20.0	23.0	12.0
57	10.0	5.5	6.0	20.0	20.0	21.0	27.0	18.0
58	11.0	5.5	7.0	20.0	25.0	28.0	27.0	18.0
59	11.0	6.5	9.0	26.0	30.0	28.0	36.0	18.0
60	12.0	9.3	11.0	35.0	40.0	30.0	40.0	20.0
61	12.0	12.0	13.0	35.0	40.0	30.0	40.0	20.0
62	14.0	16.0	15.0	40.0	40.0	35.0	40.0	25.0
63	16.0	16.0	15.0	40.0	40.0	35.0	40.0	40.0
64	16.0	18.0	20.0	40.0	40.0	35.0	40.0	40.0
65	22.0	22.0	20.0	100.0	100.0	100.0	100.0	100.0
66	22.0	28.0	24.0	100.0	100.0	100.0	100.0	100.0
67	23.0	24.0	24.0	100.0	100.0	100.0	100.0	100.0
68	23.0	24.0	24.0	100.0	100.0	100.0	100.0	100.0
69	23.0	20.0	24.0	100.0	100.0	100.0	100.0	100.0
70	25.0	20.0	50.0	100.0	100.0	100.0	100.0	100.0
71	25.0	25.0	50.0	100.0	100.0	100.0	100.0	100.0
72	25.0	25.0	50.0	100.0	100.0	100.0	100.0	100.0
73	25.0	25.0	50.0	100.0	100.0	100.0	100.0	100.0
74	25.0	25.0	50.0	100.0	100.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>(1)</sup> These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).

<sup>(2)</sup> 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 - Probation Formula <sup>(1)</sup>	CalPEPRA Safety - Law Formula <sup>(1)</sup>	CalPEPRA Safety - Fire Formula
50	0.0	2.5	11.0	6.0
51	0.0	2.5	11.5	7.0
52	4.0	3.0	12.0	9.0
53	1.5	3.0	16.0	10.0
54	1.5	5.5	17.0	11.5
55	2.5	10.0	28.0	21.0
56	3.5	10.0	18.0	20.0
57	5.5	15.0	17.5	22.0
58	7.5	20.0	22.0	25.0
59	7.5	20.0	26.0	30.0
60	7.5	40.0	40.0	40.0
61	7.5	40.0	40.0	40.0
62	14.0	40.0	40.0	40.0
63	14.0	40.0	40.0	40.0
64	14.0	40.0	40.0	40.0
65	18.0	100.0	100.0	100.0
66	22.0	100.0	100.0	100.0
67	23.0	100.0	100.0	100.0
68	23.0	100.0	100.0	100.0
69	23.0	100.0	100.0	100.0
70	25.0	100.0	100.0	100.0
71	25.0	100.0	100.0	100.0
72	25.0	100.0	100.0	100.0
73	25.0	100.0	100.0	100.0
74	25.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0

<sup>(1)</sup> 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

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**Retirement Age and Benefit for Deferred Vested Members:**

For current deferred vested members, we make the following retirement age assumptions:

General Age: 59

Safety Age: 53

We assume that 15% of future General and 25% of future Safety deferred vested members will continue to work for a reciprocal employer. For reciprocals, we assume 4.25% compensation increases for General and 4.75% for Safety per annum.

**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**

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**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:

	<b><u>Final One Year Salary</u></b>	<b><u>Final Three Year Salary</u></b>
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

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**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 allocated by salaries.

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

**Expected Remaining Service Lives:**

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

- Calculating each active employee’s expected remaining service life as the present value of \$1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each nonactive or retired member.

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

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- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.
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**Changes in Actuarial Assumptions and Methods:**

Based on the Actuarial Experience Study, the following assumptions were changed. Previously, these assumptions were as follows:

**Economic Assumptions**

**Net Investment Return:**

7.25%; net of investment expenses.

**Consumer Price Index:**

Increase of 3.00% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.

**Payroll Growth:**

Inflation of 3.00% per year plus “across the board” real salary increases of 0.50% per year.

**Increase in Section 7522.10 Compensation Limit:**

Increase of 3.00% per year from the valuation date.

