

Alameda County Employees' Retirement Association

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

**Actuarial Valuation Based on December 31, 2015
Measurement Date for Employer Reporting
as of June 30, 2016**



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 ACERA 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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100 Montgomery Street Suite 500 San Francisco, CA 94104-4308
T 415.263.8200 www.segalco.com

June 6, 2016

*Board of Retirement
Alameda County Employees' Retirement Association
475 14th Street, Suite 1000
Oakland, CA 94612*

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statement No. 68 Actuarial Valuation based on a December 31, 2015 measurement date for employer reporting as of June 30, 2016. It contains various information that will need to be disclosed in order for ACERA 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 ACERA pension plan. The census and financial information on which our calculations were based was provided by ACERA. 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.

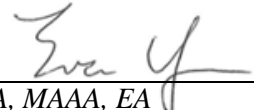
The actuarial calculations were completed under the supervision of Eva Yum, FSA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, 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 Retirement Association.

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


Eva Yum, FSA, MAAA, EA
Associate Actuary

JB/hy

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SECTION 1: Valuation Summary for the Alameda County Employees' Retirement Association

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, 2016. The results used in preparing this GASB 68 report are comparable to those used in preparing the Governmental Accounting Standards Board Statement 67 report for the plan based on a reporting date and a measurement date as of December 31, 2015. This valuation is based on:

- The benefit provisions of the Retirement Association, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of November 30, 2014, provided by the Retirement Association;
- The assets of the Plan as of December 31, 2015, provided by the Retirement Association;
- 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 redefine 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) and the same type of discount rate (expected return on assets) as ACERA uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as ACERA's 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. It should be noted that in determining the Plan's Fiduciary Net Position, we have included either 50% of any deferred market gains or a

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proportion of any deferred investment losses after netting out the Contingency Reserve¹ that is commensurate with the size of the valuation reserves² that would be available to the Pension Plan.

- As we disclosed in our December 31, 2015 funding valuation report, the 7.60% investment return assumption that the Board previously approved for determining the liabilities for funding purposes and used for establishing the employer and employee contribution rates has continued to be developed without considering the impact of any future 50/50 excess earnings allocation. This is based on our understanding that Article 5.5 of the Statute, which authorizes the allocation of 50% of excess earnings to the SRBR, does not allow for the use of a different investment return for funding than is used for interest crediting. This would appear in effect to preclude the prefunding of the SRBR through the use of an assumption lower than the market earnings assumption of 7.60%.

As required by the Actuarial Standard of Practice (ASOP) No. 4 (“Measuring Pension Obligations and Determining Pension Plan Costs or Contributions”), we performed a stochastic model in 2013 to estimate the impact of the 50% allocation of future excess earnings to the SRBR. The results of our model indicated that the 50/50 allocation of future excess earnings would have about the same impact as an “outflow” (i.e., assets not available to fund the benefits included in the determination of the TPL) that would average approximately 0.75% of assets over time. This approximated outflow was incorporated into our GASB crossover test³ (Appendix A), along with the additional future employer contributions that would result from those future allocations of excess earnings to the SRBR under ACERA’s funding policy.

- For this report, the reporting dates for the employer are June 30, 2016 and 2015. The NPLs measured as of December 31, 2015 and 2014 were determined by rolling forward the TPLs for the funded benefits as of December 31, 2014 and December 31, 2013, respectively. In addition, we adjusted both the TPL and the Plan Fiduciary Net Position to include an additional \$33.7 million and \$37.6 million as of December 31, 2015 and December 31, 2014, respectively. The \$33.7 million as of December 31, 2015 has been calculated by (a) taking the \$35.2 million set aside by the Retirement Board in the SRBR reserve to pay non-vested Supplemental COLA and retired member death benefits⁴ as of December 31, 2015 and (b) offsetting that by \$1.5 million, to reflect the

¹ The recognition of the net deferred investment losses would result in an interest crediting rate that is less than 7.60% per year.

² For example, 50% of the deferred market gains as of December 31, 2014 is equal to \$121.4 million, whereas the proportionate share of the deferred market losses after netting out the Contingency Reserve as of December 31, 2015 is equal to \$263.8 million.

³ The purpose of the GASB crossover test is to determine if the full expected return (or 7.60% in this case) can be used as the discount rate to determine the TPL and the NPL. That is, if there is no crossover point where the projected benefit payments would exceed the plan’s fiduciary net position, then the full expected return assumption can be used. As detailed later in this report, ACERA does pass the crossover test, which means that the full 7.60% investment rate of return assumption can be used as the discount rate to determine the TPL and the resulting NPL.

⁴ We have excluded the liability and the assets associated with the OPEB component of the SRBR reserve account because it is our understanding that those amounts are reportable under GASB 43/45.

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proportion of the net deferred investment losses that is commensurate with the size of those reserves, which causes the interest crediting rate to the SRBR reserve to drop below 7.60% per year. The \$37.6 million as of December 31, 2014 has been calculated by (a) taking the \$32.6 million set aside by the Retirement Board in the SRBR reserve to pay non-vested Supplemental COLA and retired member death benefits as of December 31, 2014 and (b) adding \$5.0 million to reflect the proportion of the net deferred investment gains that is commensurate with the size of those reserves. Consistent with the provisions of GASB 68, the assets and liabilities measured as of December 31, 2015 and 2014 are not adjusted or rolled forward to the June 30, 2016 and 2015 reporting dates, respectively.

- The NPL increased from \$1,741 million as of December 31, 2014 to \$2,118 million as of December 31, 2015 primarily as a result of (i) the unfavorable investment results during calendar year 2015 of about \$396 million, offset somewhat by (ii) the gains from lower than expected active salary increases during 2014 (because liabilities are rolled forward from December 31, 2014 to December 31, 2015, these gains are first reported in the December 31, 2015 results). Changes in these values during the last two fiscal years ending December 31, 2014 and December 31, 2015 can be found in Exhibit 5.
- The discount rate used to determine the TPL and NPL as of December 31, 2015 and 2014 was 7.60%, based on the assumption that was used by the Association in the pension funding valuations as of those dates. The detailed calculations of the discount rate of 7.60% used in the calculation of the TPL and NPL as of December 31, 2015 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 General LARPD Tier 3 and Tier 4 membership class has only one employer (LARPD), so all of the NPL for General LARPD Tier 3 and Tier 4 is allocated to LARPD. The Safety membership class also has only one employer (County), so all of the NPL for Safety is allocated to the County.

For General excluding LARPD Tier 3 and Tier 4, the NPL is allocated based on the actual employer contributions within the General non-LARPD Tier 3 and Tier 4 membership class. The steps used for the allocation are as follows:

- First calculate the ratio of the employer's contributions to the total contributions for the membership class.
- This ratio is multiplied by the NPL for the membership class to determine the employer's proportionate share of the NPL for the membership class.

If the employer is in several membership classes, the employer's total allocated NPL is the sum of its allocated NPL from each membership class. The proportionate share of the total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

- Results shown in this report exclude any employer contributions made after the measurement date of December 31, 2015. The employer should consult with their auditors to determine the deferred outflow that should be created for these contributions.

SECTION 1: Valuation Summary for the Alameda County Employees' Retirement Association

Summary of Key Valuation Results

Reporting Date for Employer under GASB 68	06/30/2016⁽¹⁾	06/30/2015⁽²⁾
Measurement Date for Employer under GASB 68	12/31/2015	12/31/2014
Disclosure elements for plan year ending December 31:		
1. Service cost ⁽³⁾	\$172,584,860	\$167,119,699
2. Total Pension Liability	7,971,890,739	7,653,068,752
3. Plan Fiduciary Net Position	5,853,442,721	5,912,426,212
4. Net Pension Liability	2,118,448,018	1,740,642,540
5. Pension expense	397,131,747	288,805,501
Schedule of contributions for plan year ending December 31:		
6. Actuarially determined contributions	\$224,607,104	\$213,254,775
7. Actual contributions	224,607,104	213,254,775
8. Contribution deficiency (excess) (6) – (7)	0	0
Demographic data for plan year ending December 31:⁽⁴⁾		
9. Number of retired members and beneficiaries	8,990	8,813
10. Number of vested terminated members ⁽⁵⁾	2,027	1,995
11. Number of active members	11,071	11,025
Key assumptions as of December 31:		
12. Investment rate of return	7.60%	7.60%
13. Inflation rate	3.25%	3.25%
14. Projected salary increases ⁽⁶⁾	General: 7.45% to 4.15% and Safety: 10.45% to 4.45%	General: 7.45% to 4.15% and Safety: 10.45% to 4.45%

⁽¹⁾ The reporting date and measurement date for the plan are December 31, 2015.

⁽²⁾ The reporting date and measurement date for the plan are December 31, 2014.

⁽³⁾ Service cost is always based on the previous year's assumptions, meaning the 2015 service cost is based on those assumptions shown as of December 31, 2014, whereas the 2014 service cost is based on the December 31, 2013 assumptions shown below:

Key assumptions as of December 31:	2013
Investment rate of return	7.80%
Inflation rate	3.50%
Projected salary increases*	General: 7.20% to 4.60% and Safety: 10.20% to 4.70%

* Includes inflation at 3.50% plus real across the board salary increases of 0.50% plus merit and promotional increases.

