Segal Consulting

Orange County Employees Retirement System

Governmental Accounting Standards Board (GASB) Statement 67
Actuarial Valuation as of December 31, 2015

Segal Consulting

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June 2, 2016

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 67 Actuarial Valuation as of December 31, 2015. It contains various information that will need to be disclosed in order to comply with GASB Statement 67.

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

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

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

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

Sincerely,

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

By:

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

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SECTION 1

VALUATION SUMMARY

SECTION 2

GASB STATEMENT 67 INFORMATION

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board (GASB) Statement 67 as of December 31, 2015. This valuation is based on:

- The benefit provisions of the Retirement System, 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, 2014, provided by OCERS;
- The assets of the Plan as of December 31, 2015, provided by OCERS;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2015 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2015 valuation.

Significant Issues in Valuation Year

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

- 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 can 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.
- 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.
- The NPL's measured as of December 31, 2015 and 2014 have been determined by rolling forward the TPL as of December 31, 2014 and 2013, respectively.

- The NPL increased from $5,082.5 million as of December 31, 2014 to $5,716.6 million as of December 31, 2015 primarily as a result of a -0.45% return on the market value of assets during 2015 that was less than the assumed return of 7.25%. This loss was offset to some extent by the gains from lower than expected active salary increases and lower than expected retiree COLA increases during 2014 (because liabilities are rolled forward from December 31, 2014 to December 31, 2015, these changes are not reflected until this valuation as of December 31, 2015). Changes in these values during the last two fiscal years ending December 31, 2014 and December 31, 2015 can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL as of December 31, 2015 and 2014 were 7.25% and 7.25%, respectively, following the same assumptions used by the System in the pension funding valuations as of the same dates. The detailed calculations of the discount rate of 7.25% used in the calculation of the TPL and NPL as of December 31, 2015 can be found in Exhibit 5 of Section 2. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 4 in Section 2.
- The Plan's Fiduciary Net Position of $11,536,106,000 as of December 31, 2014 is equal to the final market value of assets in the Pension Trust Fund as of December 31, 2014. This differs from the $11,428,223,000 market value of assets used in our December 31, 2014 funding valuation because (1) our funding valuation was based on the preliminary unaudited financial statements and (2) the market value of assets in the funding valuation excludes $109,103,000 in the County Investment Account.

  The Plan's Fiduciary Net Position of $11,657,318,000 as of December 31, 2015 is equal to the final market value of assets in the Pension Trust Fund as of December 31, 2015. This differs from the $11,548,529,000 market value of assets used in our December 31, 2015 funding valuation because the funding valuation excludes $108,789,000 in the County Investment Account.

Summary of Key Valuation Results

	2015	2014
Disclosure elements for plan year ending December 31:		
Service cost(1)	$439,453,529	$438,599,931
Total Pension Liability	17,373,922,741	16,618,586,673
Plan's Fiduciary Net Position	11,657,318,000	11,536,106,000
Net Pension Liability	5,716,604,741	5,082,480,673
Schedule of contributions for plan year ending December 31:		
Actuarially determined contributions(2)	$502,886,000	$476,320,000
Actual contributions(2)	571,298,000	625,520,000
Contribution deficiency (excess)	(68,412,000)(3)	(149,200,000)(4)
Demographic data for plan year ending December 31:		
Number of retired members and beneficiaries	15,810	15,169
Number of vested terminated members	5,091	4,789
Number of active members	21,525	21,459
Key assumptions as of December 31:		
Investment rate of return	7.25%	7.25%
Inflation rate	3.00%	3.00%
Projected salary increases(5)	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%	General: 4.25% to 13.50% and Safety: 5.00% to 17.50%

(1) *Please note that service cost is always based on the previous year's assumptions, meaning the December 31, 2015 value is based on those assumptions shown as of December 31, 2014 whereas the December 31, 2014 value is based on the December 31, 2013 assumptions shown below:*

Key assumptions as of December 31, 2013:

Investment rate of return	7.25%
Inflation rate	3.25%
Projected salary increases*	General: 4.75% to 13.75%, and Safety: 4.75% to 17.75%

* Includes inflation at 3.25% plus real across the board salary increases of 0.50% plus merit and promotional increases.

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

(3) *Includes $18,412,000 in additional contributions made by O.C. Fire Authority and $50,000,000 in additional contributions made by O.C. Sanitation District towards the reduction of their UAAL.*

(4) *Includes $1,663,000 in additional contributions made by O.C. Cemetery District, $22,537,000 in additional contributions made by OCFA and $125,000,000 in additional contributions made by O.C. Sanitation District towards the reduction of their UAAL.*

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

Important Information about Actuarial Valuations

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 OCERS in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If OCERS is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal 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.