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

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**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Individual Salary Increases:**

**Annual Rate of Compensation Increase (%)**

Inflation: 3.00% per year, plus “across the board” real salary increases of 0.50% per year, plus the following merit and promotional increases:

<b>Years of Service</b>	<b>General</b>	<b>Safety</b>
Less than 1	10.00%	14.00%
1	7.25	10.00
2	6.00	8.50
3	4.75	6.75
4	4.00	5.25
5	3.25	4.50
6	2.25	3.50
7	2.00	3.25
8	1.50	2.25
9	1.25	2.25
10	1.25	1.75
11	1.25	1.75
12	1.25	1.75
13	1.25	1.75
14	1.25	1.75
15	1.25	1.75
16	0.75	1.50
17	0.75	1.50
18	0.75	1.50
19	0.75	1.50
20 & over	0.75	1.50

In addition to the individual salary increase assumptions, we have applied an average 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**

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**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Demographic Assumptions**

**Post – Retirement Mortality Rates:**

- Healthy:* For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020.  
For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years.
- Disabled:* For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set forward six years for males and set forward three years for females.  
For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020.
- Beneficiaries:* Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who is receiving a service (non-disability) retirement.

The mortality tables shown above were determined to contain about a 10% margin to reflect future mortality improvement, based on a review of the mortality experience as of the measurement date.

- Member Contribution Rates:* For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 40% male and 60% female.  
For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years weighted 80% male and 20% female.
- Optional Forms of Benefits:* For General Service Retirees: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 40% male and 60% female.  
For Safety Service Retirees: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years weighted 80% male and 20% female.  
For General Disabled Retirees: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set forward six years for males and set forward three years for females weighted 40% male and 60% female.  
For Safety Disabled Retirees: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 80% male and 20% female.  
For General Beneficiaries: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 60% male and 40% female.  
For Safety Beneficiaries: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 20% male and 80% female.

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

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**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Termination Rates Before Retirement:**

Age	Rate (%)			
	Mortality			
	General		Safety	
	Male	Female	Male	Female
25	0.04	0.02	0.04	0.02
30	0.04	0.02	0.04	0.02
35	0.07	0.04	0.06	0.04
40	0.10	0.07	0.09	0.06
45	0.14	0.11	0.12	0.09
50	0.20	0.16	0.18	0.14
55	0.34	0.25	0.27	0.21
60	0.59	0.41	0.48	0.33
65	1.00	0.76	0.82	0.60

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**

**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Termination Rates Before Retirement (Continued):**

Age	Rate (%)			
	Disability			
	General All Other <sup>(1)</sup>	General OCTA <sup>(2)</sup>	Safety - Law & Fire <sup>(3)</sup>	Safety - Probation <sup>(3)</sup>
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	0.26	0.10
45	0.11	0.43	0.42	0.16
50	0.14	0.48	0.92	0.20
55	0.18	0.74	1.98	0.23
60	0.29	1.41	5.20	0.10

<sup>(1)</sup> 55% of General All Other disabilities are assumed to be service connected disabilities. The other 45% are assumed to be non-service connected.

<sup>(2)</sup> 65% of General - OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.

<sup>(3)</sup> 100% of Safety – Law Enforcement, Fire and Probation disabilities are assumed to be service connected disabilities.

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

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**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Termination Rates Before Retirement (Continued):**

Years of Service	Rate (%)			
	General All Other <sup>(1)</sup>	General OCTA <sup>(2)</sup>	Safety – Law & Fire <sup>(3)</sup>	Safety - Probation <sup>(4)</sup>
0	11.00	17.50	4.00	16.00
1	8.00	13.50	3.00	13.00
2	7.00	10.50	2.00	10.00
3	5.00	10.00	1.00	6.00
4	4.00	9.00	1.00	4.00
5	3.75	7.00	1.00	3.50
6	3.50	5.00	0.95	3.00
7	3.00	5.00	0.90	2.50
8	2.75	4.00	0.85	2.25
9	2.50	3.50	0.80	2.00
10	2.25	3.50	0.75	1.75
11	2.00	3.50	0.65	1.75
12	2.00	3.00	0.60	1.50
13	1.75	3.00	0.50	1.25
14	1.75	3.00	0.50	1.00
15	1.75	3.00	0.50	1.00
16	1.50	3.00	0.50	1.00
17	1.50	2.75	0.50	0.50
18	1.50	2.75	0.50	0.50
19	1.50	2.75	0.50	0.50
20 +	1.25	1.75	0.25	0.50

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

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**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

- (1) *40% of all terminated members with less than 5 years of service and 25% of all terminated members with 5 or more years of service will choose a refund of contributions.*
- (2) *45% of all terminated members with less than 5 years of service and 35% of all terminated members with 5 or more years of service will choose a refund of contributions.*
- (3) *20% of all terminated members with less than 5 years of service and 20% of all terminated members with 5 or more years of service will choose a refund of contributions.*
- (4) *40% of all terminated members with less than 5 years of service and 30% of all terminated members with 5 or more years of service will choose a refund of contributions.*