⁽⁴⁾ Data as of December 31, 2014 is used in the measurement of the TPL as of December 31, 2015.

⁽⁵⁾ Includes members who left their contributions on deposit even though they have less than five years of service.

⁽⁶⁾ Includes inflation at 3.25% plus real across-the-board salary increases of 0.50% plus merit and promotional increases.

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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 ACERA. 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 ACERA.
- **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.
- An actuarial valuation is a measurement of the plan’s assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the ACERA 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.

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- 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 ACERA, it is not a fiduciary in its capacity as actuaries and consultants with respect to ACERA.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 1

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

Plan Description

Plan administration. The Alameda County Employees' Retirement Association (ACERA) was established by the Alameda County Board of Supervisors in 1947. ACERA is administered by the Board of Retirement and governed by the County Employees' Retirement Law of 1937 (California Government Code Section 31450 et. seq.). ACERA is a cost-sharing, multiple employer, defined benefit, public employee retirement system whose main function is to provide service retirement, disability, death, and survivor benefits to the General and Safety members employed by the County of Alameda. ACERA also provides retirement benefits to the employee members of First 5 Alameda County, Housing Authority of the County of Alameda, Alameda Health System, Livermore Area Recreation and Park District (LARPD), Superior Court of California—County of Alameda, and Alameda County Office of Education.

The management of ACERA is vested with the ACERA Board of Retirement. The Board consists of nine members and two alternates. The County Treasurer is a member of the Board of Retirement by law and is elected by the general public. Four members are appointed by the Board of Supervisors, one of whom may be a County Supervisor. Two active members are elected by the General members; one active member and one alternate are elected by the Safety members; one retired member and one alternate are elected by the retired members. All members of the Board of Retirement serve terms of three years except for the County Treasurer whose term runs concurrent with his term as County Treasurer.

Plan membership. At December 31, 2015, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	8,990
Vested terminated members entitled to, but not yet receiving benefits ⁽¹⁾	2,027
Active members	<u>11,071</u>
Total	22,088

⁽¹⁾ Includes terminated members due a refund of member contributions.

Note: Data as of December 31, 2015 is not used in the measurement of the TPL as of December 31, 2015.

Benefits provided. ACERA provides service retirement, disability, death, and survivor benefits to eligible employees. The first date of ACERA membership varies by employer, as follows:

- Alameda County, Alameda Health System and Alameda Superior Court Employees: Membership for these employees is effective on the first day of the second pay period following the employee's hire date in an ACERA-covered position. This is the date of entry into ACERA membership. As of the date of entry, payroll deductions for retirement contributions begin

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and service credit for each hour worked is earned. During the short period between the beginning of employment and the ACERA plan date of entry, the employee does not pay contributions or earn service credit. A member may purchase this service credit (referred to as “days prior to entry”) any time before retirement without changing the membership, but date of entry does not change.

- Housing Authority and Livermore Area Recreation and Park District Employees: Membership for these employees is effective on the first day of employee’s hire in an ACERA covered position. The first date of employment is the date of entry into ACERA membership. As of this date of entry, payroll deductions for retirement contributions begin and service credit for each hour work is earned.
- First 5 Employees: Membership for these employees is effective on the first day of the second pay period following the employee’s hire date.
- Office of Education Employees: This is a closed plan with one employee (i.e., there is no new ACERA membership). Membership for this employee is the first day of the second month following employee’s hire date.

There are separate retirement benefits for General and Safety members. Safety membership is extended to those involved in active law enforcement, deferred firefighters, or positions that have been designated as Safety by the Board of Retirement (e.g. Juvenile Hall Group Counselor, Probation Officer, etc.). All other employees are classified as General members.

Any new member who becomes a member on or after January 1, 2013 is placed into Tier 4 and is subject to the provisions of California Public Employees’ Pension Reform Act of 2013 (PEPRA), California Government Code 7522 et seq. and Assembly Bill (AB) 197.

General members enrolled in Tiers 1, 2, or 3 are eligible to retire once they attain the age of 70 regardless of service or at age 50 with five or more years of retirement service credit and a total of 10 years of qualifying membership. A non-Tier 4 General member with 30 years of service is eligible to retire regardless of age. General members enrolled in Tier 4 are eligible to retire once they have attained the age of 52 and have acquired five years of retirement service credit, or at age 70 regardless of service.

Safety members enrolled in Tiers 1, 2, 2C, or 2D are eligible to retire once they attain the age of 70 regardless of service or at age 50 with five or more years of retirement service credit and a total of 10 years of qualifying membership. A non-Tier 4 Safety member with 20 years of service is eligible to retire regardless of age. Safety members enrolled in Tier 4 are eligible to retire once they have attained the age of 50 and have acquired five years of retirement service credit, or at age 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.

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The tiers and their basic provisions are listed below:

<u>Tier Name</u>	<u>Service Retirement Governing Code Section</u>	<u>Effective Date</u>	<u>Basic Provisions</u>	<u>Final Average Salary Period</u>	<u>Plan Sponsors</u>
General Tier 1	§31676.12	Various	2.0% at 57; maximum 3% COLA	Highest 1-year	All
General Tier 2	§31676.1	June 30, 1983*	2.0% at 61; maximum 2% COLA	Highest 3-years	All except LARPD
General Tier 3	§31676.18	October 1, 2008	2.5% at 55; maximum 3% COLA	Highest 1-year	LARPD
General Tier 4	§7522.20(a)	January 1, 2013	2.5% at 67; maximum 2% COLA	Highest 3-years	All
Safety Tier 1	§31664.1	Various	3.0% at 50; maximum 3% COLA	Highest 1-year	County
Safety Tier 2	§31664.1	June 30, 1983	3.0% at 50; maximum 2% COLA	Highest 3-years	County
Safety Tier 2C	§31664	October 17, 2010	2.6% at 55; maximum 2% COLA	Highest 3-years	County
Safety Tier 2D	§31664.2	October 17, 2010	3.0% at 55; maximum 2% COLA	Highest 3-years	County
Safety Tier 4	§7522.25(d)	January 1, 2013	2.7% at 57; maximum 2% COLA	Highest 3-years	County

* For Housing Authority members, the effective date is September 30, 2011.

For members enrolled in Tiers 1, 2, 2C, 2D, or 3, the maximum monthly retirement allowance is 100% of final compensation. There is no maximum for members enrolled in Tier 4.

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. 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.

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ACERA provides an annual cost-of-living benefit to all retirees. The cost-of-living adjustment, based upon the Consumer Price Index for the San Francisco-Oakland-San Jose Area (with 1982-84 as the base period), is capped at 3.0% for General Tiers 1 and 3 and Safety Tier 1, and at 2.0% for General Tiers 2 and 4 and Safety Tiers 2, 2C, 2D, and 4.

The County of Alameda and the other participating 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 ACERA's actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of December 31, 2015 for 2015 (based on the December 31, 2013 valuation for the second half of 2014/2015 and on the December 31, 2014 valuation for the first half of 2015/2016) was 23.75% of compensation.

Members are required to make contributions to ACERA regardless of the retirement plan or tier in which they are included. The average member contribution rate as of December 31, 2015 for 2015 (based on the December 31, 2013 valuation for the second half of 2014/2015 and on the December 31, 2014 valuation for the first half of 2015/2016) was 8.77% of compensation.

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EXHIBIT 2

Net Pension Liability

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
The components of the Net Pension Liability are as follows:		
Total Pension Liability	\$7,971,890,739	\$7,653,068,752
Plan Fiduciary Net Position	<u>5,853,442,721</u>	<u>5,912,426,212</u>
Net Pension Liability	\$2,118,448,018	\$1,740,642,540
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	73.43%	77.26%

The Net Pension Liability was measured as of December 31, 2015 and 2014. Plan 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 Total Pension Liability from actuarial valuations as of December 31, 2014 and 2013, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL are the same as those used in ACERA's funding valuations as of December 31, 2014 and December 31, 2013, respectively.

Actuarial assumptions. The Total Pension Liabilities as of December 31, 2015 and December 31, 2014 were measured by actuarial valuations as of December 31, 2014 and December 31, 2013, respectively. The actuarial assumptions used to develop the December 31, 2015 and December 31, 2014 TPLs are the same assumptions used in the December 31, 2015 and December 31, 2014 funding valuations for ACERA, respectively. The assumptions used in the measurement of the TPLs are outlined in Section 3 of this report. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

	<u>December 31, 2015 and December 31, 2014</u>
Inflation	3.25%
Salary increases	General: 7.45% to 4.15% and Safety: 10.45% to 4.45%, vary by service, including inflation
Investment rate of return	7.60%, net of pension plan investment expense, including inflation
Other assumptions	See analysis of actuarial experience during the period December 1, 2010 through November 30, 2013

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EXHIBIT 3

Target Asset Allocation

The long-term expected rate of return on pension plan investments for funding valuation purposes was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term (Arithmetic) Expected Real Rate of Return
Domestic Large Cap Equity	25.60%	5.91%
Domestic Small Cap Equity	6.40%	6.47%
Developed International Equity	20.25%	6.88%
Emerging Market Equity	6.75%	8.24%
U.S. Core Fixed Income	11.25%	0.73%
High Yield Bonds	1.50%	2.67%
International Bonds	2.25%	0.42%
Real Estate	6.00%	4.95%
Commodities	2.00%	4.25%
Absolute Return (Hedge Fund)	7.50%	3.17%
Real Return	3.00%	0.70%
Private Equity	<u>7.50%</u>	11.94%
Total	100.00%	

Discount rate: The discount rate used to measure the Total Pension Liability was 7.60% as of December 31, 2015 and December 31, 2014. Our understanding is that Article 5.5 of the Statute, which authorizes the allocation of 50% of excess earnings to the SRBR, does not allow for the use of a different investment return assumption for funding than is used for interest crediting. In order to reflect the provisions of Article 5.5, we have treated future allocations to the SRBR as an

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additional outflow against the Plan's Fiduciary Net Position in the GASB crossover test, as mentioned earlier in Section 1. While this is exactly the same method we used in preparing our GASB 68 report as of December 31, 2014, this method is currently under review and may be changed by the Board in a subsequent valuation. We have estimated that the additional outflow would average approximately 0.75% of assets over time, based on the results of our stochastic modeling of the 50% allocation of future excess earnings to the SRBR.

