



**AGENDA**

**RETIREMENT BOARD MEETING**

REGULAR MEETING  
September 13, 2017  
9:00 a.m.

Retirement Board Conference Room  
The Willows Office Park  
1355 Willow Way, Suite 221  
Concord, California

THE RETIREMENT BOARD MAY DISCUSS AND TAKE ACTION ON THE FOLLOWING:

1. Pledge of Allegiance.
2. Accept comments from the public.
3. Approve minutes from the July 12, 2017 meeting.
4. Routine items for September 13, 2017.
  - a. Approve certifications of membership.
  - b. Approve service and disability allowances.
  - c. Accept disability applications and authorize subpoenas as required.
  - d. Approve death benefits.
  - e. Accept Asset Allocation Report.

***CLOSED SESSION***

5. The Board will go into closed session pursuant to Govt. Code Section 54957 to consider recommendations from the Medical Advisor and/or staff regarding the following disability retirement applications:

<u>Member</u>	<u>Type Sought</u>	<u>Recommendation</u>
a. Marilyn Gouvaia	Service Connected	Service Connected
b. Frank Gomez	Service Connected	Service Connected
c. Angela Parga	Non-Service Connected	Non-Service Connected

***OPEN SESSION***

6. Consider and take possible action to accept the GASB 68 report from Segal Consulting.
7. Consider and take possible action regarding non-service connected disability retirement allowance of deceased member Paul Crouch.
8. Presentation of Semi-Annual Disability Retirement Report.

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

9. Consider authorizing the attendance of Board:
  - a. 2017 Fall Conference, CII, September 13-15, 2017, San Diego, CA.
  - b. Roundtable for Consultants & Institutional Investors, Institutional Investor, October 4-6, 2017, Chicago, IL.
  - c. 2017 Fall Conference, CRCEA, October 23-25, 2017, Emeryville, CA. (Note: Conflict with meeting)
  - d. 31<sup>st</sup> Annual Northern CA Public Retirement Seminar, Public Retirement Journal, October 26, 2017, Sacramento, CA.
  - e. StepStone Investor Dinner & Conference, October 24-25, 2017, New York, NY. (Note: Conflict with meeting)
  - f. Annual Limited Partners Meeting, The Carpenter Community Bancfund, October 26, 2017, New York, NY.
  
10. Miscellaneous
  - a. Staff Report
  - b. Outside Professionals' Report
  - c. Trustees' comments

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.



Meeting Date  
**09/13/17**  
Agenda Item  
**#3**

MINUTES

RETIREMENT BOARD MEETING MINUTES

REGULAR MEETING  
July 12, 2017  
9:00 a.m.

Retirement Board Conference Room  
The Willows Office Park  
1355 Willow Way, Suite 221  
Concord, California

Present: Candace Andersen, Scott Gordon, Jerry Holcombe, Louie Kroll, Jay Kwon, David MacDonald, William Pigeon, Gabe Rodrigues, Todd Smithey, Jerry Telles and Rusty Watts

Absent: John Phillips

Staff: Gail Strohl, Chief Executive Officer; Christina Dunn, Deputy Chief Executive Officer; Timothy Price, Chief Investment Officer; Wrally Dutkiewicz, Compliance Officer; and Tim Hoppe, Retirement Services Manager

Outside Professional Support: Harvey Leiderman      Representing: Reed Smith LLP

**1. Pledge of Allegiance**

Kwon led all in the *Pledge of Allegiance*.

**2. Accept comments from the public**

No member of the public offered comment.

**3. Board Reorganization**

It was M/S/C to nominate Todd Smithey as Board Chairperson, Scott Gordon as Board Vice-Chairperson and David MacDonald as Board Secretary. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Rodrigues, Smithey, Telles and Watts)

**4. Routine Items**

It was M/S/C to approve the routine items of the July 12, 2017 meeting. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Rodrigues, Smithey, Telles and Watts)

**CLOSED SESSION**

The Board moved into closed session pursuant to Govt. Code Section 54956.9(d)(1).

The Board moved into open session.

**5.** There was no reportable action related to Govt. Code Section 54956.9(d)(1).

Pigeon was present for subsequent discussion and voting.

**6. Consider and take possible action to adopt Board of Retirement Resolution 2017-5 to initiate referendum procedures in accordance with the requirement of Section 218(d) of the Social Security Act**

Dunn provided background on the Social Security Administration 218 Agreement noting CCCERA employees were previously covered under the Agreement as County employees. CCCERA recently received notification that the Section 218 Agreement with the County does not meet the coverage continuation rules to cover employees of CCCERA. In order to continue to participate in Social Security CCCERA must initiate a referendum.

It was M/S/C to adopt Board of Retirement Resolution 2017-5 to initiate referendum procedures in accordance with the requirement of Section 218(d) of the Social Security Act. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)

**7. Consider and take possible action to adopt Board of Retirement Resolution 2017-6, Investment Asset Allocation Targets and Ranges**

Price reported this Resolution is operational in nature and will allow staff to refresh the liquidity program as well as reflect the current size of the program. He noted there is a correction in the second paragraph, third line of the Resolution, changing the wording “holding or sale or any form” to “holding or sale of any form.”

It was M/S/C to adopt Board of Retirement Resolution 2017-6, Investment Asset Allocation Targets and Ranges. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)

**8. Presentation of Annual Funding Plan**

Price reported there was an error in the total on page 2 of his memo and distributed a revised memo. He stated based on the actuarial projections, \$500m is needed to top up the liquidity program to fund the projected benefit payments for the period July 2020 to June 2021. He stated this is the recommendation for the 2017 cycle and will be revisited on an annual basis.

**9. Presentation of liquidity report for May 2017**

Price reported the liquidity program is running ahead of expectations and generating more cash than needed. He stated he will not be making any adjustments to the model until we have at least one full year of data.

**10. Consider and take possible action to cancel the July 26, 2017 meeting**

Strohl asked the Board to consider cancelling the July 26, 2017 meeting.

It was M/S/C to cancel the July 26, 2017 meeting. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)

**11. Consider authorizing the attendance of Board and/or staff:**

- a. It was M/S/C to authorize the attendance of 4 Board members and 2 staff members at the 2017 Public Funds Forum, Robbins Geller Rudman & Dowd, September 5-7, 2017, San Diego, CA. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)

- b. It was **M/S/C** to authorize the attendance of 4 Board members and 1 staff member at the 2017 Public Pension Funding Forum, NCPERS, September 10-12, 2017, San Francisco, CA. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)
- c. There was no reportable action on this item.
- d. It was **M/S/C** to authorize the attendance of 2 Board members at the Advanced Investment Management, IFEBP, September 25-28, 2017, Philadelphia, PA. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)
- e. It was **M/S/C** to authorize the attendance of 2 Board members at the 2017 Public Safety Employees Pension & Benefits Conference, NCPERS, October 1-4, 2017, San Antonio, TX. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)

**12. Miscellaneous**

(a) Staff Report –

Strohl reported staff development day is Thursday, July 13 and this year's theme is wellness; CCCERA is moving toward having virtualized servers which will ultimately reduce our costs and provide better data security; and, we are in the process of moving our hot site from San Diego to Roseville.

(b) Outside Professionals' Report -

Leiderman gave an update on the Peter J. Nowicki v. CCCERA, et al. lawsuit stating the case has been dismissed by the Federal Court in San Francisco in favor of CCCERA and the Board on all counts.

(c) Trustees' comments –

Smithey welcomed new Trustee Jay Kwon to the Board as an appointed alternate; there is a vacancy on the Audit Committee and to contact him if interested in serving on the Committee; and, he would like the Audit Committee composition on the next Board meeting agenda.

Macdonald reported on the NASP Conference in Los Angeles and felt it was a great conference. The emphasis was on diversity in investing.

Gordon reported he also attended the NASP Conference and felt it was very interesting.

It was **M/S/C** to adjourn the meeting. (Yes: Andersen, Gordon, Holcombe, Kwon, MacDonald, Pigeon, Smithey, Telles and Watts)

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Todd Smithey, Chairman

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David MacDonald, Secretary

BOARD OF RETIREMENT

Items requiring Board Action

**A. Certifications of Membership – see list and classification forms.**

**B. Service and Disability Retirement Allowances:**

<u>Name</u>	<u>Number</u>	<u>Effective Date</u>	<u>Option Type</u>	<u>Group</u>	<u>Selected</u>
Acosta, Daniel	69344	06/30/17	SR	Tier III	Unmod
Brown, Carol	54523	06/01/17	SR	Tier II and III	Unmod
Butler, Adele	70563	02/21/17	SR	Tier III	Unmod
Carino-Golphin, Tracy	66676	07/01/17	SR	Tier III	Option 1
Dinkins, Marcus	55480	07/07/17	SR	Safety A	Unmod
Dizon, Yolanda	69668	06/15/17	SR	Tier III	Unmod
Dovel, Holly	48688	06/12/17	SR	Tier II	Unmod
Johnson, Phyllis	40898	06/01/17	SR	Tier II and III	Unmod
Lai, Ka-Siu	56990	06/14/17	SR	Tier II and III	Unmod
Martinez, Elizabeth	70081	10/03/16	SR	Tier III	Option 1
Mejia, Victoria	66093	07/01/17	SR	Tier II and III	Unmod
Nunez, Oralia	69736	06/30/17	SR	Tier III	Unmod
Perez, Graciela	62449	08/18/16	SCD	Safety A	Unmod
Perez, Luz	52790	07/01/17	SR	Tier II and III	Unmod
Schultz, Kristie	71797	06/07/17	SR	Safety A	Unmod
Simmons, Steven	D7830	07/05/17	SR	Tier I and Safety A	Unmod
Vinluan, Agnes	55206	06/21/17	SR	Tier II and III	Unmod
Watson, Rhoda	56095	07/01/17	SR	Tier III	Unmod
Williams, Chandra	52032	03/31/17	SR	Tier III	Unmod

**C.**

**Disability Retirement Applications: The Board's Hearing Officer is hereby authorized to issue subpoenas in the following cases involving disability applications:**

<u>Name</u>	<u>Number</u>	<u>Filed</u>	<u>Type</u>
None			

**KEY:**

**Group**  
 I = Tier I  
 II = Tier II  
 III = Tier III  
 S/A = Safety Tier A  
 S/C = Safety Tier C

**Option**  
 \* = County Advance  
 Selected w/option

**Type**  
 NSP = Non-Specified  
 SCD = Service Connected Disability  
 SR = Service Retirement  
 NSCD = Non-Service Connected Disability

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

BOARD OF RETIREMENT

**D.**

<b><i>Deaths:</i></b> <u>Name</u>	<u>Date of Death</u>	<u>Employer as of Date of Death</u>
Audrey-Quinn, Catherine	07/10/17	Contra Costa County
Bell, Rosemarie	08/14/17	Contra Costa County
Chrisman, Delores	07/28/17	Beneficiary
Dunham, Stephanie	08/05/17	Contra Costa County
Ferguson, Sharon	08/11/17	Contra Costa County
Gaige, Franklin	08/12/17	Contra Costa County
Giordana, Nunzio	08/02/17	Moraga/Orinda Fire Protection District
Helm, Gordon	09/05/17	Contra Costa County
Helms, Jonathan	08/30/17	Contra Costa County Fire Protection District
Johnson, Ruth	08/30/17	Contra Costa County
Lambert, Marjorie	07/14/17	Contra Costa County
Ludwig, Donald	07/13/17	Contra Costa County
Mavity, Isabel	07/21/17	Contra Costa County
O'Neill, Faye	08/15/17	Beneficiary
Price, Gloria	07/15/17	Contra Costa County
Sanders, Gwendolyn	08/06/17	Contra Costa County
Shevchenko, Suzanne	07/28/17	Beneficiary
Stockwell, Dorothy	08/12/17	Beneficiary
Toby, Joseph	08/04/17	Beneficiary
Veien, Duane	04/15/17	Contra Costa County

**KEY:**

**Group**  
**I** = Tier I  
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**III** = Tier III  
 S/A = Safety Tier A  
 S/C = Safety Tier C

**Option**  
 \* = County Advance  
 Selected w/option

**Type**  
 NSP = Non-Specified  
 SCD = Service Connected Disability  
 SR = Service Retirement  
 NSCD = Non-Service Connected Disability

## CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Abreu, Chelsea L.	84895	P5.2	7/1/2017	Contra Costa County
Adamchik, Sarah E.	D9500	III	07/01/17	Contra Costa County
Albert, Margot D.	84862	P5.2	07/01/17	Contra Costa County
Allen, Pamela K.C.	84835	P5.2	07/01/17	Contra Costa County
Anderson, Yvonne	84915	P5.2	07/01/17	Contra Costa County
Atalla-Mei, Alicia S.	84974	P5.2	07/01/17	Contra Costa County
Back, Joshua D.	84869	P5.2	07/01/17	Contra Costa County
Bala, Shashi	84833	P5.2	07/01/17	Contra Costa County
Blank, Rafael	84866	P5.2	07/01/17	Contra Costa County
Blount, Caryl L.	84940	P5.2	07/01/17	Contra Costa County
Boag, Lauren C.	85018	P5.2	07/01/17	Contra Costa County
Borcena, Cynthia M.	84840	P5.2	07/01/17	Contra Costa County
Bourne, Gerald W.	84783	P5.2	07/01/17	Contra Costa County
Boyce, Tanya M.	D9500	P5.3	07/01/17	Superior Courts
Bruggeman, Jennifer C.	84752	P5.2	07/01/17	Contra Costa County
Caballero, Elizabeth A.	84945	P5.2	07/01/17	Contra Costa County
Carino, Evangeline G.	76927	P5.2	07/01/17	Contra Costa County
Chastain, Eric B.	84965	P5.2	07/01/17	Contra Costa County
Chen, Fanny D. H.	84552	P5.2	07/01/17	Contra Costa County
Chidi, Acacia H.	81978	P5.2	07/01/17	Contra Costa County
Chin, Tiffany H.	84848	P5.2	07/01/17	Contra Costa County
Chirip, Maria M.	84827	P5.2	07/01/17	Contra Costa County
Chiu, Allen H.	84837	P5.2	07/01/17	Contra Costa County
Cochnauer, Derek L.	72478	S/D	07/01/17	Rodeo-Hercules Fire Protection District
Coleman, Lavetta J.	75355	III	07/01/17	Contra Costa County
Cones, Regina A.	65603	III	07/01/17	Contra Costa County
Connor, Asia S.	84902	P5.2	07/01/17	Contra Costa County
Critchlow, Kevin S.	84860	P5.2	07/01/17	Contra Costa County
Curran, Brittany C.	84944	P5.2	07/01/17	Contra Costa County
Daodu, Oluremilekun D.	82729	P5.2	07/01/17	Contra Costa County
Darone, Natalie M.	84951	P5.2	07/01/17	Contra Costa County
Dewane, Katherine A.	84957	P5.2	07/01/17	Contra Costa County
Domeney, Meghan I.	84901	P5.2	07/01/17	Contra Costa County
Fan, Jia Q.	83275	P5.2	07/01/17	Contra Costa County
Fitch, Jason W.	D3406	P4.3	07/01/17	Central Contra Costa Sanitary District
Garcia, Isa M.	83330	P5.2	07/01/17	Contra Costa County
Gatdula, Justine A. Q.	84950	P5.2	07/01/17	Contra Costa County
Greiner, Matthew S.	84882	S/D	07/01/17	Rodeo-Hercules Fire Protection District
Guerin, William A.	84864	P5.2	07/01/17	Contra Costa County
Haddad, Wafa N.	78525	P5.2	07/01/17	Contra Costa County

**Key:**

<b>I = Tier I</b>	<b>P4.2 = PEPRA Tier 4 (2% COLA)</b>	<b>S/A = Safety Tier A</b>
<b>II = Tier II</b>	<b>P4.3 = PEPRA Tier 4 (3% COLA)</b>	<b>S/C = Safety Tier C</b>
<b>III = Tier III</b>	<b>P5.2 = PEPRA Tier 5 (2% COLA)</b>	<b>S/D = Safety Tier D</b>
	<b>P5.3 = PEPRA Tier 5 (3% COLA)</b>	<b>S/E = Safety Tier E</b>



## CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Hamilton, Julia E.	84987	P5.2	07/01/17	Contra Costa County
Harden, Lisa J.	84830	P5.2	07/01/17	Contra Costa County
Harlos, Rachel K.S.	84858	P5.2	07/01/17	Contra Costa County
Harper, Jessica A.	84942	P5.2	07/01/17	Contra Costa County
Hartung, Claire J.	84865	P5.2	07/01/17	Contra Costa County
Heher, Kristen L.	84973	P5.2	07/01/17	Contra Costa County
Hester, Lynn D.	D9500	P5.3	07/01/17	Superior Courts
Hirt, Megan B.	85002	P5.2	07/01/17	Contra Costa County
Houff, Antoine L.C.	84947	P5.2	07/01/17	Contra Costa County
Hui, Wendy	84849	P5.2	07/01/17	Contra Costa County
Humphrey, Ashley C.	85003	P5.2	07/01/17	Contra Costa County
Igwe, Theresa A.	84711	P5.2	07/01/17	Contra Costa County
Janiszewski, Krzysztof A.	84738	P5.2	07/01/17	Contra Costa County
Jesionek, Adam K.	84859	P5.2	07/01/17	Contra Costa County
Kaur, Harprit	84815	P5.2	07/01/17	Contra Costa County
Kumar, Pardeep	84894	P5.2	07/01/17	Contra Costa County
Ledesma, Femiona M.L.	84829	P5.2	07/01/17	Contra Costa County
Lee, Ryan M.	84828	P5.2	07/01/17	Contra Costa County
Liu, Jessie	84867	P5.2	07/01/17	Contra Costa County
Locke, Zeph	84826	P5.2	07/01/17	Contra Costa County
Lopez, Roger B.	85004	P5.2	07/01/17	Contra Costa County
Luong, Anne H.	84893	P5.2	07/01/17	Contra Costa County
Macaranas, Brian G.	84895	P5.2	07/01/17	Contra Costa County
Magana, Stephany E.	D9500	P5.3	07/01/17	Superior Courts
Markley, Candace C.	84861	P5.2	07/01/17	Contra Costa County
Martin, Ashley A.	85006	P5.2	07/01/17	Contra Costa County
Martin, Sara M.	85007	P5.2	07/01/17	Contra Costa County
Mata, Denise	54330	III	07/01/17	Contra Costa County
McClelland, Daniel R.	84941	P5.2	07/01/17	Contra Costa County
McDonnell, Allison R.	84834	P5.2	07/01/17	Contra Costa County
McEachin, Whitney M.A.	85010	P5.2	07/01/17	Contra Costa County
McGoon, Julianna	85011	P5.2	07/01/17	Contra Costa County
McGrath, Sarah L.	D9500	P5.3	07/01/17	Superior Courts
Montalvo, Magdalena	84916	P5.2	07/01/17	Contra Costa County
Moreno, Marilyn A.	84847	P5.2	07/01/17	Contra Costa County
Murrell, Regina I.	85015	P5.2	07/01/17	Contra Costa County
Myers, Michelle D.	79173	P5.2	07/01/17	Contra Costa County
Nakamura, Jill E.	84900	P5.2	07/01/17	Contra Costa County
Orduna, Victoria C.	80690	P5.2	07/01/17	Contra Costa County
O'Rourke, Abby L.	85014	P5.2	07/01/17	Contra Costa County