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

**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Retirement Rates:**

Age	Rate (%)							
	General - Enhanced	General - Non-Enhanced <sup>(1)</sup>	General - SJC (31676.12)	Safety - Law (31664.1) <sup>(2)</sup>	Safety - Law (31664.2) <sup>(2)</sup>	Safety - Fire (31664.1) <sup>(2)</sup>	Safety - Fire (31664.2) <sup>(2)</sup>	Safety - Probation <sup>(2)</sup>
49	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0
50	2.5	2.5	3.0	16.0	11.5	6.0	8.0	3.0
51	2.0	2.5	3.0	16.0	12.0	8.0	10.0	3.0
52	2.0	2.5	3.0	16.0	12.7	9.0	11.0	4.0
53	2.0	2.5	3.0	16.0	17.9	10.0	12.0	4.0
54	5.0	2.5	3.0	22.0	18.8	16.0	14.0	6.0
55	15.0	3.0	4.0	22.0	30.7	19.0	24.0	11.0
56	10.0	3.5	5.0	20.0	20.0	20.0	23.0	11.0
57	10.0	5.0	6.0	20.0	20.0	23.0	27.0	17.0
58	10.0	5.0	7.0	20.0	25.0	30.0	27.0	20.0
59	11.0	7.0	9.0	26.0	30.0	30.0	36.0	20.0
60	12.0	9.0	11.0	45.0	100.0	45.0	100.0	20.0
61	12.0	10.0	13.0	45.0	100.0	45.0	100.0	20.0
62	15.0	16.0	15.0	45.0	100.0	45.0	100.0	25.0
63	16.0	16.0	15.0	45.0	100.0	45.0	100.0	50.0
64	16.0	18.0	20.0	45.0	100.0	45.0	100.0	50.0
65	21.0	21.0	20.0	100.0	100.0	100.0	100.0	100.0
66	22.0	26.0	24.0	100.0	100.0	100.0	100.0	100.0
67	23.0	21.0	24.0	100.0	100.0	100.0	100.0	100.0
68	23.0	21.0	24.0	100.0	100.0	100.0	100.0	100.0
69	23.0	21.0	24.0	100.0	100.0	100.0	100.0	100.0
70	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
71	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
72	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
73	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
74	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>(1)</sup> These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).

<sup>(2)</sup> 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**

**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Retirement Rates (continued):**

Age	Rate (%)			
	CalPEPRA 2.5% @ 67 General Formula	CalPEPRA Safety - Probation Formula <sup>(1)</sup>	CalPEPRA Safety - Law Formula <sup>(1)</sup>	CalPEPRA Safety - Fire Formula <sup>(1)</sup>
50	0.0	2.5	11.0	6.5
51	0.0	2.5	11.5	8.0
52	4.0	3.0	12.0	9.0
53	1.5	3.0	16.0	10.0
54	1.5	5.5	17.0	12.0
55	2.5	10.0	28.0	21.0
56	3.5	10.0	18.0	20.0
57	5.5	15.0	17.5	22.0
58	7.5	20.0	22.0	25.0
59	7.5	20.0	26.0	31.5
60	7.5	100.0	100.0	100.0
61	7.5	100.0	100.0	100.0
62	14.0	100.0	100.0	100.0
63	14.0	100.0	100.0	100.0
64	14.0	100.0	100.0	100.0
65	18.0	100.0	100.0	100.0
66	22.0	100.0	100.0	100.0
67	23.0	100.0	100.0	100.0
68	23.0	100.0	100.0	100.0
69	23.0	100.0	100.0	100.0
70	30.0	100.0	100.0	100.0
71	30.0	100.0	100.0	100.0
72	30.0	100.0	100.0	100.0
73	30.0	100.0	100.0	100.0
74	30.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0

<sup>(1)</sup> 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**

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**Changes in Actuarial Assumptions and Methods (previous assumptions continued):**

**Retirement Age and Benefit for Deferred Vested Members:**

For current deferred vested members, we make the following retirement age assumptions:

- General Age: 58
- Safety Age: 53

We assume that 20% of future General and 30% of future Safety deferred vested members will continue to work for a reciprocal employer. For reciprocals, we assume 4.25% compensation increases for General and 5.00% for Safety per annum.