The projection of cash flows used to determine the discount rate assumes plan member contributions will be made at the current member contribution rates, and that employer contributions will be made at rates equal to the actuarially determined contribution rates⁵ plus additional future contributions that would follow from the future allocation of excess earnings to the SRBR. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the pension plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both December 31, 2015 and December 31, 2014.

⁵ For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included.

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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 Net Pension Liability of ACERA as of December 31, 2015, which is allocated to all employers, calculated using the discount rate of 7.60%, as well as what ACERA's Net Pension Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.60%) or 1-percentage-point higher (8.60%) than the current rate. The determination of the NPL by employer is shown later in Exhibit 7.

Employer	Net Pension Liability		
	1% Decrease (6.60%)	Current Discount Rate (7.60%)	1% Increase (8.60%)
Alameda County	\$2,364,560,140	\$1,640,381,401	\$1,040,294,383
Health System	560,522,517	369,372,264	207,505,660
Superior Court	124,747,608	82,205,987	46,181,615
First 5	11,204,222	7,383,341	4,147,807
Housing Authority	14,634,931	9,644,104	5,417,857
LARPD	13,301,461	9,288,497	4,471,425
Office of Education	<u>261,653</u>	<u>172,424</u>	<u>96,864</u>
Total for all Employers	\$3,089,232,532	\$2,118,448,018	\$1,308,115,611

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EXHIBIT 5

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

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Total Pension Liability		
1. Service cost	\$172,584,860	\$167,119,699
2. Interest	579,500,335	542,377,025
3. Change of benefit terms	0	0
4. Differences between expected and actual experience	-31,964,793	-85,378,608
5. Changes of assumptions	0	431,863,478
6. Benefit payments, including refunds of member contributions	<u>-401,298,415</u>	<u>-378,689,492</u>
7. Net change in Total Pension Liability	\$318,821,987	\$677,292,102
8. Total Pension Liability – beginning	<u>7,653,068,752</u>	<u>6,975,776,650</u>
9. Total Pension Liability – ending	<u>\$7,971,890,739</u>	<u>\$7,653,068,752</u>
Plan Fiduciary Net Position		
10. Contributions – employer	\$224,607,104	\$213,254,775
11. Contributions – employee	82,948,934	79,714,187
12. Net investment income	49,020,511	318,245,465
13. Benefit payments, including refunds of member contributions	-401,298,415	-378,689,492
14. Administrative expense	-14,261,625	-13,854,830
15. Other	0	0
16. Net change in Plan Fiduciary Net Position	-\$58,983,491	\$218,670,105
17. Plan Fiduciary Net Position ⁽¹⁾ – beginning	<u>5,912,426,212</u>	<u>5,693,756,107</u>
18. Plan Fiduciary Net Position ⁽¹⁾ – ending	\$5,853,442,721	\$5,912,426,212
19. Net Pension Liability – ending (9) – (18)	<u>\$2,118,448,018</u>	<u>\$1,740,642,540</u>
20. Plan Fiduciary Net Position as a percentage of the Total Pension Liability	73.43%	77.26%
21. Covered-employee payroll ⁽²⁾	\$945,858,017 ⁽³⁾	\$886,924,862
22. Plan Net Pension Liability as percentage of covered-employee payroll	223.97%	196.26%

⁽¹⁾ Market value of assets, less OPEB-related SRBR assets (OPEB-related SRBR assets include a proportionate share of the deferred market losses after netting out the Contingency Reserve as of December 31, 2015, and 50% of the deferred market gains as of December 31, 2014, both reduced on a proportional basis relative to the total actual balances in the OPEB and non-OPEB reserves).

⁽²⁾ Covered employee payroll shown 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⁾ ACERA indicated that this amount is based on 27 pay periods for 2015.

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EXHIBIT 6

Schedule of ACERA's Contributions – Last Ten Plan Years

Plan Year Ended December 31	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll⁽¹⁾	Contributions as a Percentage of Covered-Employee Payroll
2006	\$127,095,644	\$127,095,644	\$0	\$708,162,267	17.95%
2007	130,039,582	130,039,582	0	757,852,846	17.16%
2008	129,660,363	129,660,363	0	810,712,790	15.99%
2009	132,198,602	132,198,602	0	838,141,323	15.77%
2010	147,543,301	147,543,301	0	839,617,361	17.57%
2011	162,879,221	162,879,221	0	837,482,162	19.45%
2012	179,648,812	179,648,812	0	845,932,592	21.24%
2013	191,180,146	191,180,146	0	853,349,657	22.40%
2014	213,254,775	213,254,775	0	886,924,862	24.04%
2015	224,607,104	224,607,104	0	945,858,017 ⁽²⁾	23.75%

⁽¹⁾ Covered-employee payroll shown includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

⁽²⁾ ACERA indicated that this amount is based on 27 pay periods for 2015.

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Notes to Exhibit 6

Methods and assumptions used to establish "actuarially determined contribution" (ADC) 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, 2013 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, 2014 valuation.
Actuarial cost method	Entry Age Actuarial Cost Method
Amortization method	Level percent of payroll (3.75% payroll growth assumed)
Remaining amortization period	
December 31, 2013 valuation	Prior to January 1, 2012, the total UAAL was amortized on a 30-year decreasing period, with 21 years remaining as of December 31, 2011 (and 19 years remaining as of December 31, 2013). On or after January 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.
December 31, 2014 valuation	Prior to January 1, 2012, the total UAAL was amortized on a 30-year decreasing period, with 21 years remaining as of December 31, 2011 (and 18 years remaining as of December 31, 2014). On or after January 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.
Asset valuation method	The actuarial value of assets is determined by recognizing any difference between the actual and the expected market return over 10 six-month interest crediting periods. The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets. 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 Alameda County Employees' Retirement Association

Notes to Exhibit 6 (continued)

Actuarial assumptions:	December 31, 2013 Valuation (for first six months of 2015 ADC)	December 31, 2014 Valuation (for last six months of 2015 ADC)
Investment rate of return	7.80%, net of pension plan investment expense, including inflation	7.60%, net of pension plan investment expense, including inflation
Inflation rate	3.50%	3.25%
Real across-the-board salary increases	0.50%	0.50%
Projected salary increases	General: 7.20% to 4.60% and Safety: 10.20% to 4.70%, vary by service, including inflation	General: 7.45% and 4.15% and Safety: 10.45% to 4.45%, vary by service, including inflation
Cost of living adjustments	3.00% of retirement income for General Tiers 1 and 3, and Safety Tier 1; 2.00% for General Tiers 2 and 4, and Safety Tiers 2, 2C, 2D, and 4	3.00% of retirement income for General Tiers 1 and 3, and Safety Tier 1; 2.00% for General Tiers 2 and 4, and Safety Tiers 2, 2C, 2D, and 4
Other assumptions	Same as those used in the December 31, 2013 funding actuarial valuation	Same as those used in the December 31, 2014 funding actuarial valuation

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 7

Determination of Proportionate Share

Actual Employer Contributions by Employer and Membership Class January 1, 2014 to December 31, 2014						
Employer	(All, Excluding LARPD Tier 3 and Tier 4)		(LARPD Tier 3 and Tier 4 Only)		(All General Members Combined)	
	General Contributions	General Percentage⁽¹⁾	General Contributions	General Percentage	General Contributions	General Percentage
Alameda County	\$91,309,336	64.624%	\$0	0.000%	\$91,309,336	64.188%
Health System	39,346,880	27.848%	0	0.000%	39,346,880	27.660%
Superior Court	8,665,762	6.133%	0	0.000%	8,665,762	6.092%
First 5	764,451	0.541%	0	0.000%	764,451	0.537%
Housing Authority	1,004,394	0.711%	0	0.000%	1,004,394	0.706%
LARPD	185,168	0.131%	960,176	100.000%	1,145,344	0.805%
Office of Education	<u>17,612</u>	<u>0.012%</u>	<u>0</u>	<u>0.000%</u>	<u>17,612</u>	<u>0.012%</u>
Total for all Employers	\$141,293,603	100.000%	\$960,176	100.000%	\$142,253,779	100.000%

Actual Employer Contributions by Employer and Membership Class January 1, 2014 to December 31, 2014				
Employer	Safety Contributions	Safety Percentage	Total Contributions	Total Percentage
Alameda County	\$71,000,996	100.000%	\$162,310,332	76.111%
Health System	0	0.000%	39,346,880	18.451%
Superior Court	0	0.000%	8,665,762	4.064%
First 5	0	0.000%	764,451	0.358%
Housing Authority	0	0.000%	1,004,394	0.471%
LARPD	0	0.000%	1,145,344	0.537%
Office of Education	<u>0</u>	<u>0.000%</u>	<u>17,612</u>	<u>0.008%</u>
Total for all Employers	\$71,000,996	100.000%	\$213,254,775	100.000%

⁽¹⁾ The unrounded percentages are used in the allocation of the NPL amongst the General employers.