EXHIBIT 1

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

Plan Description

Plan administration. The Orange County Employees Retirement System (OCERS) was established by the County of Orange in 1945. OCERS is administered by the Board of Retirement and governed by the County Employees' Retirement Law of 1937 (California Government Code Section 31450 et. seq.). OCERS is a cost-sharing multiple employer public employee retirement system whose main function is to provide service retirement, disability, death and survivor benefits to the Safety and General members employed by the County of Orange. OCERS also provides retirement benefits to the employee members of the Orange County Courts, the Orange County Retirement System, one city 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, 2015, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	15,810
Vested terminated members entitled to, but not yet receiving benefits	5,091
Active members	21,525
Total	42,426

Note: Includes immaterial differences from amounts originally reported by OCERS. Please refer to OCERS' Comprehensive Annual Financial Statements for the year ended December 31, 2015 for a detailed reconciliation.

Benefits provided. OCERS provides service retirement, disability, death and survivor benefits to eligible employees. All regular full-time employees of the County of Orange or contracting agencies who work a minimum of 20 hours per week become members of OCERS effective on the first day of employment in an eligible position. There are separate retirement plans for General and Safety member employees. Safety membership is extended to those involved in active law enforcement, fire suppression, and certain probation officers. Any new Safety Member who becomes a member on or after January 1, 2013 is designated PEPRA Safety and is subject to the provisions of California Public Employees' Pension Reform Act of 2013

(PEPRA), California Government Code 7522 et seq. All other employees are classified as General members. New General Members employed after January 1, 2013 are designated as PEPRA General subject to the provisions of California Government Code 7522 et seq.

General members prior to January 1, 2013, including all members of Plan T hired on or after January 1, 2013, are eligible to retire once they attain the age of 50 and have acquired 10 or more years of retirement service credit. A member with 30 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, are eligible to retire once they have attained the age of 52, and have acquired five years of retirement service credit.

Safety members prior to January 1, 2013, are eligible to retire once they attain the age of 50 and have acquired 10 or more years of retirement service credit. A member with 20 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, 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, 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.

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-Riverside-Orange County 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 2015 or the second half of fiscal year 2014-2015 (based on the December 31, 2012 valuation) was 39.32% of compensation. The average employer contribution rate for the last six months of calendar year 2015 or the first half of fiscal year 2015-2016 (based on the December 31, 2013 valuation) was 39.05% 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 2015 or the second half of fiscal year 2014-2015 (based on the December 31, 2012 valuation) was 12.87% of compensation. The average member contribution rate for the last six months of calendar year 2015 or the first half of fiscal year 2015-2016 (based on the December 31, 2013 valuation) was 12.77% of compensation.

(It should be noted that the contribution rates provided above have not been adjusted to reflect any pick-ups or reverse pick-ups.)

EXHIBIT 2

Net Pension Liability

The components of the Net Pension Liability as follows:

	December 31, 2015	December 31, 2014
Total Pension Liability	$17,373,922,741	$16,618,586,673
Plan's Fiduciary Net Position	-11,657,318,000	-11,536,106,000
Net Pension Liability	$5,716,604,741	$5,082,480,673
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	67.10%	69.42%

The Net Pension Liability (NPL) was measured as of December 31, 2015 and 2014. 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, 2014 and 2013, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of December 31, 2015 and 2014 are the same as those used in the OCERS actuarial valuation as of December 31, 2015 and 2014, respectively.

Actuarial assumptions. The TPL's as of December 31, 2015 and 2014 were determined by actuarial valuations as of December 31, 2014 and 2013, respectively. The actuarial assumptions used were based on the results of an experience study for the period from January 1, 2011 through December 31, 2013. They are the same assumptions used in the December 31, 2015 funding valuation for OCERS. The assumptions are outlined on page 10 of this report. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

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

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 deducting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Large Cap U.S. Equity	14.90%	5.92%
Small/Mid Cap U.S. Equity	2.73%	6.49%
Developed International Equity	10.88%	6.90%
Emerging International Equity	6.49%	8.34%
Core Bonds	10.00%	0.73%
Global Bonds	2.00%	0.30%
Emerging Market Debt	3.00%	4.00%
Real Estate	10.00%	4.96%
Diversified Credit (US Credit)	8.00%	4.97%
Diversified Credit (Non-US Credit)	2.00%	6.76%
Hedge Funds	7.00%	4.13%
GTAA	7.00%	4.22%
Real Return	10.00%	5.86%
Private Equity	6.00%	9.60%
Total	100.00%	

Discount rate: The discount rates used to measure the TPL were 7.25% and 7.25% as of December 31, 2015 and 2014, 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, 2015 and 2014.