**Percent Married:**

75% of male members and 50% of female members are assumed to be married at retirement or time of pre-retirement death.

**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:

	<b><u>Final One Year Salary</u></b>	<b><u>Final Three Year Salary</u></b>
General Members	3.50%	2.80%
Safety - Probation	3.80%	2.80%
Safety - Law	5.20%	4.70%
Safety - Fire	2.00%	2.00%

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

*CalPEPRA Formulas*

None

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

**APPENDIX A**

**Projection of Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of December 31, 2017 (\$ 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)
2017	\$12,809	\$834	\$764	\$17	\$1,940	\$14,802
2018	14,802	912	844	20	1,038	15,888
2019	15,888	919	901	21	1,112	16,997
2020	16,997	918	960	23	1,188	18,121
2021	18,121	904	1,021	24	1,264	19,243
2022	19,243	889	1,083	26	1,339	20,363
2023	20,363	890	1,151	27	1,415	21,490
2024	21,490	894	1,221	29	1,492	22,627
2025	22,627	899	1,291	30	1,569	23,774
2026	23,774	904	1,362	32	1,647	24,932
2042	35,318	181	2,571	47	2,388	35,269
2043	35,269	171	2,625	47	2,383	35,151
2044	35,151	161	2,671	47	2,373	34,967
2045	34,967	152	2,713	46	2,358	34,717
2046	34,717	144	2,750	46	2,339	34,405
2091	23,017	46	221	31	1,604	24,417
2092	24,417	46	181	32	1,703	25,953
2093	25,953	47	147	34	1,812	27,630
2094	27,630	48	118	37	1,930	29,454
2095	29,454	49	93	39	2,059	31,430
2132	356,925	474	0 **	474	24,985	381,910
2133	381,910					
2133 Discounted Value:	160 ***					

\* Of all the projected total contributions, only the first year's (i.e., 2017) contribution has been reduced by discount for prepaid contributions, transfers from County Investment Account and O.C. Sanitation District UAAL Deferred Account, if any.

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

\*\*\* \$381,910 million when discounted with interest at the rate of 7.00% per annum has a value of \$160 million as of December 31, 2017. Of this amount, about \$134 million is the balance available in the County Investment Account and \$15 million is the O.C. Sanitation District UAAL Deferred Account as of December 31, 2017.

Note: We have not utilized the balance in the County Investment Account and O.C. Sanitation District UAAL Deferred Account to change the projected total contributions even though those amounts have been used to reduce the NPL for the County and O.C. Sanitation District as of December 31, 2017.

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

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#### APPENDIX A (continued)

#### Projection of Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of December 31, 2017 (\$ in millions)

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Notes:

- (1) Amounts may not total exactly due to rounding.
- (2) Amounts shown in the year beginning January 1, 2017 row are actual amounts, based on the financial statements provided by OCERS.
- (3) Years 2027-2041, 2047-2090, and 2096-2131 have been omitted from this table.
- (4) Column (a): Except for the "discounted value" shown for 2133, 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, 2016), 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, 2016. The projected benefit payments reflect the cost of living increase assumptions used in the December 31, 2017 valuation report. The 2017 benefit payments have been increased by the balance of the Medicare Insurance Reserve as of December 31, 2017.
- (7) Column (d): Projected administrative expenses are calculated as approximately 0.13% of the projected beginning Plan's Fiduciary Net Position amount. The 0.13% portion was based on the actual calendar year 2017 administrative expenses (unaudited) as a percentage of the actual beginning Plan's Fiduciary Net Position as of January 1, 2017. Administrative expenses are assumed to occur halfway through the year, on average.
- (8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.00% per annum.
- (9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the total pension liability as of December 31, 2017 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, 2017**