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EXHIBIT 7 (continued)

Determination of Proportionate Share

Allocation of December 31, 2014 Net Pension Liability						
Employer	(All, Excluding LARPD Tier 3 and Tier 4)		(LARPD Tier 3 and Tier 4 Only)		(All General Members Combined)	
	General NPL	General Percentage	General NPL	General Percentage	General NPL	General Percentage
Alameda County	\$677,763,516	64.624%	\$0	0.000%	\$677,763,516	64.207%
Health System	292,060,821	27.848%	0	0.000%	292,060,821	27.667%
Superior Court	64,323,516	6.133%	0	0.000%	64,323,516	6.093%
First 5	5,674,306	0.541%	0	0.000%	5,674,306	0.538%
Housing Authority	7,455,335	0.711%	0	0.000%	7,455,335	0.706%
LARPD	1,374,449	0.131%	6,828,998	100.000%	8,203,447	0.777%
Office of Education	<u>130,731</u>	<u>0.012%</u>	<u>0</u>	<u>0.000%</u>	<u>130,731</u>	<u>0.012%</u>
Total for all Employers	\$1,048,782,674	100.000%	\$6,828,998	100.000%	\$1,055,611,672	100.000%

Allocation of December 31, 2014 Net Pension Liability				
Employer	Safety NPL	Safety Percentage	Total NPL	Total Percentage
Alameda County	\$685,030,868	100.000%	\$1,362,794,384	78.293%
Health System	0	0.000%	292,060,821	16.779%
Superior Court	0	0.000%	64,323,516	3.695%
First 5	0	0.000%	5,674,306	0.326%
Housing Authority	0	0.000%	7,455,335	0.428%
LARPD	0	0.000%	8,203,447	0.471%
Office of Education	<u>0</u>	<u>0.000%</u>	<u>130,731</u>	<u>0.008%</u>
Total for all Employers	\$685,030,868	100.000%	\$1,740,642,540	100.000%

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 7 (continued)

Determination of Proportionate Share

Notes:

Based on the January 1, 2014 through December 31, 2014 employer contributions as provided by ACERA.

The Net Pension Liability (NPL) for each membership class is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The Total Pension Liability for each membership class is obtained from internal valuation results. The Plan Fiduciary Net Position for each membership class was estimated by adjusting the valuation value of assets for each membership class by the ratio of the total ACERA Plan Fiduciary Net Position to total ACERA valuation value of assets.

The General LARPD Tier 3 and Tier 4 membership class has only one employer (LARPD), so all of the NPL for General LARPD Tier 3 and Tier 4 is allocated to LARPD. The Safety membership class also has only one employer (County), so all of the NPL for Safety is allocated to the County.

For General excluding LARPD Tier 3 and Tier 4, the NPL is allocated based on the actual employer contributions within the General non-LARPD Tier 3 and Tier 4 membership class. The steps used for the allocation are as follows:

- First calculate the ratio of the employer's contributions to the total contributions for the membership class.
- This ratio is multiplied by the NPL for the membership class to determine the employer's proportionate share of the NPL for the membership class.

If the employer is in several membership classes, the employer's total allocated NPL is the sum of its allocated NPL from each membership class. The proportionate share of the 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 Alameda County Employees' Retirement Association

EXHIBIT 7 (continued)

Determination of Proportionate Share

Actual Employer Contributions by Employer and Membership Class January 1, 2015 to December 31, 2015						
Employer	(All, Excluding LARPD Tier 3 and Tier 4)		(LARPD Tier 3 and Tier 4 Only)		(All General Members Combined)	
	General Contributions	General Percentage⁽¹⁾	General Contributions	General Percentage	General Contributions	General Percentage
Alameda County	\$94,601,762	64.717%	\$0	0.000%	\$94,601,762	64.282%
Health System	40,472,294	27.687%	0	0.000%	40,472,294	27.501%
Superior Court	9,007,349	6.162%	0	0.000%	9,007,349	6.121%
First 5	808,996	0.553%	0	0.000%	808,996	0.550%
Housing Authority	1,056,709	0.723%	0	0.000%	1,056,709	0.718%
LARPD	211,743	0.145%	987,560	100.000%	1,199,303	0.815%
Office of Education	<u>18,893</u>	<u>0.013%</u>	<u>0</u>	<u>0.000%</u>	<u>18,893</u>	<u>0.013%</u>
Total for all Employers	\$146,177,746	100.000%	\$987,560	100.000%	\$147,165,306	100.000%

Actual Employer Contributions by Employer and Membership Class January 1, 2015 to December 31, 2015				
Employer	Safety Contributions	Safety Percentage	Total Contributions	Total Percentage
Alameda County	\$77,441,798	100.000%	\$172,043,560	76.599%
Health System	0	0.000%	40,472,294	18.019%
Superior Court	0	0.000%	9,007,349	4.010%
First 5	0	0.000%	808,996	0.360%
Housing Authority	0	0.000%	1,056,709	0.470%
LARPD	0	0.000%	1,199,303	0.534%
Office of Education	<u>0</u>	<u>0.000%</u>	<u>18,893</u>	<u>0.008%</u>
Total for all Employers	\$77,441,798	100.000%	\$224,607,104	100.000%

⁽¹⁾ The unrounded percentages are used in the allocation of the NPL amongst the General employers.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 7 (continued)

Determination of Proportionate Share

Employer	Allocation of December 31, 2015 Net Pension Liability					
	(All, Excluding LARPD Tier 3 and Tier 4)		(LARPD Tier 3 and Tier 4 Only)		(All General Members Combined)	
	General NPL	General Percentage	General NPL	General Percentage	General NPL	General Percentage
Alameda County	\$863,387,367	64.717%	\$0	0.000%	\$863,387,367	64.363%
Health System	369,372,264	27.687%	0	0.000%	369,372,264	27.535%
Superior Court	82,205,987	6.162%	0	0.000%	82,205,987	6.128%
First 5	7,383,341	0.553%	0	0.000%	7,383,341	0.550%
Housing Authority	9,644,104	0.723%	0	0.000%	9,644,104	0.719%
LARPD	1,932,486	0.145%	7,356,011	100.000%	9,288,497	0.692%
Office of Education	172,424	0.013%	0	0.000%	172,424	0.013%
Total for all Employers	\$1,334,097,973	100.000%	\$7,356,011	100.000%	\$1,341,453,984	100.000%

Employer	Allocation of December 31, 2015 Net Pension Liability			
	Safety NPL	Safety Percentage	Total NPL	Total Percentage
Alameda County	\$776,994,034	100.000%	\$1,640,381,401	77.434%
Health System	0	0.000%	369,372,264	17.436%
Superior Court	0	0.000%	82,205,987	3.880%
First 5	0	0.000%	7,383,341	0.349%
Housing Authority	0	0.000%	9,644,104	0.455%
LARPD	0	0.000%	9,288,497	0.438%
Office of Education	0	0.000%	172,424	0.008%
Total for all Employers	\$776,994,034	100.000%	\$2,118,448,018	100.000%

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 7 (continued)

Determination of Proportionate Share

Notes:

Based on the January 1, 2015 through December 31, 2015 employer contributions as provided by ACERA.

The Net Pension Liability (NPL) for each membership class is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The Total Pension Liability for each membership class is obtained from internal valuation results. The Plan Fiduciary Net Position for each membership class was estimated by adjusting the valuation value of assets for each membership class by the ratio of the total ACERA Plan Fiduciary Net Position to total ACERA valuation value of assets.

The General LARPD Tier 3 and Tier 4 membership class has only one employer (LARPD), so all of the NPL for General LARPD Tier 3 and Tier 4 is allocated to LARPD. The Safety membership class also has only one employer (County), so all of the NPL for Safety is allocated to the County.

For General excluding LARPD Tier 3 and Tier 4, the NPL is allocated based on the actual employer contributions within the General non-LARPD Tier 3 and Tier 4 membership class. The steps used for the allocation are as follows:

- First calculate the ratio of the employer's contributions to the total contributions for the membership class.
- This ratio is multiplied by the NPL for the membership class to determine the employer's proportionate share of the NPL for the membership class.

If the employer is in several membership classes, the employer's total allocated NPL is the sum of its allocated NPL from each membership class. The proportionate share of the total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers.

For purposes of the above results, the reporting date for the employer under GASB 68 is June 30, 2016. The reporting date and the measurement date for the plan under GASB 67 are December 31, 2015. Consistent with the provisions of GASB 68, the assets and liabilities measured as of December 31, 2015 are not adjusted or "rolled forward" to the June 30, 2016 reporting date. Other results, such as the total deferred inflows and outflows, would also be allocated based on the same proportionate share determined above.