**Key:**

<b>I = Tier I</b>	<b>P4.2 = PEPRA Tier 4 (2% COLA)</b>	<b>S/A = Safety Tier A</b>
<b>II = Tier II</b>	<b>P4.3 = PEPRA Tier 4 (3% COLA)</b>	<b>S/C = Safety Tier C</b>
<b>III = Tier III</b>	<b>P5.2 = PEPRA Tier 5 (2% COLA)</b>	<b>S/D = Safety Tier D</b>
	<b>P5.3 = PEPRA Tier 5 (3% COLA)</b>	<b>S/E = Safety Tier E</b>

## CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Osa Idehen, Sebiotini	85005	P5.2	07/01/17	Contra Costa County
Palma Melgar, Karla M.	84499	P5.2	07/01/17	Contra Costa County
Pham, Khai T.	76902	P5.2	07/01/17	Contra Costa County
Phoutrides, Elena K.	84868	P5.2	07/01/17	Contra Costa County
Pierce, Justin A.	84975	P5.2	07/01/17	Contra Costa County
Powers, Celine-Monique	84881	P5.2	07/01/17	Contra Costa County
Reid, Tanaya S.	84988	P5.2	07/01/17	Contra Costa County
Richards, Ariel G.	84986	P5.2	07/01/17	Contra Costa County
Salvador, Katie H.D.	84831	P5.2	07/01/17	Contra Costa County
Schmidt, Megan S.	85012	P5.2	07/01/17	Contra Costa County
Schoenrock, Kelsi L.	84870	P5.2	07/01/17	Contra Costa County
Sevilla, Dianne M.	84838	P5.2	07/01/17	Contra Costa County
Sheffer, Adelia M.	85017	P5.2	07/01/17	Contra Costa County
Shrestha, Jennifer W.	84863	P5.2	07/01/17	Contra Costa County
Simpson, Shelly B.	84983	P5.2	07/01/17	Contra Costa County
Sinclair, Barbara A.	84781	P5.2	07/01/17	Contra Costa County
Sinclair, Stacey K.	84961	P5.2	07/01/17	Contra Costa County
Sokhi, Taranjeet	84984	P5.2	07/01/17	Contra Costa County
Spanbock, Addie M.	85040	P5.2	07/01/17	Contra Costa County
Stanziale, Jennifer A.	84852	P5.2	07/01/17	Contra Costa County
Tong, Jennifer R.	84939	P5.2	07/01/17	Contra Costa County
Tonumailau, Pulemalie S.	84841	P5.2	07/01/17	Contra Costa County
Trujillo, Juny J.	84842	P5.2	07/01/17	Contra Costa County
Valerga, Janae L.	76488	P5.2	07/01/17	Contra Costa County
Vanegas Sosa, Vanessa L.	84946	P5.2	07/01/17	Contra Costa County
Walker, Margueriette S.	84905	P5.2	07/01/17	Contra Costa County
Wallace, Daniel L.	84949	P5.2	07/01/17	Contra Costa County
Webb, Kathryn R.	85013	P5.2	07/01/17	Contra Costa County
Willis, Debi M.	84948	P5.2	07/01/17	Contra Costa County
Ylagan, Annie Minviluz K.	83686	P5.2	07/01/17	Contra Costa County
Zafir-Hampton, Sarah M.	77516	P5.2	07/01/17	Contra Costa County

**Key:**

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<b>II = Tier II</b>	<b>P4.3 = PEPRA Tier 4 (3% COLA)</b>	<b>S/C = Safety Tier C</b>
<b>III = Tier III</b>	<b>P5.2 = PEPRA Tier 5 (2% COLA)</b>	<b>S/D = Safety Tier D</b>
	<b>P5.3 = PEPRA Tier 5 (3% COLA)</b>	<b>S/E = Safety Tier E</b>

## TIER CHANGES

<i>Name</i>	<i>Employee Number</i>	<i>Old Tier</i>	<i>New Tier</i>	<i>Effective Date</i>	<i>Employer</i>	<i>Reason for Change</i>
Fabie, Erin R.	84539	P5.2	III	04/01/17	Contra Costa County	Reciprocity
Martinez, Andrea B.	84748	P5.2	III	06/01/17	Contra Costa County	Reciprocity
Moghaddam, Amannah S.	84325	P5.2	III	03/01/17	Contra Costa County	Reciprocity

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<b>II = Tier II</b>	<b>P4.3 = PEPRA Tier 4 (3% COLA)</b>	<b>S/C = Safety Tier C</b>
<b>III = Tier III</b>	<b>P5.2 = PEPRA Tier 5 (2% COLA)</b>	<b>S/D = Safety Tier D</b>
	<b>P5.3 = PEPRA Tier 5 (3% COLA)</b>	<b>S/E = Safety Tier E</b>

Contra Costa County Employees' Retirement Association  
Asset Allocation as of July 31, 2017

	Market Value	Percentage of Total Fund	Phase 2b Target Percentage	Phase 2b Over/(Under)	Long Term Target	Long Term Over/(Under)
<b>Liquidity</b>						
Insight	661,073,235	8.1%	12.6%	-4.5%		
Sit	491,463,652	6.0%	6.2%	-0.2%		
Dimensional Fund Advisors	470,834,366	5.8%	6.2%	-0.4%		
Goldman Sachs	54,011	0.0%	0.0%	0.0%		
Lazard	1,029,704	0.0%	0.0%	0.0%		
<b>Total Liquidity</b>	<b>1,624,454,968</b>	<b>19.8%</b>	<b>25.0%</b>	<b>-5.2%</b>	<b>27.0%</b>	<b>-7.2%</b>
		<b>Range</b>				
		<b>16% - 28%</b>				
<b>Growth</b>						
<b>Domestic Equity</b>						
Boston Partners	368,267,246	4.5%	4.5%	-0.0%		
Jackson Square	372,792,989	4.6%	4.5%	0.1%		
BlackRock Index Fund	109,889,246	1.3%	1.3%	0.0%		
Emerald Advisors	252,548,680	3.1%	3.0%	0.1%		
Intech (Core)	16,436,082	0.2%	0.0%	0.2%		
PIMCO Stocks+	9,639,450	0.1%	0.0%	0.1%		
Ceredex	240,310,864	2.9%	3.0%	-0.1%		
<b>Total Domestic Equity</b>	<b>1,369,884,557</b>	<b>16.7%</b>	<b>16.3%</b>	<b>0.4%</b>	<b>6.0%</b>	<b>10.7%</b>
<b>Global &amp; International Equity</b>						
Pyrford (BMO)	439,747,694	5.4%	5.2%	0.2%	6.0%	-0.6%
William Blair	455,712,718	5.6%	5.2%	0.4%	6.0%	-0.4%
JPMorgan Global Opportunities	219,748	0.0%	0.0%	0.0%		
First Eagle	349,345,425	4.3%	4.3%	-0.0%		
Artisan Global Opportunities	357,845,375	4.4%	4.3%	0.1%		
Intech (Global Low Volatility)	953,546	0.0%	0.0%	0.0%		
PIMCO/RAE Emerging Markets	322,123,052	3.9%	4.2%	-0.3%	5.0%	-1.1%
TT Emerging Markets	320,159,019	3.9%	4.2%	-0.3%	5.0%	-1.1%
<b>Total Global &amp; International Equity</b>	<b>2,246,106,577</b>	<b>27.4%</b>	<b>27.4%</b>	<b>0.0%</b>	<b>22.0%</b>	<b>5.4%</b>
<b>Private Equity</b>	817,480,000	10.0%	9.6%	0.4%	12.0%	-2.0%
<b>Private Credit</b>	161,789,000	2.0%	2.4%	-0.4%	12.0%	-10.0%
<b>Real Estate - Value Add</b>	161,870,000	2.0%	4.0%	-2.0%	4.0%	-2.0%
<b>Real Estate - Opportunistic &amp; Distressed</b>	465,271,000	5.7%	4.0%	1.7%	4.0%	1.7%
<b>Real Estate - REIT (Adelante)</b>	67,303,042	0.8%	1.0%	-0.2%	1.0%	-0.2%
<b>High Yield (Allianz)</b>	365,055,315	4.5%	4.3%	0.2%		
<b>Total Other Growth Assets</b>	<b>2,038,768,357</b>	<b>24.9%</b>	<b>25.3%</b>	<b>-0.4%</b>	<b>33.0%</b>	<b>-8.1%</b>
<b>Total Growth Assets</b>	<b>5,654,759,491</b>	<b>69.1%</b>	<b>69.0%</b>	<b>0.1%</b>	<b>61.0%</b>	<b>8.1%</b>
		<b>Range</b>				
		<b>60% - 80%</b>				
<b>Risk Diversifying</b>						
AFL-CIO	278,455,356	3.4%	3.5%	-0.1%	3.0%	0.4%
Diversifying Strategies (Wellington)	187,689,903	2.3%	2.5%	-0.2%	9.0%	-6.7%
<b>Total Risk Diversifying</b>	<b>466,145,259</b>	<b>5.7%</b>	<b>6.0%</b>	<b>-0.3%</b>	<b>12.0%</b>	<b>-6.3%</b>
		<b>Range</b>				
		<b>0% - 10%</b>				
<b>Cash and Overlay</b>						
Overlay (Parametric)	22,273,918	0.3%	0.0%	0.3%		
Cash	418,212,359	5.1%	0.0%	5.1%	0.0%	5.1%
<b>Total Cash and Overlay</b>	<b>440,486,277</b>	<b>5.4%</b>	<b>0.0%</b>	<b>5.4%</b>	<b>0.0%</b>	<b>5.4%</b>
<b>Total Fund</b>	<b>8,185,845,995</b>	<b>100%</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>0%</b>

\*Phase 2b targets and ranges reflect Phase 2b asset allocation targets accepted by the Board on July 12, 2017 (BOR Resolution 2017-6)

Private Market Investments  
As of July 31, 2017

REAL ESTATE - Value Add	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
Invesco IREF I	10/22/03	04/30/11	3rd 1 YR	GP	4/30/2014	50,000,000	91,000	0.00%	
Invesco IREF II	05/30/07	12/31/15				85,000,000	457,000	0.01%	
Invesco IREF III	08/01/13	08/01/20				35,000,000	15,438,000	0.19%	11,634,000
Invesco IREF IV	12/01/14	12/01/21				35,000,000	21,788,000	0.27%	3,190,000
Long Wharf FREG III	03/30/07	12/30/15				75,000,000	2,465,000	0.03%	
Long Wharf FREG IV	08/14/13	09/30/21				25,000,000	19,253,000	0.24%	
Long Wharf FREG V	10/31/16	09/30/24				50,000,000	15,331,000	0.19%	33,355,000
LaSalle Income & Growth Fund VI	01/31/12	01/31/19				75,000,000	44,216,000	0.54%	3,946,000
LaSalle Income & Growth Fund VII	10/31/16	09/30/24				75,000,000	42,831,000	0.52%	32,234,000
<b>Outstanding Commitments</b>						<b>505,000,000</b>	<b>161,870,000</b>	<b>1.98%</b>	<b>84,359,000</b>
<b>Total</b>							<b>84,359,000</b>		<b>246,229,000</b>

REAL ESTATE - Opportunistic & Distressed	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
DJ Real Estate Capital Partners, L.P. III	06/30/05	06/30/14	1st 2 YR	GP	6/30/2016	75,000,000	30,206,000	0.37%	
DJ Real Estate Capital Partners, L.P. IV	12/31/07	09/30/16				100,000,000	87,039,000	1.06%	
DJ Real Estate Capital Partners, L.P. V	07/31/13	12/31/22				75,000,000	33,017,000	0.40%	39,072,000
Oaktree Real Estate Opportunities Fund V	12/15/11	12/31/16				50,000,000	12,689,000	0.16%	
Oaktree Real Estate Opportunities Fund VI	09/30/13	09/30/20				80,000,000	66,531,000	0.81%	5,682,000
Oaktree Real Estate Opportunities Fund VII	02/28/15	02/28/23				65,000,000	4,416,000	0.05%	58,500,000
Siguler Guff Distressed Real Estate Opp. Fund	12/31/11	12/31/16				75,000,000	53,819,000	0.66%	11,993,000
Siguler Guff Distressed Real Estate Opp. Fund II	08/31/13	08/31/20				70,000,000	55,685,000	0.68%	24,867,000
Siguler Guff Distressed Real Estate Opp. II Co-Inv	01/31/16	01/31/23				25,000,000	15,123,000	0.18%	10,567,000
Paulson Real Estate Fund II	11/10/13	11/10/20				20,000,000	21,913,000	0.27%	1,874,000
Angelo Gordon Realty Fund VIII	12/31/11	12/31/18				80,000,000	46,807,000	0.57%	18,145,000
Angelo Gordon Realty Fund IX	10/10/14	10/10/22				65,000,000	38,026,000	0.46%	31,091,000
<b>Outstanding Commitments</b>						<b>780,000,000</b>	<b>465,271,000</b>	<b>5.68%</b>	<b>201,791,000</b>
<b>Total</b>							<b>201,791,000</b>		<b>667,062,000</b>

PRIVATE CREDIT	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
Torchlight Debt Opportunity Fund II	09/28/06	09/30/16				128,000,000	44,245,000	0.54%	
Torchlight Debt Opportunity Fund III	09/30/08	09/30/16				75,000,000	8,499,000	0.10%	
Torchlight Debt Opportunity Fund IV	08/01/12	08/30/20				60,000,000	55,114,000	0.67%	
Torchlight Debt Opportunity Fund V	12/31/14	09/17/22				75,000,000	40,009,000	0.49%	45,000,000
Angelo Gordon Energy Credit Opportunities	09/10/15	09/10/20				16,500,000	13,922,000	0.17%	
<b>Outstanding Commitments</b>						<b>354,500,000</b>	<b>161,789,000</b>	<b>1.98%</b>	<b>45,000,000</b>
<b>Total</b>							<b>45,000,000</b>		<b>206,789,000</b>

**Private Market Investments  
As of July 31, 2017**

PRIVATE EQUITY	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
Adams Street Partners	12/22/95	INDEFINITE				180,000,000	127,610,000	1.56%	80,352,000
Adams Street Secondary II	12/31/08	12/31/20				30,000,000	12,121,000	0.15%	12,637,000
Adams Street Secondary V	10/31/12	10/31/22				40,000,000	20,636,000	0.25%	17,340,000
Adams Street Venture Innovation Fund	03/09/16	03/09/28				75,000,000	3,413,000	0.04%	71,587,000
Bay Area Equity Fund	06/14/04	01/15/13	1st 2 YR	LP	1/15/2015	10,000,000	3,150,000	0.04%	
Bay Area Equity Fund II	2/29/09	12/31/17				10,000,000	8,667,000	0.11%	
Carpenter Community BancFund	01/31/08	01/31/16				30,000,000	23,512,000	0.29%	
EIF USPF I	11/08/02	11/08/12	3rd 1YR	LP	11/08/15	30,000,000	569,000	0.01%	
EIF USPF II	06/15/05	06/15/15				50,000,000	40,635,000	0.50%	
EIF USPF III	02/28/07	02/28/17				65,000,000	58,641,000	0.72%	
EIF USPF IV	06/28/10	06/28/20				50,000,000	49,775,000	0.61%	
Oaktree Private Investment Fund 2009	02/28/10	01/31/17				40,000,000	14,470,000	0.24%	
Ocean Avenue Fund II	06/11/14	05/31/24				30,000,000	21,926,000	0.27%	10,384,000
Ocean Avenue Fund III	06/11/14	05/31/24				50,000,000	10,000,000	0.07%	40,000,000
Paladin III	11/30/07	12/31/17				25,000,000	24,755,000	0.30%	
Pathway	11/09/98	05/31/21				125,000,000	29,778,000	0.36%	14,420,000
Pathway 2008	12/26/08	12/26/23				30,000,000	20,794,000	0.25%	6,622,000
Pathway 6	05/24/11	05/24/26				40,000,000	31,370,000	0.38%	12,509,000
Pathway 7	02/07/13	02/07/23				70,000,000	41,687,000	0.51%	28,012,000
Pathway 8	11/23/15	11/23/25				50,000,000	17,065,000	0.21%	36,572,000
Siguler Guff CCCERA Opportunities	06/03/14	05/31/25				200,000,000	118,280,000	1.44%	106,048,000
Siguler Guff Secondary Opportunities	12/31/16	12/31/26				50,000,000	9,396,000	0.11%	45,682,000
<b>Real Assets</b>									
Aether III & III Surplus	11/30/13	11/30/20				75,000,000	61,933,000	0.76%	16,755,000
Aether IV	01/01/16	01/01/28				50,000,000	15,551,000	0.19%	34,003,000
ARES EIF V	09/09/15	09/09/25				50,000,000	7,365,000	0.09%	38,561,000
Commonfund Capital Natural Resources IX	06/30/13	06/30/20				50,000,000	38,331,000	0.47%	16,625,000
Wastewater Opportunity Fund	12/31/15	11/30/22				25,000,000	6,050,000	0.07%	18,950,000
<b>Outstanding Commitments</b>						<b>1,545,000,000</b>	<b>817,480,000</b>	<b>10.00%</b>	<b>607,059,000</b>
<b>Total</b>							<b>607,059,000</b>		
							<b>1,424,539,000</b>		

Market value column is the latest ending quarter plus any additional capital calls after the ending quarter.  
The Target Termination column is the beginning of liquidation of the fund, however, some funds may be extended for an additional two or three years.



Meeting Date  
**09/13/17**  
Agenda Item  
**#6**

## **MEMORANDUM**

Date: September 13, 2017  
To: CCCERA Board of Retirement  
From: Gail Strohl, Chief Executive Officer  
Subject: Consider and take possible action to accept the GASB 68 report from Segal Consulting.

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### ***Background***

The Governmental Accounting Standards Board (GASB) issued Statement No. 68 in June 2012 to be effective for fiscal years beginning after June 15, 2014. This Statement's objective is to improve accounting and financial reporting. CCCERA's participating employers can utilize the information contained in the GASB 68 report in their own reporting. Employers are currently assessed a pro-rata share of the report preparation cost. The Segal Consulting report is based on a December 31, 2016 measurement date for employer reporting as of June 30, 2017.

### ***Recommendation***

Consider and take possible action to accept the GASB 68 report from Segal Consulting.