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL as of December 31, 2015, calculated using the discount rate of 7.25%, as well as what the NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
OCERS's Net Pension Liability as of December 31, 2015	$8,135,498,791	$5,716,604,741	$3,726,283,151

EXHIBIT 3

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

	2015	2014
Total Pension Liability		
Service cost	$439,453,529	$438,599,931
Interest	1,197,308,212	1,153,351,962
Change of benefit terms	0	0
Differences between expected and actual experience	-205,462,673	-327,402,088
Changes of assumptions	0	-127,729,220
Benefit payments, including refunds of employee contributions	-675,963,000	-630,678,000
Net change in Total Pension Liability	$755,336,068	$506,142,585
Total Pension Liability – beginning	16,618,586,673	16,112,444,088
Total Pension Liability – ending (a)	$17,373,922,741	$16,618,586,673
Plan's Fiduciary Net Position		
Contributions – employer[1]	$571,298,000	$625,520,000
Contributions – employee	249,271,000	232,656,000
Net investment income/(loss)	-10,873,000	499,195,000
Benefit payments, including refunds of employee contributions	-675,963,000	-630,678,000
Administrative expense	-12,521,000	-11,905,000
Other	0	0
Net change in Plan's Fiduciary Net Position	$121,212,000	$714,788,000
Plan's Fiduciary Net Position – beginning	11,536,106,000	10,821,318,000
Plan's Fiduciary Net Position – ending (b)	$11,657,318,000	$11,536,106,000
Net Pension Liability – ending (a) – (b)	$5,716,604,741	$5,082,480,673
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	67.10%	69.42%
Covered payroll[2][3]	$1,521,036,000	$1,513,206,000
Plan's Net Pension Liability as percentage of covered payroll	375.84%	335.88%

(1) *Reduced by discount for prepaid contributions and transfers from County Investment Account.*

(2) *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.*

(3) *As directed by OCERS, we have used the updated covered payroll provided by OCERS.*

EXHIBIT 4

Schedule of OCERS' Contributions – Last Ten Plan Years

Year Ended December 31	Actuarially Determined Contributions[(1)(2)]	Contributions in Relation to the Actuarially Determined Contributions[(1)(2)]	Contribution Deficiency (Excess)	Covered Payroll[(3)(4)]	Contributions as a Percentage of Covered Payroll[(1)(2)]
2006	$277,368,000	$277,368,000	$0	$1,301,212,000	21.32%
2007	326,736,000	326,736,000	0	1,410,559,000	23.16%
2008	359,673,000	360,365,000[(5)]	(692,000)	1,526,113,000	23.61%
2009	337,496,000	338,387,000[(6)]	(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[(7)]	(1,075,000)	1,494,745,000	28.57%
2014	476,320,000	625,520,000[(8)]	(149,200,000)	1,513,206,000	41.34%
2015	502,886,000	571,298,000[(9)]	(68,412,000)	1,521,036,000	37.56%

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

Plan Year Ended December 31	*Transfers from County Investment Account*	*Plan Year Ended December 31*	*Transfers from County Investment Account*
2008	*$0*	*2012*	*$5,500,000*
2009	*34,900,000*	*2013*	*5,000,000*
2010	*11,000,000*	*2014*	*5,000,000*
2011	*11,000,000*	*2015*	*0*

(2) *Reduced by discount for prepaid contributions.*

(3) *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.*

(4) *As directed by OCERS, we have used the updated covered payroll provided by OCERS.*

(5) *Includes $692,000 in additional contributions made by O.C. Fire Authority towards the reduction of their UAAL.*

(6) *Includes $891,000 in additional contributions made by O.C. Fire Authority towards the reduction of their UAAL.*

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

(8) *Includes $1,663,000 in additional contributions made by O.C. Cemetery District, $22,537,000 in additional contributions made by O.C. Fire Authority and $125,000,000 in additional contributions made by O.C. Sanitation District towards the reduction of their UAAL.*

(9) *Includes $18,412,000 in additional contributions made by O.C. Fire Authority and $50,000,000 in additional contributions made by O.C. Sanitation District towards the reduction of their UAAL.*