The following items are allocated based on the corresponding proportionate share within each membership class:

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8

Pension Expense – Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$172,584,860	\$167,119,699
2. Interest on the total pension liability	579,500,335	542,377,025
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	-5,667,516	-15,031,445
6. Expensed portion of current-period changes of assumptions or other inputs	0	76,032,302
7. Actual member contributions	-82,948,934	-79,714,187
8. Projected earnings on plan investments	-445,240,240	-440,229,537
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	79,243,946	24,396,814
10. Administrative expense	14,261,625	13,854,830
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	100,429,116	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-15,031,445	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
Pension Expense	<u>\$397,131,747</u>	<u>\$288,805,501</u>

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EXHIBIT 8 (continued)

Pension Expense – Alameda County

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$127,107,449	\$122,475,884
2. Interest on the total pension liability	429,334,806	401,730,848
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	126,970	707,177
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	-4,150,190	-10,597,042
6. Expensed portion of current-period changes of assumptions or other inputs	0	55,363,715
7. Actual member contributions	-63,536,859	-60,671,262
8. Projected earnings on plan investments	-324,585,294	-320,505,938
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	58,670,239	18,479,964
10. Administrative expense	10,389,827	10,081,529
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	73,913,010	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-10,608,485	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>707,177</u>	<u>0</u>
Pension Expense	<u>\$297,368,650</u>	<u>\$217,064,875</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8 (continued)

Pension Expense – Health System

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$34,983,352	\$34,458,678
2. Interest on the total pension liability	116,133,038	109,125,420
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	-218,949	-223,283
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	-1,066,564	-3,422,105
6. Expensed portion of current-period changes of assumptions or other inputs	0	16,110,322
7. Actual member contributions	-14,946,694	-14,707,781
8. Projected earnings on plan investments	-93,397,659	-93,031,686
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	15,942,626	4,625,801
10. Administrative expense	2,997,914	2,932,856
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	20,616,566	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-3,402,374	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-223,283</u>	<u>0</u>
Pension Expense	<u>\$77,417,973</u>	<u>\$55,868,222</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8 (continued)

Pension Expense – Superior Court

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$7,785,750	\$7,589,187
2. Interest on the total pension liability	25,846,096	24,033,797
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	39,213	-366,568
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	-237,370	-753,685
6. Expensed portion of current-period changes of assumptions or other inputs	0	3,548,139
7. Actual member contributions	-3,326,475	-3,239,244
8. Projected earnings on plan investments	-20,786,202	-20,489,311
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	3,548,126	1,018,787
10. Administrative expense	667,204	645,933
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	4,588,339	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-757,218	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-366,568</u>	<u>0</u>
Pension Expense	<u>\$17,000,895</u>	<u>\$11,987,035</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8 (continued)

Pension Expense – First 5

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$699,280	\$669,481
2. Interest on the total pension liability	2,321,370	2,120,144
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	16,904	-49,350
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	-21,319	-66,486
6. Expensed portion of current-period changes of assumptions or other inputs	0	312,999
7. Actual member contributions	-298,768	-285,750
8. Projected earnings on plan investments	-1,866,915	-1,807,466
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	318,675	89,872
10. Administrative expense	59,925	56,981
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	412,102	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-68,010	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-49,350</u>	<u>0</u>
Pension Expense	<u>\$1,523,894</u>	<u>\$1,040,425</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8 (continued)

Pension Expense – Housing Authority

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$913,395	\$879,615
2. Interest on the total pension liability	3,032,169	2,785,606
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	16,415	-66,755
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	-27,847	-87,355
6. Expensed portion of current-period changes of assumptions or other inputs	0	411,243
7. Actual member contributions	-390,250	-375,440
8. Projected earnings on plan investments	-2,438,561	-2,374,787
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	416,253	118,081
10. Administrative expense	78,274	74,866
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	538,287	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-88,834	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-66,755</u>	<u>0</u>
Pension Expense	<u>\$1,982,546</u>	<u>\$1,365,074</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8 (continued)

Pension Expense – LARPD

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$1,079,304	\$1,031,427
2. Interest on the total pension liability	2,778,645	2,532,365
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	18,821	-233
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	-163,728	-103,240
6. Expensed portion of current-period changes of assumptions or other inputs	0	278,673
7. Actual member contributions	-442,911	-428,127
8. Projected earnings on plan investments	-2,122,011	-1,978,707
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	340,585	62,238
10. Administrative expense	67,082	61,352
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	351,188	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-104,936	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-233</u>	<u>0</u>
Pension Expense	<u>\$1,801,806</u>	<u>\$1,455,748</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 8 (continued)

Pension Expense – Office of Education

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Components of Pension Expense		
1. Service Cost	\$16,330	\$15,427
2. Interest on the total pension liability	54,211	48,845
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	626	-988
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	-498	-1,532
6. Expensed portion of current-period changes of assumptions or other inputs	0	7,211
7. Actual member contributions	-6,977	-6,583
8. Projected earnings on plan investments	-43,598	-41,642
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	7,442	2,071
10. Administrative expense	1,399	1,313
11. Other	0	0
12. Recognition of beginning of year deferred outflows of resources as pension expense	9,624	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	-1,588	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-988</u>	<u>0</u>
Pension Expense	<u>\$35,983</u>	<u>\$24,122</u>

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9

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

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$3,618,325	\$3,309,581
2. Changes of assumptions or other inputs	279,798,874	355,831,176
3. Net difference between projected and actual earnings on pension plan investments	390,166,227	97,587,258
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$673,583,426	\$456,728,015
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$3,618,325	\$3,309,581
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>81,612,995</u>	<u>70,347,163</u>
10. Total Deferred Inflows of Resources	\$85,231,320	\$73,656,744

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:

2016	N/A	\$85,397,671
2017	\$158,974,101	85,397,671
2018	158,974,101	85,397,671
2019	158,974,103	85,397,673
2020	115,057,014	41,480,585
2021	-3,627,213	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – Alameda County

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$3,191,549	\$3,309,581
2. Changes of assumptions or other inputs	203,936,698	259,102,187
3. Net difference between projected and actual earnings on pension plan investments	290,167,249	73,919,857
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$497,295,496	\$336,331,625
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>58,296,106</u>	<u>49,594,162</u>
10. Total Deferred Inflows of Resources	\$58,296,106	\$49,594,162

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:

2016	N/A	\$63,953,812
2017	\$118,658,722	63,953,812
2018	118,658,722	63,953,812
2019	118,658,726	63,953,816
2020	85,598,079	30,922,211
2021	-2,574,859	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – Health System

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$0	\$0
2. Changes of assumptions or other inputs	58,944,162	75,396,307
3. Net difference between projected and actual earnings on pension plan investments	77,567,894	18,503,204
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$136,512,056	\$93,899,511
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$1,837,601	\$1,044,963
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>17,469,593</u>	<u>16,015,450</u>
10. Total Deferred Inflows of Resources	\$19,307,194	\$17,060,413

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:

2016	N/A	\$17,090,736
2017	\$31,648,022	17,090,736
2018	31,648,022	17,090,736
2019	31,648,021	17,090,735
2020	23,083,523	8,476,155
2021	-822,726	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – Superior Court

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$181,947	\$0
2. Changes of assumptions or other inputs	13,118,373	16,605,293
3. Net difference between projected and actual earnings on pension plan investments	17,263,194	4,075,148
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$30,563,514	\$20,680,441
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$1,348,969	\$1,715,537
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>3,887,961</u>	<u>3,527,245</u>
10. Total Deferred Inflows of Resources	\$5,236,930	\$5,242,782

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:

2016	N/A	\$3,446,674
2017	\$6,814,521	3,446,674
2018	6,814,521	3,446,674
2019	6,814,521	3,446,674
2020	5,009,842	1,650,963
2021	-126,821	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – First 5

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$78,432	\$0
2. Changes of assumptions or other inputs	1,178,228	1,464,837
3. Net difference between projected and actual earnings on pension plan investments	1,550,496	359,490
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$2,807,156	\$1,824,327
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$181,607	\$230,957
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>349,198</u>	<u>311,156</u>
10. Total Deferred Inflows of Resources	\$530,805	\$542,113

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:

2016	N/A	\$287,035
2017	\$609,002	287,035
2018	609,002	287,035
2019	609,002	287,035
2020	452,172	134,074
2021	-2,827	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – Housing Authority

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$76,163	\$0
2. Changes of assumptions or other inputs	1,538,999	1,924,615
3. Net difference between projected and actual earnings on pension plan investments	2,025,255	472,325
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$3,640,417	\$2,396,940
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$245,656	\$312,411
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>456,121</u>	<u>408,821</u>
10. Total Deferred Inflows of Resources	\$701,777	\$721,232

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:

2016	N/A	\$375,214
2017	\$787,519	375,214
2018	787,519	375,214
2019	787,519	375,214
2020	583,403	174,852
2021	-7,320	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – LARPD

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$87,327	\$0
2. Changes of assumptions or other inputs	1,054,899	1,304,189
3. Net difference between projected and actual earnings on pension plan investments	1,555,930	248,952
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$2,698,156	\$1,553,141
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$855	\$1,088
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>1,145,861</u>	<u>483,160</u>
10. Total Deferred Inflows of Resources	\$1,146,716	\$484,248

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:

2016	N/A	\$237,438
2017	\$441,697	237,438
2018	441,697	237,438
2019	441,696	237,437
2020	319,093	119,142
2021	-92,743	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources – Office of Education

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Deferred Outflows of Resources		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$2,907	\$0
2. Changes of assumptions or other inputs	27,515	33,748
3. Net difference between projected and actual earnings on pension plan investments	36,209	8,282
4. Difference between expected and actual experience in the total pension liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$66,631	\$42,030
Deferred Inflows of Resources		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions ⁽¹⁾	\$3,637	\$4,625
7. Changes of assumptions or other inputs	0	0
8. Net difference between projected and actual earnings on pension plan investments	0	0
9. Difference between expected and actual experience in the total pension liability	<u>8,155</u>	<u>7,169</u>
10. Total Deferred Inflows of Resources	\$11,792	\$11,794

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:

2016	N/A	\$6,762
2017	\$14,618	6,762
2018	14,618	6,762
2019	14,618	6,762
2020	10,902	3,188
2021	83	0
Thereafter	0	0

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 9 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources

There are changes in each employer's proportionate share of the total Net Pension Liability during the measurement period ended December 31, 2015. The net effect of the change on the employer's proportionate share of the collective Net Pension Liability and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through ACERA, which is 5.64 years determined as of December 31, 2014 (the beginning of the measurement period ending December 31, 2015).