# **Contra Costa County Employees' Retirement Association**

**Governmental Accounting Standards (GAS) 68  
Actuarial Valuation Based on December 31, 2016  
Measurement Date for Employer Reporting as of  
June 30, 2017**



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 CCCERA 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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August 29, 2017

Board of Retirement  
Contra Costa County Employees' Retirement Association  
1335 Willow Way, Suite 221  
Concord, CA 94520

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 68 Actuarial Valuation based on December 31, 2016 measurement date for employer reporting as of June 30, 2017. It contains various information that will need to be disclosed in order for Contra Costa County Employees' Retirement Association (CCCERA) employers to comply with GAS 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 CCCERA pension plan. The census and financial information on which our calculations were based was provided by CCCERA. 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 John Monroe, ASA, 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 CCCERA.

Sincerely,

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

By:

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

John Monroe, ASA, MAAA, EA  
Vice President and Actuary

AW/bbf

## SECTION 1

### VALUATION SUMMARY

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## **SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association**

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### **Purpose**

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standard (GAS) 68 for employer reporting as of June 30, 2017. The results used in preparing this GAS 68 report are comparable to those used in preparing the Governmental Accounting Standard (GAS) 67 report for the plan based on a reporting date and a measurement date as of December 31, 2016. This valuation is based on:

- The benefit provisions of CCCERA, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of December 31, 2015, provided by CCCERA;
- The assets of the Plan as of December 31, 2016, provided by CCCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the December 31, 2016 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the December 31, 2016 valuation.

### **General Observations on GAS 68 Actuarial Valuation**

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

- The Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices.
- When measuring pension liability GASB uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as CCCERA uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on generally the same basis as CCCERA'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 TPL and the Plan's Fiduciary Net Position include liabilities and assets held for the Post Retirement Death Benefit Reserve. The TPL only includes a liability up to the amount in the Post Retirement Death Benefit Reserve. This is because we understand that the post retirement death benefit is a nonvested benefit and once the reserve is depleted no further benefits would need to be paid.

## SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association

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- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis.
- For this report, the reporting dates for the employer are June 30, 2017 and 2016. The NPL was measured as of December 31, 2016 and 2015, respectively. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement dates while the TPL was determined based upon rolling forward the results of the actuarial valuations as of December 31, 2015 and 2014, respectively. In addition, any changes in actuarial assumptions or plan provisions that occurred between the valuation date and the measurement date have been reflected. Consistent with the provisions of GAS 68, the assets and liabilities measured as of December 31, 2016 and 2015 are not adjusted or rolled forward to June 30, 2017 and 2016 reporting dates, respectively.

### Significant Issues in Valuation Year

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

- The NPL decreased from \$1.51 billion as of December 31, 2015 to \$1.40 billion as of December 31, 2016 primarily due to the 7.10% return on the market value of assets during 2016 (that was slightly higher than the assumed return of 7.00%) and other differences between expected and actual experience. Changes in these values during the last two fiscal years ending December 31, 2016 and December 31, 2015 can be found in Exhibit 5.
- The discount rate used to determine the TPL and NPL as of December 31, 2016 and 2015 was 7.00% following the same assumptions used by the Association in the pension funding valuations as of the same dates. The detailed calculations of the discount rate of 7.00% used in calculation of the TPL and NPL as of December 31, 2016 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.
- Based on discussions with CCCERA and their auditors, starting with the June 30, 2017 reporting date for the employers, the employer contributions now exclude any employer subvention of member contributions and include any member subvention of employer contributions in the amounts shown through Exhibits 1 through 13 in Section 2. This change has not been applied on a retroactive basis prior to the June 30, 2017 reporting date.
- Prior to the June 30, 2017 reporting date, the pension expense, NPL and other results attributed to these three terminated employers: (1) Delta Diablo Sanitation District, (2) Diablo Water District and (3) City of Pittsburg were allocated to other employers within the applicable Cost Groups. Starting with the December 31, 2016 funding valuation, the assets and liabilities associated with the three terminated employers have been moved to their own Cost

## SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association

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Group. Therefore, we have directly allocated to each of these terminated employers their pension expense and NPL starting with the June 30, 2017 reporting date. In particular, the TPL for each terminated employers is obtained directly from internal valuation results for that specific employer. Furthermore, the Plan's Fiduciary Net Position for each terminated employer has been set equal to the amount in their respective bookkeeping account.

- Results shown in this report exclude any employer contributions made after the measurement date of December 31, 2016. For employers that participate in the prepayment program, it is our understanding that the portion of the prepayment made in July 2016 that was for the period from January 1, 2017 through June 30, 2017 has also been excluded. Employers should consult with their auditors to determine the deferred outflow that should be created for these contributions.
- All Cost Groups except Cost Groups #1, #2, #6 and #8 only have one active employer, so all of the NPL for those Cost Groups are allocated to that employer. The NPL has already been reduced by any proceeds from Pension Obligation Bonds and any UAAL prepayments.

For Cost Groups #1, #2, #6 and #8, the NPL is allocated based on the actual compensation by employer within the Cost Group. The steps we used are as follows:

- Calculate ratio of employer's compensation to the total compensation for the Cost Group.
- Multiply this ratio by an "adjusted" NPL. This adjusted NPL is larger than the actual NPL as it excludes proceeds from Pension Obligation Bonds and any UAAL prepayments from the Cost Group's assets when determining the employer's proportionate share of the NPL for the Cost Group. It also excludes the NPLs for the three terminated employers.
- Subtract from the adjusted NPL the outstanding balance of the proceeds from any Pension Obligation Bonds and any UAAL prepayments for those employers in each Cost Group that are subject to these adjustments.
- If the employer is in several Cost Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Cost Group.

Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers. The NPL allocation can be found in Exhibit 7 in Section 2.

- Page iv contains a summary with the names for all active participating employers in CCCERA. Also shown are the employer name abbreviations and employer numbers that are used throughout the rest of this report.

**SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association**

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**Summary of Active Participating Employers within CCCERA**

<b>#</b>	<b><u>Employer Name</u></b>	<b><u>Abbreviation</u></b>
1	Bethel Island Municipal Improvement District	1 - BIMID
2	Byron-Brentwood-Knightsen Union Cemetery District	2 - Union Cemetery
3	Contra Costa Mosquito & Vector Control District	3 - CC Mosquito
4	Contra Costa County Fire Protection District	4 - CCCFPD
5	Central Contra Costa Sanitary District	5 - CCCSD
6	First 5 CC Children & Families Commission	6 - First 5
7	Contra Costa County	7 - County
8	Contra Costa County Employees' Retirement Association	8 - CCCERA (the employer)
9	East Contra Costa Fire Protection District	9 - ECCFPD
10	Contra Costa Housing Authority	10 - Housing Authority
11	In-Home Supportive Services Authority	11 - IHSS
12	Contra Costa Local Agency Formation Commission	12 - LAFCO
13	Moraga-Orinda Fire Protection District	13 - MOFD
14	Rodeo Sanitary District	14 - Rodeo SD
15	Rodeo-Hercules Fire Protection District	15 - RHFD
16	San Ramon Valley Fire Protection District	16 - SRVFPD
17	Contra Costa Superior Court	17 - Court
18	Delta Diablo Sanitation District (Terminated Employer)	18 - DDSD (Term)
19	Diablo Water District (Terminated Employer)	19 - DWD (Term)
20	City of Pittsburg (Terminated Employer)	20 - Pittsburg (Term)

**SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association**

**Summary of Key Valuation Results**

<b>Reporting Date for Employer under GAS 68</b>	<b>6/30/2017<sup>(1)</sup></b>	<b>6/30/2016<sup>(1)</sup></b>
<b>Measurement Date for Employer under GAS 68</b>	<b>12/31/2016</b>	<b>12/31/2015</b>
<b>Disclosure elements for fiscal year ending December 31:</b>		
1. Service Cost <sup>(2)</sup>	\$202,697,041	\$192,923,283
2. Total Pension Liability	8,838,974,427	8,483,709,568
3. Plan's Fiduciary Net Position	7,438,519,504	6,976,582,428
4. Net Pension Liability	1,400,454,923	1,507,127,140
5. Pension Expense	267,159,589	243,133,717
<b>Schedule of contributions for fiscal year ending December 31:</b>		
6. Actuarially determined contributions <sup>(3)</sup>	\$307,909,509	\$321,220,270
7. Actual employer contributions <sup>(3)</sup>	307,909,509	321,220,270
8. Contribution deficiency (excess) (6) – (7)	0	0
<b>Demographic data for plan year ending December 31:<sup>(4)</sup></b>		
9. Number of retired members and beneficiaries	9,100	9,068
10. Number of vested terminated members <sup>(5)</sup>	3,089	2,790
11. Number of active members	9,848	9,645
<b>Key assumptions as of December 31:</b>		
12. Investment rate of return	7.00%	7.00%
13. Inflation rate	2.75%	2.75%
14. Projected salary increases <sup>(6)</sup>	General: 4.00% to 13.25% and Safety: 4.00% to 13.75%	General: 4.00% to 13.25% and Safety: 4.00% to 13.75%

<sup>(1)</sup> The reporting dates and measurement dates for the plan are December 31, 2016 and 2015, respectively.

<sup>(2)</sup> Please note that service cost is always based on the previous year's assumptions, meaning the December 31, 2016 value is based on those assumptions shown as of December 31, 2015 whereas the December 31, 2015 value is based on the December 31, 2014 assumptions shown below:

**Key assumptions as of December 31, 2014:**

Investment rate of return	7.25%
Inflation rate	3.25%
Projected salary increases*	General: 4.75% to 13.50%, and Safety: 4.75% to 14.00%

\* Includes inflation at 3.25% plus real across the board salary increases of 0.75% plus merit and promotional increases.

<sup>(3)</sup> See footnote (5) under Exhibit 6 on page 11.

<sup>(4)</sup> Data as of December 31, 2015 is used in the measurement of the TPL as of December 31, 2016.

<sup>(5)</sup> Includes terminated members with member contributions on deposit.

<sup>(6)</sup> Includes inflation at 2.75% plus real across-the-board salary increases of 0.50% plus promotional and merit increases as of December 31, 2016 and 2015.

## SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association

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### Important Information about Actuarial Valuations

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

In order to prepare an actuarial valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by CCCERA. 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 CCCERA.
- **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



## SECTION 1: Valuation Summary for Contra Costa County Employees' Retirement Association

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cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

- If CCCERA is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

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

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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### EXHIBIT 1

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

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##### Plan Description

*Plan administration.* The Contra Costa County Employees' Retirement Association (CCCERA) was established by the County of Contra Costa in 1945. CCCERA is governed by the County Employees' Retirement Law of 1937 (California Government Code Section 31450 et. seq), the California Public Employees' Pension Reform Act of 2013 (PEPRA), and the regulations, procedures, and policies adopted by CCCERA's Board of Retirement. CCCERA is a cost-sharing multiple employer public employee retirement association whose main function is to provide service retirement, disability, death and survivor benefits to the General and Safety members employed by the County of Contra Costa. CCCERA also provides retirement benefits to the employee members for 16 other participating agencies which are members of CCCERA.

The management of CCCERA is vested with the CCCERA Board of Retirement. The Board consists of twelve trustees. Of the twelve members, three are alternates. Four trustees are appointed by the County Board of Supervisors; four trustees (including the Safety alternate) are elected by CCCERA's active members; two trustees (including one alternate) are elected by the retired membership. Board members serve three-year terms, with the exception of the County Treasurer who is elected by the general public and serves during his tenure in office.

*Plan membership.* At December 31, 2016, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	9,100
Vested terminated members entitled to, but not yet receiving benefits <sup>(1)</sup>	3,089
Active members	<u>9,848</u>
Total	22,037

<sup>(1)</sup> Includes members who terminate with less than five years of service and leave accumulated contributions on deposit

Note: Data as of December 31, 2016 is not used in the measurement of the TPL as of December 31, 2016.

*Benefits provided.* CCCERA provides service retirement, disability, death and survivor benefits to eligible employees. All regular full-time employees of the County of Contra Costa or participating agencies become members of CCCERA effective on the first day of the first full pay period after employment. Part-time employees in permanent positions must work at least 20 hours a week in order to be a member of CCCERA. There are separate retirement plans for General and Safety member employees. Safety membership is extended to those involved in active law enforcement, fire suppression, and certain other

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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“Safety” classifications. There are currently five tiers applicable to Safety members. Safety members with membership dates before January 1, 2013 are included in Tier A (Enhanced and Non-Enhanced). County Sheriff’s Department Safety members hired on or after January 1, 2007, but before January 1, 2013 are placed in Safety Tier C Enhanced. Any new Safety Member who becomes a member on or after January 1, 2013 is designated PEPRA Safety Tier D or E (Safety members from certain bargaining units) and is subject to the provisions of California Government Code 7522 et seq.

All other employees are classified as General members. There are currently eight tiers applicable to General members. General Tier 1 (Enhanced and Non-Enhanced) includes general members hired before July 1, 1980 and electing not to transfer to Tier 2 Plan. In addition, certain General members with membership dates before January 1, 2013 hired by specific employers who did not adopt Tier 2 are placed in Tier 1. General Tier 2 includes most General members hired on or after August 1, 1980 and all General members hired before July 1, 1980 electing to transfer to the Tier 2 Plan. Effective October 1, 2002, for the County, Tier 2 was eliminated and all County employees (excluding CNA employees) in Tier 2 were placed in Tier 3 (Enhanced and Non-Enhanced). Effective January 1, 2005, all CNA employees in Tier 2 were placed in Tier 3. New General Members who become a member on or after January 1, 2013 are designated as PEPRA General Tier 4 (hired by specific employers who did not adopt Tier 2) and Tier 5 (with 2%/3% maximum COLAs) and are subject to the provisions of California Government Code 7522 et seq.

General members prior to January 1, 2013, are eligible to retire once they attain the age of 70 regardless of service or at age 50 and have acquired 10 or more years of retirement service credit. A member with 30 years of service is eligible to retire regardless of age. General members who are first hired on or after January 1, 2013, are eligible to retire once they have attained the age of 70 regardless of service or at age 52, and have acquired five years of retirement service credit.

Safety members prior to January 1, 2013, are eligible to retire once they attain the age of 70 regardless of service or at age 50 and have acquired 10 or more years of retirement service credit. A member with 20 years of service is eligible to retire regardless of age. Safety members who are first hired on or after January 1, 2013, are eligible to retire once they have attained the age of 70 regardless of service or at age 50, and have acquired five years of retirement service credit.

The retirement benefit the member will receive is based upon age at retirement, final average compensation, years of retirement service credit and retirement plan and tier.

General Tier 1 and Tier 3 benefits are calculated pursuant to the provisions of Sections §31676.11 and §31676.16 for Non-Enhanced and Enhanced benefit formulae, respectively. The monthly allowance is equal to 1/60th (Non-Enhanced) and 1/50th (Enhanced) of final compensation times years of accrued retirement service credit times age factor from either section §31676.11 (Non-Enhanced) or §31676.16 (Enhanced). Note that for members previously covered under the Non-Enhanced formula (§31676.11), they are entitled to at least the benefits they could have received under the Non-Enhanced formula (§31676.11). General Tier 2 benefit is calculated pursuant to the provisions of Sections §31752. General member benefits for

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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those with membership dates on or after January 1, 2013 (PEPRA General Tier 4 and Tier 5) are calculated pursuant to the provisions found in California Government Code Section §7522.20(a). The monthly allowance is equal to the final compensation multiplied by years of accrued retirement credit multiplied by the age factor from Section §7522.20(a).

Safety member benefits are calculated pursuant to the provisions of California Government Code Sections §31664 and §31664.1 for Non-Enhanced and Enhanced formulae, respectively. The monthly allowance is equal to 1/50th (or 2%) of final compensation times years of accrued retirement service credit times age factor from Section §31664 (Non-Enhanced) or 3% of final compensation times years of accrued retirement service credit times age factor from §31664.1 (Enhanced). For those Safety member with membership dates on or after January 1, 2013 (PEPRA Safety Tier D and Tier E) benefits are calculated pursuant to the provisions found in California Government Code Section §7522.25(d). The monthly allowance is equal to the final compensation multiplied by years of accrued retirement service credit multiplied by the age factor from Section §7522.25(d).

For members with membership dates before January 1, 2013, the maximum monthly retirement allowance is 100% of final compensation. There is no final compensation limit on the maximum retirement benefit for members with membership dates on or after January 1, 2013. However, the maximum amount of compensation earnable that can be taken into account for 2017 for members with membership dates on or after January 1, 1996 but before January 1, 2013 is \$270,000. For members with membership dates on or after January 1, 2013 the maximum amount of pensionable compensation that can be taken into account for 2017 is equal to \$118,775 for those enrolled in Social Security (\$142,530 for those not enrolled in Social Security). These limits are adjusted on an annual basis. Members are exempt from paying member contributions and employers are exempt from paying employer contributions on compensation in excess of the annual cap.

Final average compensation consists of the highest 12 consecutive months for General Tier 1, General Tier 3 (non-disability) and Safety Tier A members and the highest 36 consecutive months for General Tier 2, General Tier 3 (disability), PEPRA General Tier 4, PEPRA General Tier 5, Safety Tier C, PEPRA Safety Tier D and PEPRA Safety Tier E members.

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 or at least two years prior to the date of death and has attained age 55 on or prior to the date of death. 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.

CCCERA 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, is capped at 3.0% for General Tier 1, General Tier 3 (non-disability

## **SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

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benefits), PEPRA General Tier 4, PEPRA General Tier 5-3% (non-disability benefits), Safety Tier A and PEPRA Safety Tier D. The cost-of-living adjustment is capped at 4.0% for General Tier 3 (disability benefits), General Tier 2 and PEPRA General Tier 5-3% (disability benefits). The cost-of-living adjustment is capped at 2.0% for General Tier 5-2%, Safety Tier C and PEPRA Safety Tier E.

The County of Contra Costa and 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 CCCERA's actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of December 31, 2016 for the fiscal year beginning July 1, 2016 (based on the December 31, 2014 valuation) was 40.06% of compensation.

Members are required to make contributions to CCCERA regardless of the retirement plan or tier in which they are included. The average member contribution rate as of December 31, 2016 for the fiscal year beginning July 1, 2016 (based on the December 31, 2014 valuation) was 11.84% of compensation.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 2**

**Net Pension Liability**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
The components of the Net Pension Liability are as follows:		
Total Pension Liability	\$8,838,974,427	\$8,483,709,568
Plan's Fiduciary Net Position	<u>(7,438,519,504)</u>	<u>(6,976,582,428)</u>
Net Pension Liability	\$1,400,454,923	\$1,507,127,140
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	84.16%	82.24%

The Net Pension Liability (NPL) was measured as of December 31, 2016 and 2015. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date while the Total Pension Liability (TPL) was determined based upon rolling forward the TPL from actuarial valuations as of December 31, 2015 and 2014, respectively.

*Plan provisions.* The plan provisions used in the measurement of the NPL as of December 31, 2016 and 2015 are the same as those used in the CCCERA funding valuation as of December 31, 2016 and 2015, respectively. The TPL and the Plan's Fiduciary Net Position include liabilities and assets held for the Post Retirement Death Benefit Reserve.