	Orange County	O.C. Cemetery District	O.C. Law Library	O.C. Vector Control District	O.C. Retirement System
<b>Deferred Outflows of Resources</b>					
Differences Between Expected and Actual Experience	\$12,560,694	\$19,195	\$0	\$286,098	\$0
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	289,836,042	262,218	1,309,037	882,069	1,565,430
Changes of Assumptions	578,664,495	406,838	357,488	724,719	2,798,016
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>19,581,719</u>	<u>0</u>	<u>111,626</u>	<u>0</u>	<u>1,233,255</u>
<b>Total Deferred Outflows of Resources</b>	\$900,642,950	\$688,251	\$1,778,151	\$1,892,886	\$5,596,701
<b>Deferred Inflows of Resources</b>					
Differences Between Expected and Actual Experience	\$358,243,068	\$397,300	\$789,153	\$1,258,406	\$2,024,402
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	672,815,006	609,417	588,902	1,732,987	3,620,981
Changes of Assumptions	80,224,845	71,399	369,550	0	632,877
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>149,391</u>	<u>0</u>	<u>1,296,565</u>	<u>0</u>	<u>443,441</u>
<b>Total Deferred Inflows of Resources</b>	\$1,111,432,310	\$1,078,116	\$3,044,170	\$2,991,393	\$6,721,701
<b>Net Pension Liability as of December 31, 2016</b>	\$4,043,855,643	\$222,409	\$1,770,282	\$1,669,793	\$21,886,393
<b>Net Pension Liability as of December 31, 2017</b>	\$3,983,695,231	\$(173,677)	\$(36,317)	\$1,166,920	\$21,427,080
<b>Pension Expense Excluding That Attributable to Employer-Paid Member Contributions</b>					
Proportionate Share of Allocable Plan Pension Expense	\$408,348,478	\$82,093	\$452,690	\$(3,673)	\$1,703,046
Net Amortization of Deferred Amounts from Changes in					
Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>5,016,038</u>	<u>0</u>	<u>(372,508)</u>	<u>0</u>	<u>335,339</u>
<b>Total Employer Pension Expense Excluding That</b>					
<b>Attributable to Employer-Paid Member Contributions</b>	\$413,364,516	\$82,093	\$80,182	\$(3,673)	\$2,038,385

**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, 2017**

	O.C. Fire Authority	Cypress Parks and Recreation	Department of Education	Transportation Corridor Agency	City of San Juan Capistrano
<b>Deferred Outflows of Resources</b>					
Differences Between Expected and Actual Experience	\$942,161	\$3,559,994	\$372,992	\$156,559	\$0
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	39,155,278	0	304,850	832,113	1,909,665
Changes of Assumptions	59,656,589	117,072	295,919	1,465,362	3,413,294
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>1,980,885</u>
<b>Total Deferred Outflows of Resources</b>	\$99,754,028	\$3,677,066	\$973,761	\$2,454,034	\$7,303,844
<b>Deferred Inflows of Resources</b>					
Differences Between Expected and Actual Experience	\$60,331,638	\$0	\$1,201,641	\$1,592,621	\$2,469,564
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	93,798,878	3,201,831	685,764	2,148,715	4,417,227
Changes of Assumptions	1,586,390	0	122,153	340,496	772,045
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>2,167,638</u>
<b>Total Deferred Inflows of Resources</b>	\$155,716,906	\$3,201,831	\$2,009,558	\$4,081,832	\$9,826,474
<b>Net Pension Liability as of December 31, 2016</b>	\$469,430,660	\$0	\$4,415,517	\$12,423,364	\$25,089,009
<b>Net Pension Liability as of December 31, 2017</b>	\$370,674,668	\$718,340	\$2,530,324	\$10,242,769	\$26,138,852
<b>Pension Expense Excluding That Attributable to Employer-Paid Member Contributions</b>					
Proportionate Share of Allocable Plan Pension Expense	\$63,001,786	\$243,105	\$97,769	\$1,349,900	\$2,077,542
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>(76,591)</u>
<b>Total Employer Pension Expense Excluding That</b>					
<b>Attributable to Employer-Paid Member Contributions</b>	\$63,001,786	\$243,105	\$97,769	\$1,349,900	\$2,000,951