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended December 31, 2015 is recognized over the same period.

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

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

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10

Schedule of Proportionate Share of the Net Pension Liability – Total for all Employers

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	100.000%	\$1,282,020,543	\$853,349,657	150.23%	81.62%
2015	100.000%	\$1,740,642,540	\$886,924,862	196.26%	77.26%
2016	100.000%	\$2,118,448,018	\$945,858,017	223.97%	73.43%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – Alameda County

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	79.664%	\$1,021,302,378	\$597,886,511	170.82%	80.13%
2015	78.293%	\$1,362,794,384	\$624,890,234	218.09%	75.95%
2016	77.434%	\$1,640,381,401	\$669,324,559	245.08%	72.23%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – Health System

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	15.499%	\$198,700,381	\$197,865,572	100.42%	85.92%
2015	16.779%	\$292,060,821	\$205,303,352	142.26%	81.06%
2016	17.436%	\$369,372,264	\$217,863,121	169.54%	76.89%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – Superior Court

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	3.554%	\$45,564,584	\$45,426,844	100.30%	85.92%
2015	3.695%	\$64,323,516	\$44,783,132	143.63%	81.06%
2016	3.880%	\$82,205,987	\$45,883,436	179.16%	76.89%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – First 5

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.321%	\$4,116,118	\$4,191,989	98.19%	85.92%
2015	0.326%	\$5,674,306	\$3,957,401	143.38%	81.06%
2016	0.349%	\$7,383,341	\$4,239,645	174.15%	76.89%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – Housing Authority

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.423%	\$5,418,947	\$4,112,203	131.78%	85.92%
2015	0.428%	\$7,455,335	\$4,002,650	186.26%	81.06%
2016	0.455%	\$9,644,104	\$4,272,082	225.75%	76.89%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – LARPD

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered- employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered- employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.532%	\$6,824,150	\$3,796,820	179.73%	78.70%
2015	0.471%	\$8,203,447	\$3,919,778	209.28%	76.82%
2016	0.438%	\$9,288,497	\$4,203,012	221.00%	75.39%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 10 (continued)

Schedule of Proportionate Share of the Net Pension Liability – Office of Education

Reporting Date for Employer under GASB 68 as of June 30	Proportion of the Net Pension Liability	Proportionate share of Net Pension Liability	Covered-employee payroll⁽¹⁾	Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2014	0.007%	\$93,985	\$69,718	134.81%	85.92%
2015	0.008%	\$130,731	\$68,314	191.37%	81.06%
2016	0.008%	\$172,424	\$72,162	238.94%	76.89%

⁽¹⁾ Covered-employee payroll includes only Compensation Earnable and Pensionable Compensation that would go into the determination of retirement benefits.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11

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

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$1,740,642,540	\$1,282,020,543
2. Pension Expense	397,131,747	288,805,501
3. Employer Contributions	-224,607,104	-213,254,775
4. New Net Deferred Inflows/Outflows	290,678,506	383,071,271
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion	0	0
7. Recognition of Prior Deferred Inflows/Outflows	-85,397,671	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$2,118,448,018	\$1,740,642,540

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – Alameda County

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$1,362,794,384	\$1,021,302,378
2. Pension Expense	297,368,650	217,064,875
3. Employer Contributions	-172,043,560	-162,310,332
4. New Net Deferred Inflows/Outflows	215,424,076	283,427,882
5. Change in Allocation of Prior Deferred Inflows/Outflows	260,408	0
6. New Net Deferred Flows Due to Change in Proportion	589,145	3,309,581
7. Recognition of Prior Deferred Inflows/Outflows	-63,304,525	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>-707,177</u>	<u>0</u>
9. Ending Net Pension Liability	\$1,640,381,401	\$1,362,794,384

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – Health System

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$292,060,821	\$198,700,381
2. Pension Expense	77,417,973	55,868,222
3. Employer Contributions	-40,472,294	-39,346,880
4. New Net Deferred Inflows/Outflows	58,821,647	77,884,061
5. Change in Allocation of Prior Deferred Inflows/Outflows	-449,053	0
6. New Net Deferred Flows Due to Change in Proportion	-1,015,921	-1,044,963
7. Recognition of Prior Deferred Inflows/Outflows	-17,214,192	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>223,283</u>	<u>0</u>
9. Ending Net Pension Liability	\$369,372,264	\$292,060,821

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – Superior Court

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$64,323,516	\$45,564,584
2. Pension Expense	17,000,895	11,987,035
3. Employer Contributions	-9,007,349	-8,665,762
4. New Net Deferred Inflows/Outflows	13,091,107	17,153,196
5. Change in Allocation of Prior Deferred Inflows/Outflows	80,424	0
6. New Net Deferred Flows Due to Change in Proportion	181,947	-1,715,537
7. Recognition of Prior Deferred Inflows/Outflows	-3,831,121	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>366,568</u>	<u>0</u>
9. Ending Net Pension Liability	\$82,205,987	\$64,323,516

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – First 5

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$5,674,306	\$4,116,118
2. Pension Expense	1,523,894	1,040,425
3. Employer Contributions	-808,996	-764,451
4. New Net Deferred Inflows/Outflows	1,175,778	1,513,171
5. Change in Allocation of Prior Deferred Inflows/Outflows	34,669	0
6. New Net Deferred Flows Due to Change in Proportion	78,432	-230,957
7. Recognition of Prior Deferred Inflows/Outflows	-344,092	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>49,350</u>	<u>0</u>
9. Ending Net Pension Liability	\$7,383,341	\$5,674,306

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – Housing Authority

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$7,455,335	\$5,418,947
2. Pension Expense	1,982,546	1,365,074
3. Employer Contributions	-1,056,709	-1,004,394
4. New Net Deferred Inflows/Outflows	1,535,801	1,988,119
5. Change in Allocation of Prior Deferred Inflows/Outflows	33,666	0
6. New Net Deferred Flows Due to Change in Proportion	76,163	-312,411
7. Recognition of Prior Deferred Inflows/Outflows	-449,453	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>66,755</u>	<u>0</u>
9. Ending Net Pension Liability	\$9,644,104	\$7,455,335

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – LARPD

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$8,203,447	\$6,824,150
2. Pension Expense	1,801,806	1,455,748
3. Employer Contributions	-1,199,303	-1,145,344
4. New Net Deferred Inflows/Outflows	602,638	1,069,981
5. Change in Allocation of Prior Deferred Inflows/Outflows	38,601	0
6. New Net Deferred Flows Due to Change in Proportion	87,327	-1,088
7. Recognition of Prior Deferred Inflows/Outflows	-246,252	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>233</u>	<u>0</u>
9. Ending Net Pension Liability	\$9,288,497	\$8,203,447

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 11 (continued)

Schedule of Reconciliation of Net Pension Liability – Office of Education

Reporting Date for Employer under GASB 68	June 30, 2016	June 30, 2015
Measurement Date for Employer under GASB 68	December 31, 2015	December 31, 2014
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$130,731	\$93,985
2. Pension Expense	35,983	24,122
3. Employer Contributions	-18,893	-17,612
4. New Net Deferred Inflows/Outflows	27,459	34,861
5. Change in Allocation of Prior Deferred Inflows/Outflows	1,285	0
6. New Net Deferred Flows Due to Change in Proportion	2,907	-4,625
7. Recognition of Prior Deferred Inflows/Outflows	-8,036	0
8. Recognition of Prior Deferred Flows Due to Change in Proportion	<u>988</u>	<u>0</u>
9. Ending Net Pension Liability	\$172,424	\$130,731

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 12

Schedule of Recognition of Changes in Total Net Pension Liability

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

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GASB 68, Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	Thereafter
2015	-\$85,378,608	5.68	-\$15,031,445	-\$15,031,445	-\$15,031,445	-\$15,031,445	-\$15,031,445	-\$10,221,383	\$0	\$0
2016	-\$31,964,793	5.64	<u>N/A</u>	<u>-5,667,516</u>	<u>-5,667,516</u>	<u>-5,667,516</u>	<u>-5,667,516</u>	<u>-5,667,516</u>	<u>-3,627,213</u>	<u>0</u>
Net increase (decrease) in pension expense			-\$15,031,445	-\$20,698,961	-\$20,698,961	-\$20,698,961	-\$20,698,961	-\$15,888,899	-\$3,627,213	\$0

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	Effects of Assumption Changes	Recognition Period (Years)	Reporting Date for Employer under GASB 68, Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	Thereafter
2015	\$431,863,478	5.68	\$76,032,302	\$76,032,302	\$76,032,302	\$76,032,302	\$76,032,302	\$51,701,968	\$0	\$0
2016	\$0	5.64	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			\$76,032,302	\$76,032,302	\$76,032,302	\$76,032,302	\$76,032,302	\$51,701,968	\$0	\$0

As described in Exhibit 9, the average of the expected remaining service lives of all employees that are provided with pensions through ACERA (active and inactive employees) determined as of December 31, 2014 (the beginning of the measurement period ending December 31, 2015) is 5.64 years.