*Actuarial assumptions and methods.* The TPL as of December 31, 2016 and December 31, 2015 were determined by actuarial valuations as of December 31, 2015 and December 31, 2014, respectively. The actuarial assumptions used were based on the results of an experience study for the period January 1, 2012 through December 31, 2014. They are the same as the assumptions used in the CCCERA funding valuations as of December 31, 2016 and 2015. The assumptions used in the funding valuations are outlined on page 12 of this report. In particular, the following actuarial assumptions were applied to all periods included in the measurement for both the December 31, 2016 and December 31, 2015 actuarial valuations:

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

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**EXHIBIT 2 (continued)**

**Net Pension Liability**

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Inflation	2.75%
Salary increases	General: 4.00% to 13.25% and Safety: 4.00% to 13.75%, varying by service, including inflation.
Investment rate of return	7.00%, net of pension plan investment expense, including inflation.
Administrative expenses for December 31, 2016 valuation	1.12% of payroll allocated to both the employer and member based on the components of the Normal Cost rates for the employer and member.
Administrative expenses for December 31, 2015 valuation	1.14% of payroll allocated to both the employer and member based on the components of the Normal Cost rates for the employer and member.
Other assumptions	Same as those used in December 31, 2016 funding valuation.

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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### EXHIBIT 3

#### Target Asset Allocation

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The long-term expected rate of return on pension plan investments was determined in 2016 using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

<b>Asset Class</b>	<b>Target Allocation</b>	<b>Long-Term Expected Real Rate of Return</b>
Large Cap U.S. Equity	6%	5.75%
Developed International Equity	10%	6.99%
Emerging Markets Equity	14%	8.95%
Short-Term Govt/Credit	24%	0.20%
U.S. Treasury	2%	0.30%
Real Estate	7%	4.45%
Cash & Equivalents	1%	-0.46%
Risk Diversifying Strategies	2%	4.30%
Private Credit	17%	6.30%
Private Equity	<u>17%</u>	8.10%
<b>Total</b>	<u>100%</u>	



## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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### EXHIBIT 3 (continued)

#### Target Asset Allocation

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*Discount rate:* The discount rate used to measure the TPL was 7.00% as of December 31, 2016 and December 31, 2015. The projection of cash flows used to determine the discount rate assumed employer and employee contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer and employee contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both December 31, 2016 and December 31, 2015.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 4**

**Discount Rate Sensitivity**

*Sensitivity of the Net Pension Liability to changes in the discount rate.* The following presents the NPL of the CCCERA as of December 31, 2016, which is allocated to all employers, calculated using the discount rate of 7.00%, as well as what the CCCERA's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate. The determination of the NPL by employer is shown later in Exhibit 7.

<b>Employer</b>	<b>1% Decrease (6.00%)</b>	<b>Current Discount Rate (7.00%)</b>	<b>1% Increase (8.00%)</b>
1 - BIMID	\$232,700	\$137,084	\$59,184
2 - Union Cemetery	316,128	75,800	-119,998
3 - CC Mosquito	8,725,873	5,140,418	2,219,313
4 - CCCFPD	299,695,388	167,124,048	59,116,886
5 - CCCSD	139,044,846	87,847,116	46,135,827
6 - First 5	4,914,427	2,423,899	394,841
7 - County	1,810,386,530	939,305,464	229,627,233
8 - CCCERA (the employer)	10,992,540	6,475,713	2,795,810
9 - ECCFPD	35,377,439	23,362,447	13,573,716
10 - Housing Authority	18,242,466	10,162,604	3,579,862
11 - IHSS	2,197,454	1,294,522	558,894
12 - LAFCO	609,962	359,329	155,136
13 - MOFD	57,993,669	32,569,913	11,856,931
14 - Rodeo SD	849,751	203,750	-322,553
15 - RHFD	20,723,486	14,693,106	9,780,097
16 - SRVFPD	129,942,658	72,491,195	25,684,928
17 - Court	55,158,072	27,158,829	4,347,573
18 - DDS (Term)	3,342,779	1,918,215	716,678
19 - DWD (Term)	994,013	823,144	671,352
20 - Pittsburg (Term)	<u>12,073,881</u>	<u>6,888,327</u>	<u>2,566,190</u>
Total for all Employers	\$2,611,814,062	\$1,400,454,923	\$413,397,900

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 5**

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

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Total Pension Liability</b>		
1. Service cost	\$202,697,041	\$192,923,283
2. Interest	591,971,317	582,342,316
3. Change of benefit terms	0	0
4. Differences between expected and actual experience	(19,957,982)	(62,117,935)
5. Changes of assumptions	0	72,186,307
6. Benefit payments, including refunds of member contributions	<u>(419,445,517)</u>	<u>(406,236,030)</u>
7. Net change in Total Pension Liability	\$355,264,859	\$379,097,941
8. Total Pension Liability – beginning	<u>8,483,709,568</u>	<u>8,104,611,627</u>
9. Total Pension Liability – ending	<u>\$8,838,974,427</u>	<u>\$8,483,709,568</u>
<b>Plan's Fiduciary Net Position</b>		
10. Contributions – employer <sup>(1)</sup>	\$307,909,509	\$323,720,270
11. Contributions – plan members <sup>(1)</sup>	88,787,806	85,360,637
12. Net investment income <sup>(2)</sup>	493,874,242	73,611,016
13. Benefit payments, including refunds of member contributions	(419,445,517)	(406,236,030)
14. Administrative expense	(8,486,463)	(8,115,359)
15. Other	<u>(702,501)</u>	<u>(668,336)</u>
16. Net change in Plan's Fiduciary Net Position	\$461,937,076	\$67,672,198
17. Plan's Fiduciary Net Position – beginning	<u>6,976,582,428</u>	<u>6,908,910,230</u>
18. Plan's Fiduciary Net Position – ending	\$7,438,519,504	\$6,976,582,428
19. Net Pension Liability – ending (9) – (18)	<u>\$1,400,454,923</u>	<u>\$1,507,127,140</u>
20. Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	84.16%	82.24%
21. Covered employee payroll <sup>(3)</sup>	\$755,138,882	\$709,818,858
22. Plan Net Pension Liability as percentage of covered employee payroll	185.46%	212.33%

<sup>(1)</sup> See footnote (5) under Exhibit 6 on page 11.

<sup>(2)</sup> Includes Contribution Prepayment Discount.

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

**Notes to Schedule:**

Benefit changes: *None*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 6**

**Schedule of Employer Contributions – Last Ten Plan Years**

<b>Year Ended December 31</b>	<b>Actuarially Determined Contributions</b>	<b>Contributions in Relation to the Actuarially Determined Contributions</b>	<b>Contribution Deficiency/(Excess)</b>	<b>Covered-Employee Payroll<sup>(1)</sup></b>	<b>Contributions as a Percentage of Covered Employee Payroll</b>
2007	\$196,929,570	\$196,929,570	\$0	\$653,953,163	30.11%
2008	206,518,693	206,518,693	0	671,617,932	30.75%
2009	195,631,673	195,631,673	0	704,947,668	27.75%
2010	183,950,930	183,950,930	0	694,443,999	26.49%
2011	200,388,994	200,388,994	0	687,443,206	29.15%
2012	212,321,325	212,321,325	0	666,394,146	31.86%
2013	228,017,452	228,017,452 <sup>(2)</sup>	0	638,635,912	35.70%
2014	288,760,413	288,760,413 <sup>(3)</sup>	0	671,485,798	43.00%
2015	321,220,270	321,220,270 <sup>(4)</sup>	0	709,818,858	45.25%
2016	307,909,509 <sup>(5)</sup>	307,909,509 <sup>(5)</sup>	0	755,138,882	40.78%

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

<sup>(2)</sup> Excludes additional contributions towards UAAL of \$7,000,000.

<sup>(3)</sup> Excludes additional contributions towards UAAL of \$5,000,000.

<sup>(4)</sup> Excludes additional contributions towards UAAL of \$2,500,000.

<sup>(5)</sup> For the year ended December 31, 2016, includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to that year, the contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

See accompanying notes to this schedule on next page.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**Notes to Exhibit 6**

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

**Valuation date** Actuarially determined contribution rates are calculated as of December 31, two and a half years prior to the end of the fiscal year in which contributions are reported

**Actuarial cost method** Entry Age Actuarial Cost Method

**Amortization method** Level percent of payroll

**Remaining amortization period** Remaining balance of December 31, 2007 UAAL is amortized over a fixed (decreasing or closed) period with 7 years remaining as of December 31, 2015. Any changes in UAAL after December 31, 2007 will be separately amortized over a fixed 18-year period effective with that valuation. Effective December 31, 2013, any changes in UAAL due to plan amendments (with the exception of a change due to retirement incentives) will be amortized over a 10-year fixed period effective with that valuation. The entire increase in UAAL resulting from a temporary retirement incentive will be funded in full upon adoption of the incentive.

**Asset valuation method** Market value of assets less unrecognized returns in each of the last nine semi-annual accounting periods. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized semi-annually over a five-year period. The Actuarial Value of Assets is reduced by the value of the non-valuation reserves and designations.

<b>Actuarial assumptions:</b>	<u>December 31, 2016 Valuation Date</u>	<u>December 31, 2015 Valuation Date</u>
Investment rate of return	7.00%, net of pension plan investment expenses, including inflation	7.00%, net of pension plan investment expenses, including inflation
Inflation rate	2.75%	2.75%
Administrative expenses	1.12% of payroll allocated to both the employer and member based on the components of the Normal Cost rates for the employer and member.	1.14% of payroll allocated to both the employer and member based on the components of the Normal Cost rates for the employer and member.
Real across-the-board salary increase	0.50%	0.50%
Projected salary increases <sup>(1)</sup>	General: 4.00% to 13.25% and Safety: 4.00% to 13.75%	General: 4.00% to 13.25% and Safety: 4.00% to 13.75%
Cost of living adjustments	2.75% per year except for Safety Tier C, PEPRA Tier E benefits and PEPRA Tier 4 (2% COLA) and Tier 5 (2% COLA) benefits for members covered under certain memoranda of understanding are assumed to increase at 2% per year. All increases are contingent upon actual increases in CPI.	2.75% per year except for Safety Tier C, PEPRA Tier E benefits and PEPRA Tier 4 (2% COLA) and Tier 5 (2% COLA) benefits for members covered under certain memoranda of understanding are assumed to increase at 2% per year. All increases are contingent upon actual increases in CPI.
Other assumptions	Same as those used in the December 31, 2016 funding actuarial valuation	Same as those used in the December 31, 2015 funding actuarial valuation

<sup>(1)</sup> Includes inflation at 2.75% plus real across-the-board salary increases of 0.50% plus promotional and merit increases for December 31, 2016 and December 31, 2015.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7**

**Determination of Proportionate Share**

**Actual Compensation by Employer and Cost Group  
January 1, 2016 to December 31, 2016**

<b>Employer</b>	<b>Cost Group #1 &amp; 2</b>	<b>Cost Group #1 &amp; 2 Percentage</b>	<b>Cost Group #3</b>	<b>Cost Group #3 Percentage</b>	<b>Cost Group #4</b>	<b>Cost Group #4 Percentage</b>
1 - BIMID	\$82,174	0.014%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	3,081,368	0.543%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	0	0.000%	0	0.000%
5 - CCCSD	0	0.000%	31,584,169	100.000%	0	0.000%
6 - First 5	2,140,380	0.377%	0	0.000%	0	0.000%
7 - County	528,783,808	93.253%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	3,881,797	0.685%	0	0.000%	0	0.000%
9 - ECCFPD	57,358	0.010%	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	5,215,890	100.000%
11 - IHSS	775,987	0.137%	0	0.000%	0	0.000%
12 - LAFCO	215,396	0.038%	0	0.000%	0	0.000%
13 - MOFD	568,802	0.100%	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	66,601	0.012%	0	0.000%	0	0.000%
16 - SRVFPD	3,323,048	0.586%	0	0.000%	0	0.000%
17 - Court	24,062,771	4.244%	0	0.000%	0	0.000%
18 - DDS (Term)	N/A	N/A	N/A	N/A	N/A	N/A
19 - DWD (Term)	N/A	N/A	N/A	N/A	N/A	N/A
20 - Pittsburg (Term)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total</b>	<b>\$567,039,490</b>	<b>100.000%</b>	<b>\$31,584,169</b>	<b>100.000%</b>	<b>\$5,215,890</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>Actual Compensation by Employer and Cost Group January 1, 2016 to December 31, 2016</b>				
<b>Employer</b>	<b>Cost Group #5</b>		<b>Cost Group #6</b>	
	<b>Cost Group #5</b>	<b>Percentage</b>	<b>Cost Group #6</b>	<b>Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	226,811	27.115%
3 - CC Mosquito	0	0.000%	0	0.000%
4 - CCCFPD	4,291,448	100.000%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%
7 - County	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	609,667	72.885%
15 - RHFD	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%
18 - DDS (Term)	N/A	N/A	N/A	N/A
19 - DWD (Term)	N/A	N/A	N/A	N/A
20 - Pittsburg (Term)	N/A	N/A	N/A	N/A
<b>Total</b>	<b>\$4,291,448</b>	<b>100.000%</b>	<b>\$836,478</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>Actual Compensation by Employer and Cost Group January 1, 2016 to December 31, 2016</b>						
<b>Employer</b>	<b>Cost Group #7 &amp; 9</b>	<b>Cost Group #7 &amp; 9 Percentage</b>	<b>Cost Group #8</b>	<b>Cost Group #8 Percentage</b>	<b>Cost Group #10</b>	<b>Cost Group #10 Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	0	0.000%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	30,720,530	91.308%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%	0	0.000%
7 - County	84,781,260	100.000%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	2,924,553	8.692%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%	6,778,955	100.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	0	0.000%	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%	0	0.000%
18 - DDS (Term)	N/A	N/A	N/A	N/A	N/A	N/A
19 - DWD (Term)	N/A	N/A	N/A	N/A	N/A	N/A
20 - Pittsburg (Term)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total</b>	<b>\$84,781,260</b>	<b>100.000%</b>	<b>\$33,645,083</b>	<b>100.000%</b>	<b>\$6,778,955</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>Actual Compensation by Employer and Cost Group January 1, 2016 to December 31, 2016</b>						
<b>Employer</b>	<b>Cost Group #11</b>		<b>Cost Group #12</b>		<b>Total Compensation</b>	<b>Total Percentage</b>
	<b>Cost Group #11</b>	<b>Percentage</b>	<b>Cost Group #12</b>	<b>Percentage</b>		
1 - BIMID	\$0	0.000%	\$0	0.000%	\$82,174	0.011%
2 - Union Cemetery	0	0.000%	0	0.000%	226,811	0.030%
3 - CC Mosquito	0	0.000%	0	0.000%	3,081,368	0.408%
4 - CCCFPD	0	0.000%	0	0.000%	35,011,978	4.636%
5 - CCCSD	0	0.000%	0	0.000%	31,584,169	4.183%
6 - First 5	0	0.000%	0	0.000%	2,140,380	0.283%
7 - County	0	0.000%	0	0.000%	613,565,068	81.252%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	3,881,797	0.514%
9 - ECCFPD	0	0.000%	0	0.000%	2,981,911	0.395%
10 - Housing Authority	0	0.000%	0	0.000%	5,215,890	0.691%
11 - IHSS	0	0.000%	0	0.000%	775,987	0.103%
12 - LAFCO	0	0.000%	0	0.000%	215,396	0.029%
13 - MOFD	0	0.000%	0	0.000%	7,347,757	0.973%
14 - Rodeo SD	0	0.000%	0	0.000%	609,667	0.081%
15 - RHFD	0	0.000%	2,175,185	100.000%	2,241,786	0.297%
16 - SRVFPD	18,790,925	100.000%	0	0.000%	22,113,973	2.928%
17 - Court	0	0.000%	0	0.000%	24,062,771	3.187%
18 - DDS (Term)	N/A	N/A	N/A	N/A	N/A	N/A
19 - DWD (Term)	N/A	N/A	N/A	N/A	N/A	N/A
20 - Pittsburg (Term)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total</b>	<b>\$18,790,925</b>	<b>100.000%</b>	<b>\$2,175,185</b>	<b>100.000%</b>	<b>\$755,138,882</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART ONE - Allocation of December 31, 2016 Net Pension Liability (NPL)</b>						
<b>Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>						
<b>Employer</b>	<b>Cost Group #1 &amp; 2</b>		<b>Cost Group #3</b>	<b>Cost Group #4</b>		<b>Cost Group #4 Percentage</b>
	<b>Cost Group #1 &amp; 2</b>	<b>Percentage</b>		<b>Percentage</b>	<b>Cost Group #4</b>	
1 - BIMID	\$137,084	0.014%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	5,140,418	0.540%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	0	0.000%	0	0.000%
5 - CCCSD	0	0.000%	87,847,116	100.000%	0	0.000%
6 - First 5	3,570,637	0.375%	0	0.000%	0	0.000%
7 - County	882,130,780	92.709%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	6,475,713	0.681%	0	0.000%	0	0.000%
9 - ECCFPD	95,687	0.010%	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	10,162,604	100.000%
11 - IHSS	1,294,522	0.136%	0	0.000%	0	0.000%
12 - LAFCO	359,329	0.038%	0	0.000%	0	0.000%
13 - MOFD	948,891	0.100%	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	111,106	0.012%	0	0.000%	0	0.000%
16 - SRVFPD	5,543,595	0.583%	0	0.000%	0	0.000%
17 - Court	40,142,135	4.219%	0	0.000%	0	0.000%
18 - DDS (Term) <sup>(1)</sup>	1,918,215	0.202%	0	0.000%	0	0.000%
19 - DWD (Term) <sup>(1)</sup>	823,144	0.087%	0	0.000%	0	0.000%
20 - Pittsburg (Term) <sup>(1)</sup>	<u>2,818,558</u>	<u>0.296%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
<b>Total</b>	<b>\$951,509,814</b>	<b>100.000%</b>	<b>\$87,847,116</b>	<b>100.000%</b>	<b>\$10,162,604</b>	<b>100.000%</b>

<sup>(1)</sup> The NPLs for the three terminated employers are determined based on the Plan's Fiduciary Net Positions from the December 31, 2016 bookkeeping account letters and the TPLs obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not add due to rounding.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART ONE - Allocation of December 31, 2016 Net Pension Liability (NPL)</b>				
<b>Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>				
<b>Employer</b>	<b>Cost Group #5</b>		<b>Cost Group #6</b>	
	<b>Cost Group #5</b>	<b>Percentage</b>	<b>Cost Group #6</b>	<b>Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	75,800	27.115%
3 - CC Mosquito	0	0.000%	0	0.000%
4 - CCCFPD	6,505,067	100.000%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%
7 - County	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	203,750	72.885%
15 - RHFD	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%
18 - DDS (Term) <sup>(1)</sup>	0	0.000%	0	0.000%
19 - DWD (Term) <sup>(1)</sup>	0	0.000%	0	0.000%
20 - Pittsburg (Term) <sup>(1)</sup>	0	0.000%	0	0.000%
<b>Total</b>	<b>\$6,505,067</b>	<b>100.000%</b>	<b>\$279,550</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART ONE - Allocation of December 31, 2016 Net Pension Liability (NPL) Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>						
<b>Employer</b>	<b>Cost Group #7 &amp; 9</b>	<b>Cost Group #7 &amp; 9 Percentage</b>	<b>Cost Group #8</b>	<b>Cost Group #8 Percentage</b>	<b>Cost Group #10</b>	<b>Cost Group #10 Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	0	0.000%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	244,402,232	91.308%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%	0	0.000%
7 - County	342,485,207	98.826%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	23,266,760	8.692%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%	32,081,901	100.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	0	0.000%	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%	0	0.000%
18 - DDS (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	0	0.000%
19 - DWD (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	0	0.000%
20 - Pittsburg (Term) <sup>(1)</sup>	<u>4,069,769</u>	<u>1.174%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total	\$346,554,976	100.000%	\$267,668,992	100.000%	\$32,081,901	100.000%