Notes to Exhibit 4

Methods and assumptions used to establish "actuarially determined contribution" rates:	
Valuation date	Actuarially determined contribution rates for the first six months of calendar year 2015 or the second half of fiscal year 2014-2015 are calculated based on the December 31, 2012 valuation. Actuarially determined contribution rates for the last six months of calendar year 2015 or the first half of fiscal year 2015-2016 are calculated based on the December 31, 2013 valuation.
Actuarial cost method	Entry Age Actuarial Cost Method
Amortization method	Level percent of payroll for total unfunded actuarial accrued liability
Remaining amortization period	
December 31, 2012 valuation	22 years closed (declining) amortization of outstanding balance of December 31, 2004 UAAL. The outstanding balance of the UAAL established in the December 31, 2009 valuation as a result of including additional premium pay items as pensionable salary and the new UAAL established in the December 31, 2010 valuation as a result of reallocating contributions and benefit payments among Rate Groups are also amortized over a 22-year period in the December 31, 2012 valuation. Any increases or decreases in UAAL that arise in future years due to actuarial gains or losses will be amortized over separate 15-year periods. Any increases or decreases in UAAL due to changes in actuarial assumptions are amortized over separate 30-year periods.
December 31, 2013 valuation	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. For valuation purposes, the Valuation Value of Assets is reduced by the value of the non-valuation reserves.

Notes to Exhibit 4 – continued

Actuarial assumptions:

December 31, 2012 valuation	
Investment rate of return	7.25%, net of pension plan investment expense, including inflation
Inflation rate	3.25%
Real across-the-board salary increase	0.50%
Projected salary increases	General: 4.75% to 13.75% and Safety: 4.75% to 17.75%, vary by service, including inflation
Cost of living adjustments	3.00% of retirement income
Other assumptions	Same as those used in the December 31, 2012 funding actuarial valuation
December 31, 2013 valuation	
Investment rate of return	7.25%, net of pension plan investment expense, including inflation
Inflation rate	3.25%
Real across-the-board salary increase	0.50%
Projected salary increases	General: 4.75% to 13.75% and Safety: 4.75% to 17.75%, vary by service, including inflation
Cost of living adjustments	3.00% of retirement income
Other assumptions	Same as those used in the December 31, 2013 funding actuarial valuation

EXHIBIT 5

Projection of Pension Plan’s Fiduciary Net Position for Use in Calculation of Discount Rate as of December 31, 2015

($ in millions)

Year Beginning January 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions * (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2015	$11,536	$821	$676	$13	-$11	$11,657
2016	11,657	806	757	13	846	12,541
2017	12,541	820	811	14	909	13,446
2018	13,446	839	869	15	973	14,375
2019	14,375	866	930	16	1,039	15,335
2020	15,335	889	992	17	1,108	16,323
2021	16,323	898	1,056	18	1,177	17,324
2022	17,324	906	1,123	19	1,248	18,335
2023	18,335	909	1,195	20	1,318	19,347
2024	19,347	917	1,266	21	1,390	20,367
2040	30,962	141	2,439	34	2,162	30,792
2041	30,792	130	2,490	33	2,147	30,546
2042	30,546	121	2,531	33	2,128	30,230
2043	30,230	114	2,566	33	2,103	29,848
2044	29,848	106	2,595	32	2,074	29,402
2089	18,492	27	65	20	1,339	19,772
2090	19,772	28	51	21	1,432	21,159
2091	21,159	28	39	23	1,533	22,659
2092	22,659	29	30	25	1,642	24,275
2093	24,275	30	23	26	1,759	26,016
2130	322,777	350	0 **	350	23,401	346,178
2131	346,178					
2131 Discounted Value:	111 ***					

* Of all the projected total contributions, only the first year's (i.e., 2015) contribution has been reduced by discount for prepaid contributions and transfers from County Investment Account, if any.

** Less than $1 million, when rounded.

*** $346,178 million when discounted with interest at the rate of 7.25% per annum has a value of $111 million as of December 31, 2015. Of this amount, about $109 million is due to the balance available in the County Investment Account as of December 31, 2015.

EXHIBIT 5

Projection of Pension Plan’s Fiduciary Net Position for Use in Calculation of Discount Rate as of December 31, 2015

($ in millions) – continued

Notes:

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

(2) Amounts shown in the year beginning January 1, 2015 row are actual amounts, based on the financial statements provided by OCERS.

(3) Years 2025-2039, 2045-2088, and 2094-2129 have been omitted from this table.

(4) Column (a): Except for the "discounted value" shown for 2131, all of the projected beginning Plan 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, 2014), 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, 2014. The projected benefit payments reflect the cost of living increase assumptions used in the December 31, 2014 valuation report. The 2015 benefit payments have been increased by the balance of the Medicare Insurance Reserve as of December 31, 2015.

(7) Column (d): Projected administrative expenses are calculated as approximately 0.11% of the projected beginning Plan Fiduciary Net Position amount. The 0.11% portion was based on the actual calendar year 2015 administrative expenses (unaudited) as a percentage of the actual beginning Plan Fiduciary Net Position as of January 1, 2015. Administrative expenses are assumed to occur halfway through the year, on average.

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

(9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.25% per annum was applied to all periods of projected benefit payments to determine the total pension liability as of December 31, 2015 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.