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 12 (continued)

Schedule of Recognition of Changes in Total Net Pension Liability

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Projected and Actual Earnings

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	Thereafter
2015	\$121,984,072	5.00	\$24,396,814	\$24,396,814	\$24,396,814	\$24,396,814	\$24,396,816	\$0	\$0	\$0
2016	396,219,729	5.00	<u>N/A</u>	<u>79,243,946</u>	<u>79,243,946</u>	<u>79,243,946</u>	<u>79,243,946</u>	<u>79,243,945</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			\$24,396,814	\$103,640,760	\$103,640,760	\$103,640,760	\$103,640,762	\$79,243,945	\$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.

Total Increase (Decrease) in Pension Expense

Reporting Date for Employer under GASB 68 Year Ended June 30	Total Differences and Changes	Reporting Date for Employer under GASB 68, Year Ended June 30:								
		2015	2016	2017	2018	2019	2020	2021	Thereafter	
2015	\$468,468,942	\$85,397,671	\$85,397,671	\$85,397,671	\$85,397,671	\$85,397,673	\$41,480,585	\$0	\$0	
2016	\$364,254,936	<u>N/A</u>	<u>73,576,430</u>	<u>73,576,430</u>	<u>73,576,430</u>	<u>73,576,430</u>	<u>73,576,429</u>	<u>-3,627,213</u>	<u>0</u>	
Net increase (decrease) in pension expense		\$85,397,671	\$158,974,101	\$158,974,101	\$158,974,101	\$158,974,103	\$115,057,014	-\$3,627,213	\$0	

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 13

Allocation of Changes in Total Net Pension Liability

In addition to the amounts shown in Exhibit 12, there are changes in each location's proportionate share of the total Net Pension Liability during the measurement period ending on December 31, 2015. The net effect of the change on the employer's proportionate share of the collective Net Pension Liability and collective deferred outflows of resources and deferred inflows of resources is also recognized over the average of the expected remaining service lives of all employees shown above. The difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ending on December 31, 2015 is recognized over the same periods. These recognized amounts are shown below. While these amounts are different for each employer, they sum to zero over the entire Retirement Association.

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

	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
Alameda County	\$716,115	5.64	\$126,970	\$126,970	\$126,970	\$126,970	\$126,970	\$81,265	\$0
Health System	-1,234,870	5.64	-218,949	-218,949	-218,949	-218,949	-218,949	-140,125	0
Superior Court	221,160	5.64	39,213	39,213	39,213	39,213	39,213	25,095	0
First 5	95,336	5.64	16,904	16,904	16,904	16,904	16,904	10,816	0
Housing Authority	92,578	5.64	16,415	16,415	16,415	16,415	16,415	10,503	0
LARPD	106,148	5.64	18,821	18,821	18,821	18,821	18,821	12,043	0
Office of Education	<u>3,533</u>	5.64	<u>626</u>	<u>626</u>	<u>626</u>	<u>626</u>	<u>626</u>	<u>403</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 2: GASB 68 Information for the Alameda County Employees' Retirement Association

EXHIBIT 13 (continued)

Allocation of Changes in Total Net Pension Liability

The amounts as of June 30, 2015 are as follows:

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

	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
Alameda County	\$4,016,758	5.68	\$707,177	\$707,177	\$707,177	\$707,177	\$707,177	\$480,873	\$0
Health System	-1,268,246	5.68	-223,283	-223,283	-223,283	-223,283	-223,283	-151,831	0
Superior Court	-2,082,105	5.68	-366,568	-366,568	-366,568	-366,568	-366,568	-249,265	0
First 5	-280,307	5.68	-49,350	-49,350	-49,350	-49,350	-49,350	-33,557	0
Housing Authority	-379,166	5.68	-66,755	-66,755	-66,755	-66,755	-66,755	-45,391	0
LARPD	-1,321	5.68	-233	-233	-233	-233	-233	-156	0
Office of Education	<u>-5,613</u>	5.68	<u>-988</u>	<u>-988</u>	<u>-988</u>	<u>-988</u>	<u>-988</u>	<u>-673</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Actuarial Assumptions and Methods

For December 31, 2015 Measurement Date and Employer Reporting as of June 30, 2016

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 December 1, 2010 through November 30, 2013 Actuarial Experience Study report dated September 9, 2014. In addition, the Board adopted a 7.60% investment return assumption for this valuation. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all tiers. These assumptions were adopted by the Board.

Demographic Assumptions:

Post – Retirement Mortality Rates:

Healthy:

For General members and all beneficiaries: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and females.

For Safety members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, with no setback for males and set back two years for females.

Disabled:

For General members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set forward seven years for males and set forward four years for females.

For Safety members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set forward six years for males and set forward three years for females.

The above mortality tables contain a margin of about 10% for General and Safety members and beneficiaries combined, based on actual to expected deaths, as a provision appropriate to reasonably reflect future mortality improvement, based on a review of the mortality experience as of the measurement date.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Employee Contribution Rates: For General members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and females, weighted 30% male and 70% female.

For Safety members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, with no setback for males and set back two years for females, weighted 75% male and 25% female.

Optional Forms of Benefit:

Service Retirement and All Beneficiaries

General members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and females, weighted 30% male and 70% female.

General beneficiaries: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and females, weighted 70% male and 30% female.

Safety members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, with no setback for males and set back two years for females, weighted 75% male and 25% female.

Safety beneficiaries: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and females, weighted 25% male and 75% female.

Disability Retirement

General members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set forward seven years for males and set forward four years for females, weighted 30% male and 70% female.

Safety members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set forward six years for males and set forward three years for females, weighted 75% male and 25% female.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

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	0.07	0.04
40	0.10	0.06	0.10	0.06
45	0.13	0.10	0.14	0.09
50	0.19	0.15	0.20	0.14
55	0.30	0.22	0.34	0.21
60	0.53	0.37	0.59	0.33
65	0.90	0.68	1.00	0.60

All pre-retirement deaths are assumed to be non-service connected.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Termination Rates Before Retirement (continued):

Age	Rate (%)	
	Disability	
	General⁽¹⁾	Safety⁽²⁾
20	0.00	0.00
25	0.01	0.03
30	0.03	0.23
35	0.08	0.41
40	0.13	0.48
45	0.21	0.65
50	0.31	1.35
55	0.38	1.90
60	0.43	2.15

⁽¹⁾ 60% of General disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected disabilities.

⁽²⁾ 100% of Safety disabilities are assumed to be service connected disabilities.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Termination Rates Before Retirement (continued):

Rate (%)		
Withdrawal (< 5 Years of Service) ⁽¹⁾		
Years of Service	General	Safety
0	10.00	5.00
1	9.00	4.00
2	7.00	3.00
3	6.00	2.00
4	5.00	1.00
Withdrawal (5+ Years of Service) ⁽²⁾		
Age	General	Safety
20	5.00	2.00
25	5.00	2.00
30	5.00	1.70
35	4.40	1.20
40	3.40	1.00
45	2.70	1.00
50	2.50	1.00
55	2.50	1.00
60	2.50	0.40

⁽¹⁾ 60% of all terminated members will choose a refund of contributions and 40% will choose a deferred vested benefit.