<sup>(1)</sup> The NPLs for the three terminated employers are determined based on the Plan's Fiduciary Net Positions from the December 31, 2016 bookkeeping account letters and the TPLs obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not add due to rounding.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART ONE - Allocation of December 31, 2016 Net Pension Liability (NPL)</b>						
<b>Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>						
<b>Employer</b>	<b>Cost Group #11</b>		<b>Cost Group #12</b>		<b>Total NPL</b>	<b>Total Percentage</b>
	<b>Cost Group #11</b>	<b>Percentage</b>	<b>Cost Group #12</b>	<b>Percentage</b>		
1 - BIMID	\$0	0.000%	\$0	0.000%	\$137,084	0.008%
2 - Union Cemetery	0	0.000%	0	0.000%	75,800	0.004%
3 - CC Mosquito	0	0.000%	0	0.000%	5,140,418	0.288%
4 - CCCFPD	0	0.000%	0	0.000%	250,907,299	14.063%
5 - CCCSD	0	0.000%	0	0.000%	87,847,116	4.924%
6 - First 5	0	0.000%	0	0.000%	3,570,637	0.200%
7 - County	0	0.000%	0	0.000%	1,224,615,987	68.639%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	6,475,713	0.363%
9 - ECCFPD	0	0.000%	0	0.000%	23,362,447	1.309%
10 - Housing Authority	0	0.000%	0	0.000%	10,162,604	0.570%
11 - IHSS	0	0.000%	0	0.000%	1,294,522	0.073%
12 - LAFCO	0	0.000%	0	0.000%	359,329	0.020%
13 - MOFD	0	0.000%	0	0.000%	33,030,792	1.851%
14 - Rodeo SD	0	0.000%	0	0.000%	203,750	0.011%
15 - RHFD	0	0.000%	14,582,000	100.000%	14,693,106	0.824%
16 - SRVFPD	66,947,600	100.000%	0	0.000%	72,491,195	4.063%
17 - Court	0	0.000%	0	0.000%	40,142,135	2.250%
18 - DDS (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	1,918,215	0.108%
19 - DWD (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	823,144	0.046%
20 - Pittsburg (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	6,888,327	0.386%
<b>Total</b>	<b>\$66,947,600</b>	<b>100.000%</b>	<b>\$14,582,000</b>	<b>100.000%</b>	<b>\$1,784,139,620</b>	<b>100.000%</b>

<sup>(1)</sup> The NPLs for the three terminated employers are determined based on the Plan's Fiduciary Net Positions from the December 31, 2016 bookkeeping account letters and the TPLs obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not add due to rounding.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART TWO - Allocation of December 31, 2016 Net Pension Liability (NPL) Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>						
<b>Employer</b>	<b>Cost Group #1 &amp; 2</b>	<b>Cost Group #1 &amp; 2 Percentage</b>	<b>Cost Group #3</b>	<b>Cost Group #3 Percentage</b>	<b>Cost Group #4</b>	<b>Cost Group #4 Percentage</b>
1 - BIMID	\$137,084	0.021%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	5,140,418	0.789%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	0	0.000%	0	0.000%
5 - CCCSD	0	0.000%	87,847,116	100.000%	0	0.000%
6 - First 5	2,423,899	0.372%	0	0.000%	0	0.000%
7 - County	596,820,257	91.592%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	6,475,713	0.994%	0	0.000%	0	0.000%
9 - ECCFPD	95,687	0.015%	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	10,162,604	100.000%
11 - IHSS	1,294,522	0.199%	0	0.000%	0	0.000%
12 - LAFCO	359,329	0.055%	0	0.000%	0	0.000%
13 - MOFD	488,012	0.075%	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	111,106	0.017%	0	0.000%	0	0.000%
16 - SRVFPD	5,543,595	0.851%	0	0.000%	0	0.000%
17 - Court	27,158,829	4.168%	0	0.000%	0	0.000%
18 - DDS (Term) <sup>(1)</sup>	1,918,215	0.294%	0	0.000%	0	0.000%
19 - DWD (Term) <sup>(1)</sup>	823,144	0.126%	0	0.000%	0	0.000%
20 - Pittsburg (Term) <sup>(1)</sup>	<u>2,818,558</u>	<u>0.433%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
<b>Total</b>	<b>\$651,608,368</b>	<b>100.000%</b>	<b>\$87,847,116</b>	<b>100.000%</b>	<b>\$10,162,604</b>	<b>100.000%</b>

<sup>(1)</sup> The NPLs for the three terminated employers are determined based on the Plan's Fiduciary Net Positions from the December 31, 2016 bookkeeping account letters and the TPLs obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not add due to rounding.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART TWO - Allocation of December 31, 2016 Net Pension Liability (NPL)</b>				
<b><u>Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</u></b>				
<b>Employer</b>	<b>Cost Group #5</b>		<b>Cost Group #6</b>	
	<b>Cost Group #5</b>	<b>Percentage</b>	<b>Cost Group #6</b>	<b>Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	75,800	27.115%
3 - CC Mosquito	0	0.000%	0	0.000%
4 - CCCFPD	6,505,067	100.000%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%
7 - County	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	203,750	72.885%
15 - RHFD	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%
18 - DDS (Term) <sup>(1)</sup>	0	0.000%	0	0.000%
19 - DWD (Term) <sup>(1)</sup>	0	0.000%	0	0.000%
20 - Pittsburg (Term) <sup>(1)</sup>	0	0.000%	0	0.000%
<b>Total</b>	<b>\$6,505,067</b>	<b>100.000%</b>	<b>\$279,550</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**PART TWO - Allocation of December 31, 2016 Net Pension Liability (NPL)  
Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers**

Employer	Cost Group	Cost Group	Cost Group #8		Cost Group #10	
	#7 & 9	#7 & 9 Percentage	Cost Group #8	Percentage	Cost Group #10	Percentage
1 - BIMID	\$0	0.000%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	0	0.000%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	160,618,981	87.347%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%	0	0.000%
7 - County	342,485,207	98.826%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	23,266,760	12.653%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%	32,081,901	100.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	0	0.000%	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%	0	0.000%
18 - DDS (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	0	0.000%
19 - DWD (Term) <sup>(1)</sup>	0	0.000%	0	0.000%	0	0.000%
20 - Pittsburg (Term) <sup>(1)</sup>	<u>4,069,769</u>	<u>1.174%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total	\$346,554,976	100.000%	\$183,885,741	100.000%	\$32,081,901	100.000%

<sup>(1)</sup> The NPLs for the three terminated employers are determined based on the Plan's Fiduciary Net Positions from the December 31, 2016 bookkeeping account letters and the TPLs obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not add due to rounding.



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**PART TWO - Allocation of December 31, 2016 Net Pension Liability (NPL)  
Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers**

Employer	Cost Group #11		Cost Group #12		Total NPL	Total Percentage	Total Percentage Excluding Terminated Employers <sup>(1)</sup>
	Cost Group #11	Percentage	Cost Group #12	Percentage			
1 - BIMID	\$0	0.000%	\$0	0.000%	\$137,084	0.010%	0.010%
2 - Union Cemetery	0	0.000%	0	0.000%	75,800	0.005%	0.005%
3 - CC Mosquito	0	0.000%	0	0.000%	5,140,418	0.367%	0.370%
4 - CCCFPD	0	0.000%	0	0.000%	167,124,048	11.934%	12.016%
5 - CCCSD	0	0.000%	0	0.000%	87,847,116	6.273%	6.316%
6 - First 5	0	0.000%	0	0.000%	2,423,899	0.173%	0.174%
7 - County	0	0.000%	0	0.000%	939,305,464	67.071%	67.536%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	6,475,713	0.462%	0.466%
9 - ECCFPD	0	0.000%	0	0.000%	23,362,447	1.668%	1.680%
10 - Housing Authority	0	0.000%	0	0.000%	10,162,604	0.726%	0.731%
11 - IHSS	0	0.000%	0	0.000%	1,294,522	0.092%	0.093%
12 - LAFCO	0	0.000%	0	0.000%	359,329	0.026%	0.026%
13 - MOFD	0	0.000%	0	0.000%	32,569,913	2.326%	2.342%
14 - Rodeo SD	0	0.000%	0	0.000%	203,750	0.015%	0.015%
15 - RHFD	0	0.000%	14,582,000	100.000%	14,693,106	1.049%	1.056%
16 - SRVFPD	66,947,600	100.000%	0	0.000%	72,491,195	5.176%	5.212%
17 - Court	0	0.000%	0	0.000%	27,158,829	1.939%	1.953%
18 - DDSD (Term) <sup>(2)</sup>	0	0.000%	0	0.000%	1,918,215	0.137%	N/A
19 - DWD (Term) <sup>(2)</sup>	0	0.000%	0	0.000%	823,144	0.059%	N/A
20 - Pittsburg (Term) <sup>(2)</sup>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>6,888,327</u>	<u>0.492%</u>	<u>N/A</u>
Total	\$66,947,600	100.000%	\$14,582,000	100.000%	\$1,400,454,923	100.000%	100.000%

<sup>(1)</sup> For informational purposes; these percentages show the allocation of the NPL for employers excluding terminated employers.

<sup>(2)</sup> The NPLs for the three terminated employers are determined based on the Plan Fiduciary Net Positions from the December 31, 2016 bookkeeping account letter and the TPLs obtained from internal valuation results (by rolling forward their TPLs from December 31, 2015).

Note: Results may not add due to rounding.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

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**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

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

1. Based on actual January 1, 2016 through December 31, 2016 compensation information that was provided by CCCERA.
2. The Net Pension Liability (NPL) for each Cost Group is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The TPL for each Cost Group is obtained from internal valuation results based on the actual participants in each Cost Group. The Plan's Fiduciary Net Position for each Cost Group was determined by adjusting the Valuation Value of Assets (VVA) for each Cost Group (which is used to determine employer contribution rates) by the ratio of the total CCCERA Plan's Fiduciary Net Position to total CCCERA VVA. Based on this methodology, any non-valuation reserves (such as the Post Retirement Death Benefit) are allocated amongst the cost groups based on each cost group's valuation value of assets.
3. For terminated employers, the TPL is obtained from internal valuation results for each employer. The Plan's Fiduciary Net Position for each terminated employer has been set equal to the amount in their respective bookkeeping account. The NPL is then determined separately for each terminated employer.
4. For Cost Groups that have one employer, all of the NPL for that Cost Group is allocated to the corresponding employer. The NPL has already been reduced by any proceeds from Pension Obligation Bonds and any UAAL prepayments.
5. For Cost Groups that have multiple employers, the NPL is allocated based on the actual compensation within the Cost Group.
  - a. Calculate ratio of employer's compensation to the total compensation for the Cost Group.
  - b. Multiply this ratio by an "adjusted" NPL. This adjusted NPL is larger than the actual NPL as it excludes proceeds from Pension Obligation Bonds and any Unfunded Actuarial Accrued Liability (UAAL) prepayments from the Cost Group's assets when determining the employer's proportionate share of the NPL for the Cost Group. It also excludes the NPLs for the three terminated employers. The allocation of the adjusted NPL is shown above in PART ONE of Exhibit 7.
  - c. The amounts of the proceeds from Pension Obligation Bonds and UAAL prepayments as of December 31, 2016 allocated to those employers within each Cost Group are as follows:

Cost Group #1: County	\$285,310,523
Cost Group #1: Court	\$12,983,306
Cost Group #1: MOFD	\$460,879
Cost Group #1: First 5	\$1,146,738
Cost Group #8: CCCFPD	\$83,783,251

Note that the proceeds from Pension Obligation Bonds for Contra Costa County and the Superior Court as of December 31, 2016 (total of \$298,293,829) were allocated proportionally based on the compensation information.

- d. Subtract from the adjusted NPL in PART ONE the outstanding balance of the proceeds from any Pension Obligation Bonds and any UAAL prepayments for those employers in each Cost Group that are subject to these adjustments. The resulting actual NPL is shown in PART TWO of Exhibit 7.

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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### EXHIBIT 7 (continued)

#### Determination of Proportionate Share

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

6. If the employer is in several Cost Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Cost Group.
7. Cost Group #1 and Cost Group #2 were combined and Cost Group #7 and Cost Group #9 were combined consistent with the determination of the UAAL rate in the annual funding actuarial valuation.

The following items are allocated based on the corresponding employer allocation percentage or proportionate share shown above after excluding terminated employers.

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**Actual Compensation by Employer and Cost Group  
January 1, 2015 to December 31, 2015**

<b>Employer</b>	<b>Cost Group #1 &amp; 2</b>	<b>Cost Group #1 &amp; 2 Percentage</b>	<b>Cost Group #3</b>	<b>Cost Group #3 Percentage</b>	<b>Cost Group #4</b>	<b>Cost Group #4 Percentage</b>
1 - BIMID	\$58,347	0.011%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	2,956,365	0.554%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	0	0.000%	0	0.000%
5 - CCCSD	0	0.000%	29,061,743	100.000%	0	0.000%
6 - First 5	1,962,961	0.368%	0	0.000%	0	0.000%
7 - County	496,691,250	93.119%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	3,724,967	0.698%	0	0.000%	0	0.000%
9 - ECCFPD	54,076	0.010%	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	4,841,907	100.000%
11 - IHSS	674,579	0.126%	0	0.000%	0	0.000%
12 - LAFCO	208,810	0.039%	0	0.000%	0	0.000%
13 - MOFD	508,374	0.095%	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	10,784	0.002%	0	0.000%	0	0.000%
16 - SRVFPD	2,902,073	0.544%	0	0.000%	0	0.000%
17 - Court	<u>23,639,297</u>	<u>4.432%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total	\$533,391,883	100.000%	\$29,061,743	100.000%	\$4,841,907	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>Actual Compensation by Employer and Cost Group January 1, 2015 to December 31, 2015</b>				
<b>Employer</b>	<b>Cost Group #5</b>		<b>Cost Group #6</b>	
	<b>Cost Group #5</b>	<b>Percentage</b>	<b>Cost Group #6</b>	<b>Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	213,336	27.295%
3 - CC Mosquito	0	0.000%	0	0.000%
4 - CCCFPD	3,500,227	100.000%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%
7 - County	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	568,265	72.705%
15 - RHFD	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%
17 - Court	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total	\$3,500,227	100.000%	\$781,601	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**Actual Compensation by Employer and Cost Group  
January 1, 2015 to December 31, 2015**

Employer	Cost Group	Cost Group	Cost Group #8		Cost Group #10	
	#7 & 9	#7 & 9 Percentage	Cost Group #8	Percentage	Cost Group #10	Percentage
1 - BIMID	\$0	0.000%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	0	0.000%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	28,775,170	91.934%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%	0	0.000%
7 - County	81,621,428	100.000%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	2,524,725	8.066%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%	6,349,629	100.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	0	0.000%	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%	0	0.000%
Total	\$81,621,428	100.000%	\$31,299,894	100.000%	\$6,349,629	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>Actual Compensation by Employer and Cost Group January 1, 2015 to December 31, 2015</b>						
<b>Employer</b>	<b>Cost Group #11</b>		<b>Cost Group #12</b>		<b>Total Compensation</b>	<b>Total Percentage</b>
	<b>Cost Group #11</b>	<b>Percentage</b>	<b>Cost Group #12</b>	<b>Percentage</b>		
1 - BIMID	\$0	0.000%	\$0	0.000%	\$58,347	0.008%
2 - Union Cemetery	0	0.000%	0	0.000%	213,336	0.030%
3 - CC Mosquito	0	0.000%	0	0.000%	2,956,365	0.416%
4 - CCCFPD	0	0.000%	0	0.000%	32,275,397	4.547%
5 - CCCSD	0	0.000%	0	0.000%	29,061,743	4.094%
6 - First 5	0	0.000%	0	0.000%	1,962,961	0.277%
7 - County	0	0.000%	0	0.000%	578,312,679	81.473%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	3,724,967	0.525%
9 - ECCFPD	0	0.000%	0	0.000%	2,578,801	0.363%
10 - Housing Authority	0	0.000%	0	0.000%	4,841,907	0.682%
11 - IHSS	0	0.000%	0	0.000%	674,579	0.095%
12 - LAFCO	0	0.000%	0	0.000%	208,810	0.029%
13 - MOFD	0	0.000%	0	0.000%	6,858,003	0.966%
14 - Rodeo SD	0	0.000%	0	0.000%	568,265	0.080%
15 - RHFD	0	0.000%	2,332,060	100.000%	2,342,844	0.330%
16 - SRVFPD	16,638,484	100.000%	0	0.000%	19,540,557	2.753%
17 - Court	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>23,639,297</u>	<u>3.330%</u>
Total	\$16,638,484	100.000%	\$2,332,060	100.000%	\$709,818,858	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**PART ONE - Allocation of December 31, 2015 Net Pension Liability (NPL)  
Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers**

Employer	Cost Group #1 & 2		Cost Group #3	Cost Group #3		Cost Group #4	Cost Group #4
	Cost Group #1 & 2	Percentage		Percentage	Percentage		
1 - BIMID	\$111,818	0.011%	\$0	0.000%	\$0	0.000%	
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%	
3 - CC Mosquito	5,665,700	0.554%	0	0.000%	0	0.000%	
4 - CCCFPD	0	0.000%	0	0.000%	0	0.000%	
5 - CCCSD	0	0.000%	91,746,888	100.000%	0	0.000%	
6 - First 5	3,761,900	0.368%	0	0.000%	0	0.000%	
7 - County	951,879,596	93.119%	0	0.000%	0	0.000%	
8 - CCCERA (the employer)	7,138,680	0.698%	0	0.000%	0	0.000%	
9 - ECCFPD	103,634	0.010%	0	0.000%	0	0.000%	
10 - Housing Authority	0	0.000%	0	0.000%	10,788,391	100.000%	
11 - IHSS	1,292,792	0.126%	0	0.000%	0	0.000%	
12 - LAFCO	400,173	0.039%	0	0.000%	0	0.000%	
13 - MOFD	974,269	0.095%	0	0.000%	0	0.000%	
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%	
15 - RHFD	20,667	0.002%	0	0.000%	0	0.000%	
16 - SRVFPD	5,561,652	0.544%	0	0.000%	0	0.000%	
17 - Court	<u>45,303,324</u>	<u>4.432%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	
Total	\$1,022,214,205	100.000%	\$91,746,888	100.000%	\$10,788,391	100.000%	