**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, 2017**

	O.C. Sanitation District	O.C. Transportation Authority	U.C.I.	O.C. Children and Families Comm.	Local Agency Formation Comm.
<b>Deferred Outflows of Resources</b>					
Differences Between Expected and Actual Experience	\$0	\$638,231	\$748,341	\$0	\$0
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	16,000,909	19,886,895	2,560,794	70,297	92,648
Changes of Assumptions	20,491,177	36,486,297	2,372,163	125,648	165,597
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>1,296,565</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>278,946</u>
<b>Total Deferred Outflows of Resources</b>	\$37,788,651	\$57,011,423	\$5,681,298	\$195,945	\$537,191
<b>Deferred Inflows of Resources</b>					
Differences Between Expected and Actual Experience	\$15,393,406	\$28,750,678	\$4,572,031	\$90,908	\$119,812
Difference Between Projected and Actual Investment					
Earnings on Pension Plan Investments	44,251,106	45,783,529	6,335,570	162,604	214,303
Changes of Assumptions	4,517,168	7,211,596	964,138	28,420	37,456
Changes in Proportion and Differences Between Employer					
Contributions and Proportionate Share of Contributions	<u>111,626</u>	<u>0</u>	<u>0</u>	<u>1,070,900</u>	<u>192,297</u>
<b>Total Deferred Inflows of Resources</b>	\$64,273,306	\$81,745,803	\$11,871,739	\$1,352,832	\$563,868
<b>Net Pension Liability as of December 31, 2016</b>	\$(10,384,510)	\$230,260,478	\$36,113,699	\$3,158,290	\$1,340,888
<b>Net Pension Liability as of December 31, 2017</b>	\$(39,571,102)	\$212,117,162	\$27,644,960	\$962,204	\$1,268,133
<b>Pension Expense Excluding That Attributable to Employer-Paid Member Contributions</b>					
Proportionate Share of Allocable Plan Pension Expense	\$948,974	\$23,783,337	\$530,932	\$76,476	\$100,792
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>(289,199)</u>	<u>28,915</u>
<b>Total Employer Pension Expense Excluding That</b>					
<b>Attributable to Employer-Paid Member Contributions</b>	\$1,321,482	\$23,783,337	\$530,932	\$(212,723)	\$129,707

**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, 2017**

	<b>Rancho Santa Margarita</b>	<b>O.C. Superior Court</b>	<b>O.C. IHSS Public Authority</b>	<b>Total for all Employers</b>
<b>Deferred Outflows of Resources</b>				
Differences Between Expected and Actual Experience	\$965	\$0	\$0	\$19,285,230
Difference Between Projected and Actual Investment				
Earnings on Pension Plan Investments	7,228	24,298,513	123,697	399,097,683
Changes of Assumptions	798	43,430,635	277,121	751,249,228
Changes in Proportion and Differences Between Employer				
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>0</u>	<u>149,391</u>	<u>24,632,387</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$8,991</b>	<b>\$67,729,148</b>	<b>\$550,209</b>	<b>\$1,194,264,528</b>
<b>Deferred Inflows of Resources</b>				
Differences Between Expected and Actual Experience	\$9,768	\$31,422,648	\$300,636	\$508,967,680
Difference Between Projected and Actual Investment				
Earnings on Pension Plan Investments	3,993	56,204,643	220,897	936,796,353
Changes of Assumptions	377	9,823,473	43,138	106,745,521
Changes in Proportion and Differences Between Employer				
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>19,200,529</u>	<u>0</u>	<u>24,632,387</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$14,138</b>	<b>\$116,651,293</b>	<b>\$564,671</b>	<b>\$1,577,141,941</b>
<b>Net Pension Liability as of December 31, 2016</b>	<b>\$9,332</b>	<b>\$349,173,850</b>	<b>\$781,506</b>	<b>\$5,191,216,603</b>
<b>Net Pension Liability as of December 31, 2017</b>	<b>\$(2,320)</b>	<b>\$332,589,831</b>	<b>\$706,343</b>	<b>\$4,952,099,401</b>
<b>Pension Expense Excluding That Attributable to Employer-Paid Member Contributions</b>				
Proportionate Share of Allocable Plan Pension Expense	\$782	\$26,434,585	\$146,859	\$529,375,473
Net Amortization of Deferred Amounts from Changes in				
Proportion and Differences Between Employer				
Contributions and Proportionate Share of Contributions	<u>0</u>	<u>(5,054,972)</u>	<u>40,470</u>	<u>0</u>
<b>Total Employer Pension Expense Excluding That</b>				
<b>Attributable to Employer-Paid Member Contributions</b>	<b>\$782</b>	<b>\$21,379,613</b>	<b>\$187,329</b>	<b>\$529,375,473</b>

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

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**APPENDIX B (continued)**

**Schedule of Pension Amounts by Employer as of December 31, 2017**

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**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., 2017) 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, 2016 (the beginning of the measurement period ending December 31, 2017) and is 6.01 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

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#### APPENDIX C

#### GLOSSARY

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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**

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**APPENDIX C (continued)**

**GLOSSARY**

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**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**

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**APPENDIX C (continued)**

**GLOSSARY**

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**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**

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**APPENDIX C (continued)**

**GLOSSARY**

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**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**

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**APPENDIX C (continued)**

**GLOSSARY**

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**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**

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**APPENDIX C (continued)**

**GLOSSARY**

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**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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