⁽²⁾ 40% of all terminated members will choose a refund of contributions and 60% will choose a deferred vested benefit. No termination is assumed after a member is eligible for retirement.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Retirement Rates:

Age	Rate (%)							
	General Tier 1	General Tier 2	General Tier 3	General Tier 4	Safety Tier 1 ⁽¹⁾	Safety Tier 2, 2D ⁽¹⁾	Safety Tier 2C ⁽¹⁾	Safety Tier 4
50	4.00	2.00	6.00	0.00	35.00	15.00	4.00	4.00
51	4.00	2.00	3.00	0.00	30.00	15.00	2.00	2.00
52	4.00	2.00	5.00	4.00	25.00	15.00	2.00	2.00
53	4.00	2.00	6.00	1.50	35.00	15.00	3.00	3.00
54	4.00	2.00	6.00	1.50	45.00	15.00	6.00	6.00
55	7.00	2.00	12.00	2.50	45.00	15.00	10.00	10.00
56	9.00	3.00	13.00	2.50	45.00	20.00	12.00	12.00
57	12.00	4.00	13.00	3.50	45.00	25.00	20.00	20.00
58	12.00	4.00	14.00	4.50	45.00	25.00	10.00	10.00
59	16.00	5.00	16.00	4.50	45.00	25.00	15.00	15.00
60	24.00	6.00	21.00	4.50	100.00	30.00	60.00	60.00
61	24.00	9.00	20.00	7.50	100.00	30.00	60.00	60.00
62	40.00	18.00	30.00	19.00	100.00	30.00	60.00	60.00
63	35.00	18.00	25.00	15.00	100.00	30.00	60.00	60.00
64	35.00	20.00	25.00	17.00	100.00	100.00	100.00	100.00
65	35.00	25.00	30.00	21.00	100.00	100.00	100.00	100.00
66	35.00	25.00	25.00	20.00	100.00	100.00	100.00	100.00
67	30.00	25.00	25.00	20.00	100.00	100.00	100.00	100.00
68	25.00	30.00	25.00	30.00	100.00	100.00	100.00	100.00
69	35.00	35.00	50.00	35.00	100.00	100.00	100.00	100.00
70	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

⁽¹⁾ Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Retirement Age and Benefit for Deferred Vested Members:

For deferred vested members, we make the following retirement assumption:

General Age:	60
Safety Age:	56

For future deferred vested members who terminate with less than five years of service and are not vested, we assume that they will retire at age 70 for both General and Safety if they decide to leave their contributions on deposit.

We assume that 30% of future General and 60% of future Safety deferred vested members will continue to work for a reciprocal employer. For reciprocals, we assume 4.15% and 4.45% compensation increases per annum for General and Safety, respectively.

Future Benefit Accruals:

1.0 year of service per year of employment plus 0.005 year of additional service to anticipate conversion of unused sick leave for each year of employment.

Unknown Data for Members:

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Inclusion of Deferred Vested Members:

All deferred vested members are included in the valuation.

Percent Married:

70% of male members; 50% of female members.

Age of Spouse:

Female (or male) spouses are 3 years younger (or older) than their spouses.

Economic Assumptions:

Net Investment Return:

7.60%

Employee Contribution Crediting Rate:

7.60%, compounded semi-annually.

Consumer Price Index:

Increase of 3.25% per year, retiree COLA increases due to CPI subject to a 3% maximum change per year for General Tier 1, General Tier 3, and Safety Tier 1, and 2% maximum change per year for General Tier 2, General Tier 4, Safety Tier 2, Safety Tier 2C, Safety Tier 2D, and Safety Tier 4.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

Salary Increases:

Annual Rate of Compensation Increase (%)		
Inflation: 3.25%; an additional 0.50% “across the board” salary increases (other than inflation); plus the following Merit and Promotional increases based on service.		
Service	General	Safety
0-1	3.70%	6.70%
1-2	3.70	6.70
2-3	3.20	5.90
3-4	2.10	3.80
4-5	1.70	3.30
5-6	1.40	2.50
6-7	1.30	1.40
7-8	1.10	0.90
8-9	0.70	0.80
9-10	0.60	0.80
10-11	0.50	0.70
11+	0.40	0.70

Actuarial Value of Assets:

The Actuarial Value of Assets is determined by phasing in any difference between actual and expected market return over 10 six-month interest crediting periods.

Valuation Value of Assets:

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

Actuarial Cost Method:

Entry Age Actuarial Cost Method. Entry Age is the age at the member’s hire date. Actuarial Accrued Liability is calculated on an individual basis and is based on costs allocated as a level percentage of compensation. The Normal Cost is also calculated on an individual basis where the Entry Age Normal Cost is calculated as the sum of the individual Normal Costs.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

- 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 non-active or retired member.
 - Dividing the sum of the above amounts by the total number of active employee, non-active and retired members.

Terminal Pay Assumptions: Additional pay elements are expected to be received during a member's final average earnings period. The percentages, added to the final year salary, used in this valuation are:

	<u>Service Retirement</u>	<u>Disability Retirement</u>
General Tier 1	8.0%	6.5%
General Tier 2	3.0%	1.4%
General Tier 3	8.0%	6.5%
General Tier 4	N/A	N/A
Safety Tier 1	8.5%	6.4%
Safety Tier 2	4.0%	2.1%
Safety Tier 2C	4.0%	2.1%
Safety Tier 2D	4.0%	2.1%
Safety Tier 4	N/A	N/A

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX A

**Calculation of Discount Rate as of December 31, 2015
Projection of Pension Plan's Fiduciary Net Position (\$ 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	5,912	308	401	14	49	5,853
2016	5,853	305	485	14	435	6,095
2017	6,095	311	509	15	452	6,334
2018	6,334	316	535	15	470	6,569
2019	6,569	331	561	16	487	6,811
2020	6,811	349	588	16	505	7,060
2021	7,060	360	615	17	523	7,312
2022	7,312	368	644	18	541	7,559
2023	7,559	376	673	18	559	7,802
2024	7,802	384	702	19	577	8,042
2039	9,584	248	1,048	23	692	9,454
2040	9,454	224	1,057	23	681	9,279
2041	9,279	214	1,063	22	667	9,075
2042	9,075	214	1,065	22	651	8,853
2043	8,853	213	1,064	21	634	8,614
2083	89	29	58	0 *	5	64
2084	64	25	48	0 *	4	45
2085	45	22	39	0 *	3	31
2086	31	19	31	0 *	2	20
2087	20	17	25	0 *	1	13
2102	2	1	1	0 *	0 *	1
2103	1	0 *	1	0 *	0 *	1
2104	1	0 *	1	0 *	0 *	1
2127	0 *	0 *	0 *	0	0 *	0 *
2128	0 *	0 *	0 *	0	0 *	0 *
2129	0 *	0 *	0	0	0 *	0 *
2129	Discounted Value:	0 *				

* Less than \$1 M, when rounded.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX A (continued)

Calculation of Discount Rate as of December 31, 2015 Projection of Pension Plan's Fiduciary Net Position (\$ in millions)

Notes:

- (1) Amounts may not total exactly due to rounding.
- (2) Amounts shown in the year beginning January 1, 2015 row are actual amounts, based on the financial statements provided by ACERA.
- (3) Years 2025-2038, 2044-2082, 2088-2101, and 2105-2126 have been omitted from this table.
- (4) Column (a): Except for the "discounted value" shown for 2129, 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 employee and employer normal cost contributions based on closed group projections (based on covered active members as of November 30, 2014); plus employer contributions to the unfunded actuarial accrued liability; plus employer contributions to fund each year's annual administrative expenses as well as future allocations of excess earnings to the SRBR under ACERA's funding policy, both reflecting a 20-year amortization schedule. Contributions are assumed to occur halfway through the year, on average.
- (6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of November 30, 2014. The projected benefit payments reflect the cost of living increase assumption of 3.00% per annum for Tiers 1 and 3, and 2.00% per annum for Tiers 2 and 4. In addition, an amount equal to 0.75% of the beginning-of-year market value has been included to reflect the approximated outflow of future allocations to the SRBR. (This outflow has an estimated present value of \$0.77 billion.) Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 31.b.(1)(e) of GASB Statement No. 67, the long-term expected rate of return on Plan investments of 7.60% per annum was applied to all periods of projected benefit payments to determine the discount rate.
- (7) Column (d): Projected administrative expenses are calculated as approximately 0.24% of the beginning plan fiduciary net position amount. The 0.24% portion was based on the actual fiscal year 2015 administrative expenses as a percentage of the beginning plan fiduciary net position amount 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 7.60% 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 7.60% 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.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX B

Glossary of Terms

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

Active employees

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

Actual contributions

Cash contributions recognized as additions to a pension plan's Fiduciary Net Position.

Actuarial present value of projected benefit payments

Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.

Actuarial valuation

The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.

Actuarial valuation date

The date as of which an actuarial valuation is performed.

Actuarially determined contribution

A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

Ad hoc cost-of-living adjustments (ad hoc COLAs)

Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

Ad hoc postemployment benefit changes

Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.

Agent employer

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

Agent multiple-employer defined benefit pension plan (agent pension plan)

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

Allocated insurance contract

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

Automatic cost-of-living adjustments (automatic COLAs)

Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Automatic postemployment benefit changes

Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Closed period

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

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

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.

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-employee payroll

The payroll of employees that are provided with pensions through the pension plan.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

Deferred retirement option program (DROP)

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

Defined benefit pension plans

Pension plans that are used to provide defined benefit pensions.

Defined benefit pensions

Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)

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 Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

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 Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

Net Pension Liability

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

Nonemployer contributing entities

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

Other postemployment benefits

All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.

Pension plans

Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed, and benefits are paid as they come due.

Pensions

Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.

Plan members

Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).

Postemployment

The period after employment.

Postemployment benefit changes

Adjustments to the pension of an inactive employee.

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

Postemployment healthcare benefits

Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.

Projected benefit payments

All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.

Public employee retirement association

A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.

Real rate of return

The rate of return on an investment after adjustment to eliminate inflation.

Service costs

The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.

Single employer

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

Single-employer defined benefit pension plan (single-employer pension plan)

A defined benefit pension plan that is used to provide pensions to employees of only one employer.

Special funding situations

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

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

SECTION 3: Actuarial Assumptions and Methods and Appendices for the Alameda County Employees' Retirement Association

APPENDIX B (continued)

Glossary of Terms

Termination benefits

Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.

Total Pension Liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 68.

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