*Note: Results may not add due to rounding.*



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART ONE - Allocation of December 31, 2015 Net Pension Liability (NPL)</b>				
<b>Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>				
<b>Employer</b>	<b>Cost Group #5</b>		<b>Cost Group #6</b>	
	<b>Cost Group #5</b>	<b>Percentage</b>	<b>Cost Group #6</b>	<b>Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	147,774	27.295%
3 - CC Mosquito	0	0.000%	0	0.000%
4 - CCCFPD	6,532,307	100.000%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%
7 - County	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	393,628	72.705%
15 - RHFD	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%
17 - Court	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total	\$6,532,307	100.000%	\$541,402	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**PART ONE - Allocation of December 31, 2015 Net Pension Liability (NPL)  
Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers**

Employer	Cost Group	Cost Group	Cost Group #8		Cost Group #10	
	#7 & 9	#7 & 9 Percentage	Cost Group #8	Percentage	Cost Group #10	Percentage
1 - BIMID	\$0	0.000%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	0	0.000%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	260,869,166	91.934%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%	0	0.000%
7 - County	388,496,801	100.000%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	22,888,582	8.066%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%	38,837,001	100.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	0	0.000%	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%	0	0.000%
Total	\$388,496,801	100.000%	\$283,757,748	100.000%	\$38,837,001	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART ONE - Allocation of December 31, 2015 Net Pension Liability (NPL)</b>						
<b>Excluding Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</b>						
<b>Employer</b>	<b>Cost Group #11</b>		<b>Cost Group #12</b>		<b>Total NPL</b>	<b>Total Percentage</b>
	<b>Cost Group #11</b>	<b>Percentage</b>	<b>Cost Group #12</b>	<b>Percentage</b>		
1 - BIMID	\$0	0.000%	\$0	0.000%	\$111,818	0.006%
2 - Union Cemetery	0	0.000%	0	0.000%	147,774	0.008%
3 - CC Mosquito	0	0.000%	0	0.000%	5,665,700	0.293%
4 - CCCFPD	0	0.000%	0	0.000%	267,401,473	13.831%
5 - CCCSD	0	0.000%	0	0.000%	91,746,888	4.746%
6 - First 5	0	0.000%	0	0.000%	3,761,900	0.195%
7 - County	0	0.000%	0	0.000%	1,340,376,397	69.330%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	7,138,680	0.369%
9 - ECCFPD	0	0.000%	0	0.000%	22,992,216	1.189%
10 - Housing Authority	0	0.000%	0	0.000%	10,788,391	0.558%
11 - IHSS	0	0.000%	0	0.000%	1,292,792	0.067%
12 - LAFCO	0	0.000%	0	0.000%	400,173	0.021%
13 - MOFD	0	0.000%	0	0.000%	39,811,270	2.059%
14 - Rodeo SD	0	0.000%	0	0.000%	393,628	0.020%
15 - RHFD	0	0.000%	15,231,485	100.000%	15,252,152	0.789%
16 - SRVFPD	75,174,351	100.000%	0	0.000%	80,736,003	4.176%
17 - Court	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>45,303,324</u>	<u>2.343%</u>
<b>Total</b>	<b>\$75,174,351</b>	<b>100.000%</b>	<b>\$15,231,485</b>	<b>100.000%</b>	<b>\$1,933,320,579</b>	<b>100.000%</b>

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**PART TWO - Allocation of December 31, 2015 Net Pension Liability (NPL)  
Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers**

Employer	Cost Group #1 & 2		Cost Group #3	Cost Group #3		Cost Group #4	Cost Group #4	
	Cost Group #1 & 2	Percentage		Percentage	Percentage		Percentage	
1 - BIMID	\$111,818	0.016%	\$0	0.000%	\$0	0.000%		
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%		
3 - CC Mosquito	5,665,700	0.822%	0	0.000%	0	0.000%		
4 - CCCFPD	0	0.000%	0	0.000%	0	0.000%		
5 - CCCSD	0	0.000%	91,746,888	100.000%	0	0.000%		
6 - First 5	2,465,341	0.358%	0	0.000%	0	0.000%		
7 - County	635,607,803	92.240%	0	0.000%	0	0.000%		
8 - CCCERA (the employer)	7,138,680	1.036%	0	0.000%	0	0.000%		
9 - ECCFPD	103,634	0.015%	0	0.000%	0	0.000%		
10 - Housing Authority	0	0.000%	0	0.000%	10,788,391	100.000%		
11 - IHSS	1,292,792	0.188%	0	0.000%	0	0.000%		
12 - LAFCO	400,173	0.058%	0	0.000%	0	0.000%		
13 - MOFD	462,356	0.067%	0	0.000%	0	0.000%		
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%		
15 - RHFD	20,667	0.003%	0	0.000%	0	0.000%		
16 - SRVFPD	5,561,652	0.807%	0	0.000%	0	0.000%		
17 - Court	<u>30,250,828</u>	<u>4.390%</u>	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>		
Total	\$689,081,444	100.000%	\$91,746,888	100.000%	\$10,788,391	100.000%		

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART TWO - Allocation of December 31, 2015 Net Pension Liability (NPL)</b>				
<b><u>Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</u></b>				
<b>Employer</b>	<b>Cost Group #5</b>		<b>Cost Group #6</b>	
	<b>Cost Group #5</b>	<b>Percentage</b>	<b>Cost Group #6</b>	<b>Percentage</b>
1 - BIMID	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	147,774	27.295%
3 - CC Mosquito	0	0.000%	0	0.000%
4 - CCCFPD	6,532,307	100.000%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%
7 - County	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%
14 - Rodeo SD	0	0.000%	393,628	72.705%
15 - RHFD	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%
17 - Court	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>
Total	\$6,532,307	100.000%	\$541,402	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

**PART TWO - Allocation of December 31, 2015 Net Pension Liability (NPL)  
Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers**

Employer	Cost Group	Cost Group	Cost Group #8		Cost Group #10	
	#7 & 9	#7 & 9 Percentage	Cost Group #8	Percentage	Cost Group #10	Percentage
1 - BIMID	\$0	0.000%	\$0	0.000%	\$0	0.000%
2 - Union Cemetery	0	0.000%	0	0.000%	0	0.000%
3 - CC Mosquito	0	0.000%	0	0.000%	0	0.000%
4 - CCCFPD	0	0.000%	167,808,488	87.997%	0	0.000%
5 - CCCSD	0	0.000%	0	0.000%	0	0.000%
6 - First 5	0	0.000%	0	0.000%	0	0.000%
7 - County	388,496,801	100.000%	0	0.000%	0	0.000%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	0	0.000%
9 - ECCFPD	0	0.000%	22,888,582	12.003%	0	0.000%
10 - Housing Authority	0	0.000%	0	0.000%	0	0.000%
11 - IHSS	0	0.000%	0	0.000%	0	0.000%
12 - LAFCO	0	0.000%	0	0.000%	0	0.000%
13 - MOFD	0	0.000%	0	0.000%	38,837,001	100.000%
14 - Rodeo SD	0	0.000%	0	0.000%	0	0.000%
15 - RHFD	0	0.000%	0	0.000%	0	0.000%
16 - SRVFPD	0	0.000%	0	0.000%	0	0.000%
17 - Court	0	0.000%	0	0.000%	0	0.000%
Total	\$388,496,801	100.000%	\$190,697,070	100.000%	\$38,837,001	100.000%

*Note: Results may not add due to rounding.*

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 7 (continued)**

**Determination of Proportionate Share**

<b>PART TWO - Allocation of December 31, 2015 Net Pension Liability (NPL)</b>						
<b><u>Including Pension Obligation Bonds (POB) and UAAL Prepayments for Certain Employers</u></b>						
<b>Employer</b>	<b>Cost Group #11</b>		<b>Cost Group #12</b>		<b>Total NPL</b>	<b>Total Percentage</b>
	<b>Cost Group #11</b>	<b>Percentage</b>	<b>Cost Group #12</b>	<b>Percentage</b>		
1 - BIMID	\$0	0.000%	\$0	0.000%	\$111,818	0.007%
2 - Union Cemetery	0	0.000%	0	0.000%	147,774	0.010%
3 - CC Mosquito	0	0.000%	0	0.000%	5,665,700	0.376%
4 - CCCFPD	0	0.000%	0	0.000%	174,340,795	11.568%
5 - CCCSD	0	0.000%	0	0.000%	91,746,888	6.088%
6 - First 5	0	0.000%	0	0.000%	2,465,341	0.164%
7 - County	0	0.000%	0	0.000%	1,024,104,604	67.951%
8 - CCCERA (the employer)	0	0.000%	0	0.000%	7,138,680	0.474%
9 - ECCFPD	0	0.000%	0	0.000%	22,992,216	1.526%
10 - Housing Authority	0	0.000%	0	0.000%	10,788,391	0.716%
11 - IHSS	0	0.000%	0	0.000%	1,292,792	0.086%
12 - LAFCO	0	0.000%	0	0.000%	400,173	0.027%
13 - MOFD	0	0.000%	0	0.000%	39,299,357	2.608%
14 - Rodeo SD	0	0.000%	0	0.000%	393,628	0.026%
15 - RHFD	0	0.000%	15,231,485	100.000%	15,252,152	1.012%
16 - SRVFPD	75,174,351	100.000%	0	0.000%	80,736,003	5.357%
17 - Court	<u>0</u>	<u>0.000%</u>	<u>0</u>	<u>0.000%</u>	<u>30,250,828</u>	<u>2.007%</u>
Total	\$75,174,351	100.000%	\$15,231,485	100.000%	\$1,507,127,140	100.000%

*Note: Results may not add due to rounding.*

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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### EXHIBIT 7 (continued)

#### Determination of Proportionate Share

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##### Notes Regarding Determination of Proportionate Share as of December 31, 2015 Measurement Date:

1. Based on actual January 1, 2015 through December 31, 2015 compensation information that was provided by CCCERA.
2. The Net Pension Liability (NPL) for each Cost Group is the Total Pension Liability (TPL) minus the Plan's Fiduciary Net Position (plan assets). The TPL for each Cost Group is obtained from internal valuation results based on the actual participants in each Cost Group. The Plan's Fiduciary Net Position for each Cost Group was determined by adjusting the Valuation Value of Assets (VVA) for each Cost Group (which is used to determine employer contribution rates) by the ratio of the total CCCERA Plan's Fiduciary Net Position to total CCCERA VVA. Based on this methodology, any non-valuation reserves (such as the Post Retirement Death Benefit) are allocated amongst the cost groups based on each cost group's valuation value of assets.
3. For Cost Groups that have one employer, all of the NPL for that Cost Group is allocated to the corresponding employer. The NPL has already been reduced by any proceeds from Pension Obligation Bonds and any UAAL prepayments.
4. For Cost Groups that have multiple employers, the NPL is allocated based on the actual compensation within the Cost Group.
  - a. Calculate ratio of employer's compensation to the total compensation for the Cost Group.
  - b. Multiply this ratio by an "adjusted" NPL. This adjusted NPL is larger than the actual NPL as it excludes proceeds from Pension Obligation Bonds and any Unfunded Actuarial Accrued Liability (UAAL) prepayments from the Cost Group's assets when determining the employer's proportionate share of the NPL for the Cost Group. The allocation of the adjusted NPL is shown above in PART ONE of Exhibit 7.
  - c. The amounts of the proceeds from Pension Obligation Bonds and UAAL prepayments as of December 31, 2015 allocated to those employers within each Cost Group are as follows:

Cost Group #1: County	\$316,271,793
Cost Group #1: Court	\$15,052,496
Cost Group #1: MOFD	\$511,913
Cost Group #1: First 5	\$1,296,559
Cost Group #8: CCCFPD	\$93,060,678

Note that the proceeds from Pension Obligation Bonds for Contra Costa County and the Superior Court as of December 31, 2015 (total of \$331,324,289) were allocated proportionally based on the compensation information.
  - d. Subtract from the adjusted NPL in PART ONE the outstanding balance of the proceeds from any Pension Obligation Bonds and any UAAL prepayments for those employers in each Cost Group that are subject to these adjustments. The resulting actual NPL is shown in PART TWO of Exhibit 7.
5. If the employer is in several Cost Groups, the employer's total allocated NPL is the sum of its allocated NPL from each Cost Group.
6. Cost Group #1 and Cost Group #2 were combined and Cost Group #7 and Cost Group #9 were combined consistent with the determination of the UAAL rate in the annual funding actuarial valuation.



## **SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

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### **EXHIBIT 7 (continued)**

#### **Determination of Proportionate Share**

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##### **Notes Regarding Determination of Proportionate Share as of December 31, 2015 Measurement Date:**

The following items are allocated based on the corresponding employer allocation percentage or proportionate share shown above on the total Plan basis.

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8**

**Pension Expense: Total for all Employers**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$202,697,041	\$192,923,283
2. Interest on the Total Pension Liability	591,971,317	582,342,316
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	0
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(4,367,173)	(13,742,906)
6. Expensed portion of current-period changes of assumptions or other inputs	0	15,970,422
7. Member contributions <sup>(1)</sup>	(88,787,806)	(85,360,637)
8. Projected earnings on plan investments	(487,231,904)	(500,572,558)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,328,468)	85,392,308
10. Administrative expense	8,486,463	8,115,359
11. Other expenses	702,501	668,336
12. Recognition of beginning of year deferred outflows of resources as pension expense	101,362,730	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(56,345,112)	(42,602,206)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>0</u>
<b>Pension Expense</b>	<b>\$267,159,589</b>	<b>\$243,133,717</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 1 - BIMID**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$19,978	\$14,314
2. Interest on the Total Pension Liability	58,347	43,206
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	7,677	(5,484)
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	(430)	(1,020)
6. Expensed portion of current-period changes of assumptions or other inputs	0	1,185
7. Member contributions <sup>(1)</sup>	(8,751)	(6,333)
8. Projected earnings on plan investments	(48,023)	(37,139)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(131)	6,335
10. Administrative expense	836	602
11. Other expenses	(880)	50
12. Recognition of beginning of year deferred outflows of resources as pension expense	9,991	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(5,554)	(3,161)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(5,153)</u>	<u>331</u>
<b>Pension Expense</b>	<b>\$27,907</b>	<b>\$12,886</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 2 - Union Cemetery**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$11,047	\$18,914
2. Interest on the Total Pension Liability	32,262	57,099
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(2,261)	21,457
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	(238)	(1,347)
6. Expensed portion of current-period changes of assumptions or other inputs	0	1,566
7. Member contributions <sup>(1)</sup>	(4,839)	(8,370)
8. Projected earnings on plan investments	(26,554)	(49,081)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(72)	8,373
10. Administrative expense	463	796
11. Other expenses	(487)	66
12. Recognition of beginning of year deferred outflows of resources as pension expense	5,524	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(3,071)	(4,177)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>32,640</u>	<u>11,183</u>
<b>Pension Expense</b>	<b>\$44,414</b>	<b>\$56,479</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 3 - CC Mosquito**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$749,158	\$725,251
2. Interest on the Total Pension Liability	2,187,895	2,189,183
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	12,992	(114,998)
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	(16,141)	(51,663)
6. Expensed portion of current-period changes of assumptions or other inputs	0	60,037
7. Member contributions <sup>(1)</sup>	(328,155)	(320,894)
8. Projected earnings on plan investments	(1,800,784)	(1,881,788)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(4,910)	321,013
10. Administrative expense	31,366	30,508
11. Other expenses	(32,994)	2,512
12. Recognition of beginning of year deferred outflows of resources as pension expense	374,631	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(208,249)	(160,153)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(107,328)</u>	<u>7,670</u>
<b>Pension Expense</b>	<b>\$857,481</b>	<b>\$806,678</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 4 - CCCFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$24,356,439	\$22,316,895
2. Interest on the Total Pension Liability	71,132,332	67,363,940
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(1,464,214)	2,371,786
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	(524,767)	(1,589,746)
6. Expensed portion of current-period changes of assumptions or other inputs	0	1,847,420
7. Member contributions <sup>(1)</sup>	(10,668,902)	(9,874,310)
8. Projected earnings on plan investments	(58,546,657)	(57,905,014)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(159,631)	9,877,974
10. Administrative expense	1,019,749	938,765
11. Other expenses	(1,072,707)	77,311
12. Recognition of beginning of year deferred outflows of resources as pension expense	12,179,927	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(6,770,529)	(4,928,119)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>37,394</u>	<u>(2,334,392)</u>
<b>Pension Expense</b>	<b>\$29,518,434</b>	<b>\$28,162,510</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 5 - CCCSD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$12,802,725	\$11,744,271
2. Interest on the Total Pension Liability	37,390,012	35,450,291
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	327,813	(3,509,681)
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	(275,839)	(836,604)
6. Expensed portion of current-period changes of assumptions or other inputs	0	972,205
7. Member contributions <sup>(1)</sup>	(5,608,003)	(5,196,358)
8. Projected earnings on plan investments	(30,774,476)	(30,472,528)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(83,909)	5,198,286
10. Administrative expense	536,021	494,025
11. Other expenses	(563,858)	40,685
12. Recognition of beginning of year deferred outflows of resources as pension expense	6,402,259	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(3,558,862)	(2,593,424)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(2,976,178)</u>	<u>533,503</u>
<b>Pension Expense</b>	<b>\$13,617,705</b>	<b>\$11,824,671</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 6 - First 5**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$353,256	\$315,582
2. Interest on the Total Pension Liability	1,031,674	952,589
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	42,469	85,659
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	(7,611)	(22,480)
6. Expensed portion of current-period changes of assumptions or other inputs	0	26,124
7. Member contributions <sup>(1)</sup>	(154,737)	(139,632)
8. Projected earnings on plan investments	(849,137)	(818,831)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(2,315)	139,684
10. Administrative expense	14,790	13,275
11. Other expenses	(15,558)	1,093
12. Recognition of beginning of year deferred outflows of resources as pension expense	176,653	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(98,197)	(69,688)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>109,391</u>	<u>23,732</u>
<b>Pension Expense</b>	<b>\$600,678</b>	<b>\$507,107</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 7 - County**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$136,893,146	\$131,092,873
2. Interest on the Total Pension Liability	399,792,785	395,706,127
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	2,219,235	5,130,230
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(2,949,408)	(9,338,413)
6. Expensed portion of current-period changes of assumptions or other inputs	0	10,852,026
7. Member contributions <sup>(1)</sup>	(59,963,588)	(58,003,217)
8. Projected earnings on plan investments	(329,056,144)	(340,142,943)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(897,193)	58,024,738
10. Administrative expense	5,731,402	5,514,450
11. Other expenses	(6,029,048)	454,140
12. Recognition of beginning of year deferred outflows of resources as pension expense	68,456,169	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(38,053,145)	(28,948,530)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>8,922,572</u>	<u>3,792,342</u>
<b>Pension Expense</b>	<b>\$185,066,783</b>	<b>\$174,133,823</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 8 - CCCERA (the employer)**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$943,761	\$913,803
2. Interest on the Total Pension Liability	2,756,232	2,758,331
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	9,625	(17,825)
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	(20,334)	(65,095)
6. Expensed portion of current-period changes of assumptions or other inputs	0	75,646
7. Member contributions <sup>(1)</sup>	(413,398)	(404,320)
8. Projected earnings on plan investments	(2,268,562)	(2,371,019)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(6,185)	404,470
10. Administrative expense	39,513	38,439
11. Other expenses	(41,565)	3,166
12. Recognition of beginning of year deferred outflows of resources as pension expense	471,947	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(262,344)	(201,790)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(17,238)</u>	<u>587</u>
<b>Pension Expense</b>	<b>\$1,191,452</b>	<b>\$1,134,393</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 9 - ECCFPD**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$3,404,812	\$2,943,173
2. Interest on the Total Pension Liability	9,943,664	8,884,015
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	118,603	(1,877,402)
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	(73,358)	(209,657)
6. Expensed portion of current-period changes of assumptions or other inputs	0	243,639
7. Member contributions <sup>(1)</sup>	(1,491,417)	(1,302,233)
8. Projected earnings on plan investments	(8,184,299)	(7,636,564)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(22,315)	1,302,716
10. Administrative expense	142,552	123,805
11. Other expenses	(149,955)	10,196
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,702,645	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(946,459)	(649,925)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(2,450,801)</u>	<u>(573,399)</u>
<b>Pension Expense</b>	<b>\$1,993,672</b>	<b>\$1,258,364</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 10 - Housing Authority**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$1,481,084	\$1,380,994
2. Interest on the Total Pension Liability	4,325,468	4,168,551
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	25,837	(20,643)
4. Expensed portion of current-period benefit changes	0	0
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	(31,910)	(98,375)
6. Expensed portion of current-period changes of assumptions or other inputs	0	114,320
7. Member contributions <sup>(1)</sup>	(648,763)	(611,033)
8. Projected earnings on plan investments	(3,560,149)	(3,583,223)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(9,707)	611,259
10. Administrative expense	62,010	58,092
11. Other expenses	(65,230)	4,784
12. Recognition of beginning of year deferred outflows of resources as pension expense	740,646	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(411,707)	(304,957)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(27,867)</u>	<u>(7,224)</u>
<b>Pension Expense</b>	<b>\$1,879,712</b>	<b>\$1,712,545</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 11 - IHSS**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$188,661	\$165,488
2. Interest on the Total Pension Liability	550,982	499,525
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	24,416	32
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	(4,065)	(11,788)
6. Expensed portion of current-period changes of assumptions or other inputs	0	13,699
7. Member contributions <sup>(1)</sup>	(82,640)	(73,221)
8. Projected earnings on plan investments	(453,495)	(429,384)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(1,236)	73,248
10. Administrative expense	7,899	6,961
11. Other expenses	(8,309)	573
12. Recognition of beginning of year deferred outflows of resources as pension expense	94,344	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(52,444)	(36,544)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(2,397)</u>	<u>(2,429)</u>
<b>Pension Expense</b>	<b>\$261,716</b>	<b>\$206,160</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 12 - LAFCO**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$52,367	\$51,225
2. Interest on the Total Pension Liability	152,940	154,624
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	390	(7,922)
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	(1,128)	(3,649)
6. Expensed portion of current-period changes of assumptions or other inputs	0	4,240
7. Member contributions <sup>(1)</sup>	(22,939)	(22,665)
8. Projected earnings on plan investments	(125,880)	(132,912)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(343)	22,673
10. Administrative expense	2,193	2,155
11. Other expenses	(2,306)	177
12. Recognition of beginning of year deferred outflows of resources as pension expense	26,188	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(14,557)	(11,312)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(6,105)</u>	<u>1,817</u>
<b>Pension Expense</b>	<b>\$60,820</b>	<b>\$58,451</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 13 - MOFD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$4,746,696	\$5,030,604
2. Interest on the Total Pension Liability	13,862,600	15,184,969
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(1,240,642)	(254,240)
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	(102,269)	(358,356)
6. Expensed portion of current-period changes of assumptions or other inputs	0	416,440
7. Member contributions <sup>(1)</sup>	(2,079,205)	(2,225,836)
8. Projected earnings on plan investments	(11,409,845)	(13,052,767)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(31,110)	2,226,662
10. Administrative expense	198,733	211,613
11. Other expenses	(209,054)	17,427
12. Recognition of beginning of year deferred outflows of resources as pension expense	2,373,681	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,319,472)	(1,110,881)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(895,195)</u>	<u>(640,955)</u>
<b>Pension Expense</b>	<b>\$3,894,918</b>	<b>\$5,444,680</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 14 - Rodeo SD**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$29,694	\$50,385
2. Interest on the Total Pension Liability	86,721	152,095
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(5,449)	56,007
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	(640)	(3,589)
6. Expensed portion of current-period changes of assumptions or other inputs	0	4,171
7. Member contributions <sup>(1)</sup>	(13,007)	(22,294)
8. Projected earnings on plan investments	(71,377)	(130,738)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(195)	22,303
10. Administrative expense	1,243	2,120
11. Other expenses	(1,308)	175
12. Recognition of beginning of year deferred outflows of resources as pension expense	14,849	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(8,254)	(11,127)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>88,092</u>	<u>32,085</u>
<b>Pension Expense</b>	<b>\$120,369</b>	<b>\$151,593</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 15 – RHFD**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$2,141,354	\$1,952,386
2. Interest on the Total Pension Liability	6,253,767	5,893,314
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(138,010)	(590,374)
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	(46,136)	(139,078)
6. Expensed portion of current-period changes of assumptions or other inputs	0	161,621
7. Member contributions <sup>(1)</sup>	(937,982)	(863,851)
8. Projected earnings on plan investments	(5,147,268)	(5,065,803)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(14,034)	864,172
10. Administrative expense	89,654	82,128
11. Other expenses	(94,310)	6,764
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,070,827	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(595,247)	(431,135)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(1,101,284)</u>	<u>(510,910)</u>
<b>Pension Expense</b>	<b>\$1,481,331</b>	<b>\$1,359,234</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 16 - SRVFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$10,564,772	\$10,334,797
2. Interest on the Total Pension Liability	30,854,134	31,195,770
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	(85,757)	(1,847,448)
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	(227,621)	(736,200)
6. Expensed portion of current-period changes of assumptions or other inputs	0	855,527
7. Member contributions <sup>(1)</sup>	(4,627,709)	(4,572,724)
8. Projected earnings on plan investments	(25,395,012)	(26,815,407)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(69,241)	4,574,421
10. Administrative expense	442,323	434,735
11. Other expenses	(465,294)	35,802
12. Recognition of beginning of year deferred outflows of resources as pension expense	5,283,126	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(2,936,763)	(2,282,178)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>(2,654,277)</u>	<u>(806,829)</u>
<b>Pension Expense</b>	<b>\$10,682,681</b>	<b>\$10,370,266</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 17 - Court**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$3,958,091	\$3,872,328
2. Interest on the Total Pension Liability	11,559,502	11,688,687
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	147,276	580,846
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	(85,278)	(275,846)
6. Expensed portion of current-period changes of assumptions or other inputs	0	320,556
7. Member contributions <sup>(1)</sup>	(1,733,771)	(1,713,346)
8. Projected earnings on plan investments	(9,514,242)	(10,047,417)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	(25,941)	1,713,981
10. Administrative expense	165,716	162,890
11. Other expenses	(174,322)	13,415
12. Recognition of beginning of year deferred outflows of resources as pension expense	1,979,323	0
13. Recognition of beginning of year deferred inflows of resources as pension expense	(1,100,258)	(855,105)
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>1,053,734</u>	<u>472,888</u>
<b>Pension Expense</b>	<b>\$6,229,830</b>	<b>\$5,933,877</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 18 - DDSD (Term)**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
<b>Components of Pension Expense</b>		
1. Service Cost	\$0	N/A
2. Interest on the Total Pension Liability	0	N/A
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	N/A
4. Expensed portion of current-period benefit changes	0	N/A
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	0	N/A
6. Expensed portion of current-period changes of assumptions or other inputs	0	N/A
7. Member contributions <sup>(1)</sup>	0	N/A
8. Projected earnings on plan investments	0	N/A
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	0	N/A
10. Administrative expense	0	N/A
11. Other expenses <sup>(2)</sup>	1,918,215	N/A
12. Recognition of beginning of year deferred outflows of resources as pension expense	0	N/A
13. Recognition of beginning of year deferred inflows of resources as pension expense	0	N/A
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>N/A</u>
<b>Pension Expense</b>	<b>\$1,918,215</b>	<b>N/A</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

<sup>(2)</sup> Equals the NPL allocated to this employer on December 31, 2016.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 19 - DWD (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$0	N/A
2. Interest on the Total Pension Liability	0	N/A
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	N/A
4. Expensed portion of current-period benefit changes	0	N/A
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	0	N/A
6. Expensed portion of current-period changes of assumptions or other inputs	0	N/A
7. Member contributions <sup>(1)</sup>	0	N/A
8. Projected earnings on plan investments	0	N/A
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	0	N/A
10. Administrative expense	0	N/A
11. Other expenses <sup>(2)</sup>	823,144	N/A
12. Recognition of beginning of year deferred outflows of resources as pension expense	0	N/A
13. Recognition of beginning of year deferred inflows of resources as pension expense	0	N/A
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>N/A</u>
<b>Pension Expense</b>	<b>\$823,144</b>	<b>N/A</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

<sup>(2)</sup> Equals the NPL allocated to this employer on December 31, 2016.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 8 (continued)**

**Pension Expense: 20 - Pittsburg (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Components of Pension Expense</b>		
1. Service Cost	\$0	N/A
2. Interest on the Total Pension Liability	0	N/A
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0	N/A
4. Expensed portion of current-period benefit changes	0	N/A
5. Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	0	N/A
6. Expensed portion of current-period changes of assumptions or other inputs	0	N/A
7. Member contributions <sup>(1)</sup>	0	N/A
8. Projected earnings on plan investments	0	N/A
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	0	N/A
10. Administrative expense	0	N/A
11. Other expenses <sup>(2)</sup>	6,888,327	N/A
12. Recognition of beginning of year deferred outflows of resources as pension expense	0	N/A
13. Recognition of beginning of year deferred inflows of resources as pension expense	0	N/A
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>0</u>	<u>N/A</u>
<b>Pension Expense</b>	<b>\$6,888,327</b>	<b>N/A</b>

<sup>(1)</sup> Includes "employer subvention of member contributions" and excludes "member subvention of employer contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "employer subvention of member contributions" and included "member subvention of employer contributions".

<sup>(2)</sup> Equals the NPL allocated to this employer on December 31, 2016.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9**

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

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$39,064,503	\$41,703,950
2. Changes of assumptions or other inputs	40,245,463	56,215,885
3. Net excess of projected over actual earnings on pension plan investments (if any)	245,519,675	333,554,162
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$324,829,641	\$431,473,997
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$39,064,503	\$41,703,950
7. Changes of assumptions or other inputs	26,297	42,734
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>114,085,459</u>	<u>152,151,634</u>
10. Total Deferred Inflows of Resources	\$153,176,259	\$193,898,318

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

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

2017	N/A	\$45,017,618
2018	\$39,321,977	45,017,618
2019	55,294,184	60,989,825
2020	80,854,977	86,550,618
2021	(3,817,756)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 1 – BIMID**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$27,937	\$862
2. Changes of assumptions or other inputs	3,967	4,171
3. Net excess of projected over actual earnings on pension plan investments (if any)	24,199	24,747
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$56,103	\$29,780
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$13,820	\$19,304
7. Changes of assumptions or other inputs	3	3
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>11,245</u>	<u>11,289</u>
10. Total Deferred Inflows of Resources	\$25,068	\$30,596

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

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

2017	N/A	\$(1,813)
2018	\$6,400	(1,813)
2019	7,843	(759)
2020	12,794	3,569
2021	3,998	0
2022	0	0
Thereafter	0	0

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



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 2 - Union Cemetery**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$71,965	\$104,605
2. Changes of assumptions or other inputs	2,193	5,512
3. Net excess of projected over actual earnings on pension plan investments (if any)	13,381	32,705
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$87,539	\$142,822
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$8,071	\$0
7. Changes of assumptions or other inputs	1	4
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>6,218</u>	<u>14,918</u>
10. Total Deferred Inflows of Resources	\$14,290	\$14,922

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

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

2017	N/A	\$37,054
2018	\$32,522	37,054
2019	28,920	34,147
2020	13,304	19,645
2021	(1,497)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 3 - CC Mosquito**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$58,652	\$19,940
2. Changes of assumptions or other inputs	148,745	211,331
3. Net excess of projected over actual earnings on pension plan investments (if any)	907,428	1,253,921
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$1,114,825	\$1,485,192
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$289,795	\$404,793
7. Changes of assumptions or other inputs	97	161
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>421,654</u>	<u>571,979</u>
10. Total Deferred Inflows of Resources	\$711,546	\$976,933

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

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

2017	N/A	\$61,905
2018	\$50,996	61,905
2019	106,958	118,879
2020	252,029	265,570
2021	(6,704)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 4 - CCCFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$5,976,900	\$8,348,686
2. Changes of assumptions or other inputs	4,835,967	6,502,917
3. Net excess of projected over actual earnings on pension plan investments (if any)	29,502,083	38,584,733
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$40,314,950	\$53,436,336
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$8,962,274	\$6,069,420
7. Changes of assumptions or other inputs	3,160	4,943
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>13,708,713</u>	<u>17,600,530</u>
10. Total Deferred Inflows of Resources	\$22,674,147	\$23,674,893

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

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

2017	N/A	\$5,244,922
2018	\$3,298,179	5,244,922
2019	6,151,184	8,026,304
2020	9,484,793	11,245,295
2021	(1,293,353)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 5 - CCCSD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$2,023,895	\$1,387,107
2. Changes of assumptions or other inputs	2,541,979	3,422,162
3. Net excess of projected over actual earnings on pension plan investments (if any)	15,507,481	20,305,225
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$20,073,355	\$25,114,494
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$8,844,394	\$12,354,075
7. Changes of assumptions or other inputs	1,661	2,601
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>7,205,850</u>	<u>9,262,284</u>
10. Total Deferred Inflows of Resources	\$16,051,905	\$21,618,960

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

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

2017	N/A	\$(235,715)
2018	\$(164,716)	(235,715)
2019	630,717	523,197
2020	3,609,732	3,443,767
2021	(54,283)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 6 - First 5**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$405,445	\$363,223
2. Changes of assumptions or other inputs	70,139	91,957
3. Net excess of projected over actual earnings on pension plan investments (if any)	427,886	545,624
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$903,470	\$1,000,804
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	46	70
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>198,826</u>	<u>248,888</u>
10. Total Deferred Inflows of Resources	\$198,872	\$248,958

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

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

2017	N/A	\$183,030
2018	\$220,389	183,030
2019	238,732	199,664
2020	227,924	186,122
2021	17,553	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 7 - County**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$26,918,609	\$27,918,510
2. Changes of assumptions or other inputs	27,180,109	38,199,131
3. Net excess of projected over actual earnings on pension plan investments (if any)	165,813,768	226,652,645
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$219,912,486	\$292,770,286
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	17,759	29,040
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>77,048,568</u>	<u>103,388,218</u>
10. Total Deferred Inflows of Resources	\$77,066,327	\$103,417,258

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

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

2017	N/A	\$39,512,395
2018	\$37,698,234	39,512,395
2019	46,968,264	48,848,700
2020	59,493,047	61,479,538
2021	(1,313,386)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 8 - CCCERA (the employer)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$35,304	\$1,528
2. Changes of assumptions or other inputs	187,384	266,273
3. Net excess of projected over actual earnings on pension plan investments (if any)	1,143,145	1,579,917
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$1,365,833	\$1,847,718
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$44,921	\$62,746
7. Changes of assumptions or other inputs	122	202
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>531,184</u>	<u>720,684</u>
10. Total Deferred Inflows of Resources	\$576,227	\$783,632

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

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

2017	N/A	\$195,993
2018	\$175,471	195,993
2019	249,605	271,414
2020	376,817	400,686
2021	(12,287)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 9 - ECCFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$423,411	\$0
2. Changes of assumptions or other inputs	676,025	857,610
3. Net excess of projected over actual earnings on pension plan investments (if any)	4,124,127	5,088,588
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$5,223,563	\$5,946,198
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$5,648,494	\$8,099,295
7. Changes of assumptions or other inputs	442	652
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,916,355</u>	<u>2,321,173</u>
10. Total Deferred Inflows of Resources	\$7,565,291	\$10,421,120

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

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

2017	N/A	\$(1,764,028)
2018	\$(1,671,685)	(1,764,028)
2019	(1,174,034)	(1,291,003)
2020	500,518	344,137
2021	3,473	0
2022	0	0
Thereafter	0	0

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



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 10 - Housing Authority**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$92,240	\$0
2. Changes of assumptions or other inputs	294,069	402,407
3. Net excess of projected over actual earnings on pension plan investments (if any)	1,793,985	2,387,664
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$2,180,294	\$2,790,071
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$63,580	\$91,447
7. Changes of assumptions or other inputs	192	306
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>833,610</u>	<u>1,089,139</u>
10. Total Deferred Inflows of Resources	\$897,382	\$1,180,892

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

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

2017	N/A	\$294,380
2018	\$285,291	294,380
2019	404,887	411,602
2020	605,900	608,817
2021	(13,166)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 11 - IHSS**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$87,245	\$114
2. Changes of assumptions or other inputs	37,459	48,221
3. Net excess of projected over actual earnings on pension plan investments (if any)	228,519	286,118
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$353,223	\$334,453
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$3,885	\$6,314
7. Changes of assumptions or other inputs	24	37
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>106,186</u>	<u>130,513</u>
10. Total Deferred Inflows of Resources	\$110,095	\$136,864

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

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

2017	N/A	\$36,218
2018	\$58,618	36,218
2019	74,458	50,892
2020	99,690	74,261
2021	10,362	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 12 - LAFCO**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$4,303	\$4,726
2. Changes of assumptions or other inputs	10,398	14,926
3. Net excess of projected over actual earnings on pension plan investments (if any)	63,432	88,565
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$78,133	\$108,217
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$19,965	\$27,887
7. Changes of assumptions or other inputs	7	11
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>29,475</u>	<u>40,399</u>
10. Total Deferred Inflows of Resources	\$49,447	\$68,297

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

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

2017	N/A	\$5,848
2018	\$4,444	5,848
2019	7,846	9,364
2020	17,158	18,860
2021	(762)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 13 - MOFD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	942,456	1,465,867
3. Net excess of projected over actual earnings on pension plan investments (if any)	5,749,503	8,697,650
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$6,691,959	\$10,163,517
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$6,095,307	\$2,561,411
7. Changes of assumptions or other inputs	616	1,114
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>2,671,618</u>	<u>3,967,457</u>
10. Total Deferred Inflows of Resources	\$8,767,541	\$6,529,982

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

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

2017	N/A	\$278,670
2018	\$(1,215,007)	278,670
2019	(584,594)	951,537
2020	520,588	2,124,658
2021	(796,569)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 14 - Rodeo SD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$192,472	\$280,564
2. Changes of assumptions or other inputs	5,896	14,682
3. Net excess of projected over actual earnings on pension plan investments (if any)	35,968	87,117
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$234,336	\$382,363
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$19,452	\$0
7. Changes of assumptions or other inputs	4	11
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>16,713</u>	<u>39,739</u>
10. Total Deferred Inflows of Resources	\$36,169	\$39,750

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

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

2017	N/A	\$99,850
2018	\$88,404	99,850
2019	77,907	91,185
2020	35,520	51,728
2021	(3,664)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 15 - RHFD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	425,165	568,906
3. Net excess of projected over actual earnings on pension plan investments (if any)	2,593,745	3,375,574
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$3,018,910	\$3,944,480
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$2,797,894	\$3,406,483
7. Changes of assumptions or other inputs	278	432
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>1,205,234</u>	<u>1,539,777</u>
10. Total Deferred Inflows of Resources	\$4,003,406	\$4,946,692

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

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

2017	N/A	\$(645,705)
2018	\$(823,885)	(645,705)
2019	(450,784)	(279,701)
2020	409,171	568,899
2021	(118,998)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 16 - SRVFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
2. Changes of assumptions or other inputs	2,097,634	3,011,455
3. Net excess of projected over actual earnings on pension plan investments (if any)	12,796,730	17,868,320
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$14,894,364	\$20,879,775
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$6,252,651	\$8,600,775
7. Changes of assumptions or other inputs	1,371	2,289
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>5,946,248</u>	<u>8,150,682</u>
10. Total Deferred Inflows of Resources	\$12,200,270	\$16,753,746

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

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

2017	N/A	\$(242,707)
2018	\$(690,533)	(242,707)
2019	464,684	935,646
2020	3,167,811	3,675,797
2021	(247,868)	0
2022	0	0
Thereafter	0	0

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 17 - Court**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$2,746,125	\$3,274,085
2. Changes of assumptions or other inputs	785,878	1,128,357
3. Net excess of projected over actual earnings on pension plan investments (if any)	4,794,295	6,695,049
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>0</u>
5. Total Deferred Outflows of Resources	\$8,326,298	\$11,097,491
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
7. Changes of assumptions or other inputs	514	858
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	0
9. Difference between expected and actual experience in the Total Pension Liability	<u>2,227,762</u>	<u>3,053,965</u>
10. Total Deferred Inflows of Resources	\$2,228,276	\$3,054,823

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

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

2017	N/A	\$1,957,321
2018	\$1,968,855	1,957,321
2019	2,091,591	2,088,757
2020	2,028,181	2,039,269
2021	9,395	0
2022	0	0
Thereafter	0	0

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



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 18 - DDSD (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	N/A
2. Changes of assumptions or other inputs	0	N/A
3. Net excess of projected over actual earnings on pension plan investments (if any)	0	N/A
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>N/A</u>
5. Total Deferred Outflows of Resources	\$0	N/A
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	N/A
7. Changes of assumptions or other inputs	0	N/A
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	N/A
9. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>N/A</u>
10. Total Deferred Inflows of Resources	\$0	N/A

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

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

2017	N/A	N/A
2018	\$0	N/A
2019	0	N/A
2020	0	N/A
2021	0	N/A
2022	0	N/A
Thereafter	0	N/A

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 19 - DWD (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	N/A
2. Changes of assumptions or other inputs	0	N/A
3. Net excess of projected over actual earnings on pension plan investments (if any)	0	N/A
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>N/A</u>
5. Total Deferred Outflows of Resources	\$0	N/A
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	N/A
7. Changes of assumptions or other inputs	0	N/A
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	N/A
9. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>N/A</u>
10. Total Deferred Inflows of Resources	\$0	N/A

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

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

2017	N/A	N/A
2018	\$0	N/A
2019	0	N/A
2020	0	N/A
2021	0	N/A
2022	0	N/A
Thereafter	0	N/A

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 9 (continued)**

**Deferred Outflows of Resources and Deferred Inflows of Resources: 20 - Pittsburg (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Deferred Outflows of Resources</b>		
1. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	N/A
2. Changes of assumptions or other inputs	0	N/A
3. Net excess of projected over actual earnings on pension plan investments (if any)	0	N/A
4. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>N/A</u>
5. Total Deferred Outflows of Resources	\$0	N/A
<b>Deferred Inflows of Resources</b>		
6. Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	N/A
7. Changes of assumptions or other inputs	0	N/A
8. Net excess of actual over projected earnings on pension plan investments (if any)	0	N/A
9. Difference between expected and actual experience in the Total Pension Liability	<u>0</u>	<u>N/A</u>
10. Total Deferred Inflows of Resources	\$0	N/A

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

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

2017	N/A	N/A
2018	\$0	N/A
2019	0	N/A
2020	0	N/A
2021	0	N/A
2022	0	N/A
Thereafter	0	N/A

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

## SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association

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### EXHIBIT 9 (continued)

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

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There are changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ended December 31, 2016. The net effect of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources for the current period is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through CCCERA which is 4.57 years determined as of December 31, 2015 (the beginning of the measurement period ending December 31, 2016). This is described in Paragraph 33a. of GAS 68.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended December 31, 2016 is recognized over the same period. This difference is calculated based on actual employer contributions reported to us by CCCERA for each active employer. Those contributions are then further adjusted so that the employer contributions in total match the employer contributions reported on CCCERA's financial statements.

The net effects of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources and the difference between the actual employer contributions and the proportionate share of the employer contributions for prior periods are continued to be recognized based on the expected remaining service lives of all employees calculated as of those prior measurement dates.

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

- Calculating each active 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: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10**

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

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	100.000%	\$1,471,449,251	\$638,635,912	230.41%	81.44%
2015	100.000%	1,195,701,397	671,485,798	178.07%	85.25%
2016	100.000%	1,507,127,140	709,818,858	212.33%	82.24%
2017	100.000%	1,400,454,923	755,138,882	185.46%	84.16%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 1 - BIMID**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.010%	\$141,029	\$98,547	143.11%	74.40%
2015	0.010%	114,600	63,762	179.73%	79.57%
2016	0.007%	111,818	58,347	191.64%	77.84%
2017	0.010%	137,084	82,174	166.82%	80.32%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 2 - Union Cemetery**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.006%	\$81,639	\$202,342	40.35%	94.52%
2015	0.006%	66,340	213,716	31.04%	95.83%
2016	0.010%	147,774	213,336	69.27%	91.43%
2017	0.005%	75,800	226,811	33.42%	95.67%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 3 - CC Mosquito**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.427%	\$6,281,902	\$2,787,246	225.38%	74.40%
2015	0.427%	5,104,681	2,840,172	179.73%	79.57%
2016	0.376%	5,665,700	2,956,365	191.64%	77.84%
2017	0.367%	5,140,418	3,081,368	166.82%	80.32%

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



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 4 - CCCFPD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	9.723%	\$143,074,496	\$30,880,667	463.31%	83.82%
2015	9.723%	116,262,504	29,582,625	393.01%	86.85%
2016	11.568%	174,340,795	32,275,397	540.17%	81.54%
2017	11.934%	167,124,048	35,011,978	477.33%	82.69%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 5 - CCCSD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	7.488%	\$110,183,830	\$25,791,346	427.21%	67.22%
2015	7.488%	89,535,510	26,906,131	332.77%	73.86%
2016	6.088%	91,746,888	29,061,743	315.70%	74.14%
2017	6.273%	87,847,116	31,584,169	278.14%	76.44%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 6 - First 5**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.141%	\$2,071,332	\$1,631,923	126.93%	86.00%
2015	0.141%	1,683,167	1,735,009	97.01%	88.97%
2016	0.164%	2,465,341	1,962,961	125.59%	85.48%
2017	0.173%	2,423,899	2,140,380	113.25%	86.64%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 7 - County**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	67.521%	\$993,538,168	\$513,965,613	193.31%	82.57%
2015	67.521%	807,350,288	547,669,428	147.42%	86.21%
2016	67.951%	1,024,104,604	578,312,679	177.08%	83.30%
2017	67.071%	939,305,464	613,565,068	153.09%	85.20%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 8 - CCCERA (the employer)**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.490%	\$7,215,926	\$3,280,849	219.94%	74.40%
2015	0.490%	5,863,670	3,262,463	179.73%	79.57%
2016	0.474%	7,138,680	3,724,967	191.64%	77.84%
2017	0.462%	6,475,713	3,881,797	166.82%	80.32%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 9 - ECCFPD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	2.033%	\$29,920,976	\$3,075,280	972.95%	69.43%
2015	2.033%	24,313,820	3,033,964	801.39%	74.65%
2016	1.526%	22,992,216	2,578,801	891.59%	70.89%
2017	1.668%	23,362,447	2,981,911	783.47%	73.30%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 10 - Housing Authority**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.724%	\$10,648,283	\$4,677,572	227.65%	80.04%
2015	0.724%	8,652,807	4,691,885	184.42%	84.06%
2016	0.716%	10,788,391	4,841,907	222.81%	80.83%
2017	0.726%	10,162,604	5,215,890	194.84%	82.73%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 11 - IHSS**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.087%	\$1,280,362	\$600,371	213.26%	74.40%
2015	0.087%	1,040,424	578,877	179.73%	79.57%
2016	0.086%	1,292,792	674,579	191.64%	77.84%
2017	0.092%	1,294,522	775,987	166.82%	80.32%

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



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 12 - LAFCO**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.030%	\$448,684	\$202,880	221.16%	74.40%
2015	0.030%	364,601	202,859	179.73%	79.57%
2016	0.027%	400,173	208,810	191.64%	77.84%
2017	0.026%	359,329	215,396	166.82%	80.32%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 13 - MOFD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	2.393%	\$35,211,427	\$7,353,174	478.86%	80.06%
2015	2.393%	28,612,847	7,350,163	389.28%	83.79%
2016	2.608%	39,299,357	6,858,003	573.04%	78.77%
2017	2.326%	32,569,913	7,347,757	443.26%	82.41%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 14 - Rodeo SD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	0.015%	\$225,142	\$546,354	41.21%	94.52%
2015	0.015%	182,951	589,379	31.04%	95.83%
2016	0.026%	393,628	568,265	69.27%	91.43%
2017	0.015%	203,750	609,667	33.42%	95.67%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 15 - RHFD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	1.129%	\$16,612,346	\$1,766,704	940.30%	59.86%
2015	1.129%	13,499,212	2,069,510	652.29%	65.89%
2016	1.012%	15,252,152	2,342,844	651.01%	63.59%
2017	1.049%	14,693,106	2,241,786	655.42%	66.55%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 16 - SRVFPD**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	5.815%	\$85,561,055	\$19,053,093	449.07%	76.94%
2015	5.815%	69,527,014	18,614,252	373.51%	81.67%
2016	5.357%	80,736,003	19,540,557	413.17%	79.70%
2017	5.176%	72,491,195	22,113,973	327.81%	82.68%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 17 - Court**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	1.968%	\$28,952,654	\$22,721,953	127.42%	84.75%
2015	1.968%	23,526,961	22,081,605	106.55%	87.89%
2016	2.007%	30,250,828	23,639,297	127.97%	85.21%
2017	1.939%	27,158,829	24,062,771	112.87%	86.68%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 18 - DDSD (Term)**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	N/A	N/A	N/A	N/A	N/A
2015	N/A	N/A	N/A	N/A	N/A
2016	N/A	N/A	N/A	N/A	N/A
2017	0.137%	\$1,918,215	\$0	N/A	86.09%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 19 - DWD (Term)**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	N/A	N/A	N/A	N/A	N/A
2015	N/A	N/A	N/A	N/A	N/A
2016	N/A	N/A	N/A	N/A	N/A
2017	0.059%	\$823,144	\$0	N/A	71.42%

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



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 10 (continued)**

**Schedule of Proportionate Share of the Net Pension Liability: 20 - Pittsburg (Term)**

<b>Reporting Date for Employer under GAS 68 as of June 30</b>	<b>Proportion of the Net Pension Liability</b>	<b>Proportionate share of Net Pension Liability</b>	<b>Covered-employee payroll<sup>(1)</sup></b>	<b>Proportionate share of the Net Pension Liability as a percentage of its covered-employee payroll</b>	<b>Plan's Fiduciary Net Position as a percentage of the Total Pension Liability</b>
2014	N/A	N/A	N/A	N/A	N/A
2015	N/A	N/A	N/A	N/A	N/A
2016	N/A	N/A	N/A	N/A	N/A
2017	0.492%	\$6,888,327	\$0	N/A	85.75%

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

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11**

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

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$1,507,127,140	\$1,195,701,397
2. Pension Expense	267,159,589	243,133,717
3. Employer Contributions <sup>(1)</sup>	(307,909,509)	(323,720,270)
4. New Net Deferred Inflows/Outflows	(20,904,679)	349,410,090
5. Change in Allocation of Prior Deferred Inflows/Outflows	0	0
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	0	0
7. Recognition of Prior Deferred Inflows/Outflows	(45,017,618)	42,602,206
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>0</u>	<u>0</u>
9. Ending Net Pension Liability	\$1,400,454,923	\$1,507,127,140

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 1 - BIMID**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$111,818	\$114,600
2. Pension Expense	27,907	12,886
3. Employer Contributions <sup>(1)</sup>	(34,493)	(28,462)
4. New Net Deferred Inflows/Outflows	(2,060)	25,924
5. Change in Allocation of Prior Deferred Inflows/Outflows	5,790	3,344
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	27,406	(19,304)
7. Recognition of Prior Deferred Inflows/Outflows	(4,437)	3,161
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>5,153</u>	<u>(331)</u>
9. Ending Net Pension Liability	\$137,084	\$111,818

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 2 - Union Cemetery**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$147,774	\$66,340
2. Pension Expense	44,414	56,479
3. Employer Contributions <sup>(1)</sup>	(61,739)	(71,254)
4. New Net Deferred Inflows/Outflows	(1,139)	34,260
5. Change in Allocation of Prior Deferred Inflows/Outflows	(10,346)	(6,574)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	(8,071)	75,529
7. Recognition of Prior Deferred Inflows/Outflows	(2,453)	4,177
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>(32,640)</u>	<u>(11,183)</u>
9. Ending Net Pension Liability	\$75,800	\$147,774

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 3 - CC Mosquito**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$5,665,700	\$5,104,681
2. Pension Expense	857,481	806,678
3. Employer Contributions <sup>(1)</sup>	(1,277,784)	(1,385,627)
4. New Net Deferred Inflows/Outflows	(77,263)	1,313,527
5. Change in Allocation of Prior Deferred Inflows/Outflows	(15,044)	78,751
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	46,382	(404,793)
7. Recognition of Prior Deferred Inflows/Outflows	(166,382)	160,153
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>107,328</u>	<u>(7,670)</u>
9. Ending Net Pension Liability	\$5,140,418	\$5,665,700

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 4 - CCCFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$174,340,795	\$116,262,504
2. Pension Expense	29,518,434	28,162,510
3. Employer Contributions <sup>(1)</sup>	(24,614,542)	(23,265,920)
4. New Net Deferred Inflows/Outflows	(2,511,944)	40,418,908
5. Change in Allocation of Prior Deferred Inflows/Outflows	1,065,343	(2,848,404)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	(5,227,246)	8,348,686
7. Recognition of Prior Deferred Inflows/Outflows	(5,409,398)	4,928,119
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>(37,394)</u>	<u>2,334,392</u>
9. Ending Net Pension Liability	\$167,124,048	\$174,340,795

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 5 - CCCSD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$91,746,888	\$89,535,510
2. Pension Expense	13,617,705	11,824,671
3. Employer Contributions <sup>(1)</sup>	(18,043,391)	(22,752,611)
4. New Net Deferred Inflows/Outflows	(1,320,379)	21,270,461
5. Change in Allocation of Prior Deferred Inflows/Outflows	543,221	2,163,011
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	1,170,291	(12,354,075)
7. Recognition of Prior Deferred Inflows/Outflows	(2,843,397)	2,593,424
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>2,976,178</u>	<u>(533,503)</u>
9. Ending Net Pension Liability	\$87,847,116	\$91,746,888

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 6 - First 5**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$2,465,341	\$1,683,167
2. Pension Expense	600,678	507,107
3. Employer Contributions <sup>(1)</sup>	(594,872)	(608,742)
4. New Net Deferred Inflows/Outflows	(36,432)	571,561
5. Change in Allocation of Prior Deferred Inflows/Outflows	25,418	(35,228)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	151,613	301,520
7. Recognition of Prior Deferred Inflows/Outflows	(78,456)	69,688
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>(109,391)</u>	<u>(23,732)</u>
9. Ending Net Pension Liability	\$2,423,899	\$2,465,341

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 7 - County**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$1,024,104,604	\$807,350,288
2. Pension Expense	185,066,783	174,133,823
3. Employer Contributions <sup>(1)</sup>	(223,359,050)	(237,357,344)
4. New Net Deferred Inflows/Outflows	(14,118,151)	237,426,870
5. Change in Allocation of Prior Deferred Inflows/Outflows	(985,797)	(663,638)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	7,922,671	18,058,417
7. Recognition of Prior Deferred Inflows/Outflows	(30,403,024)	28,948,530
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>(8,922,572)</u>	<u>(3,792,342)</u>
9. Ending Net Pension Liability	\$939,305,464	\$1,024,104,604

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 8 - CCCERA (the employer)**

Reporting Date for Employer under GAS 68	June 30, 2017	June 30, 2016
Measurement Date for Employer under GAS 68	December 31, 2016	December 31, 2015
Reconciliation of Net Pension Liability		
1. Beginning Net Pension Liability	\$7,138,680	\$5,863,670
2. Pension Expense	1,191,452	1,134,393
3. Employer Contributions <sup>(1)</sup>	(1,579,937)	(1,678,705)
4. New Net Deferred Inflows/Outflows	(97,333)	1,655,021
5. Change in Allocation of Prior Deferred Inflows/Outflows	(19,147)	25,844
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	34,363	(62,746)
7. Recognition of Prior Deferred Inflows/Outflows	(209,603)	201,790
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>17,238</u>	<u>(587)</u>
9. Ending Net Pension Liability	\$6,475,713	\$7,138,680

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 9 - ECCFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$22,992,216	\$24,313,820
2. Pension Expense	1,993,672	1,258,364
3. Employer Contributions <sup>(1)</sup>	(3,756,634)	(3,309,654)
4. New Net Deferred Inflows/Outflows	(351,147)	5,330,481
5. Change in Allocation of Prior Deferred Inflows/Outflows	366,314	784,337
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	423,411	(6,608,456)
7. Recognition of Prior Deferred Inflows/Outflows	(756,186)	649,925
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>2,450,801</u>	<u>573,399</u>
9. Ending Net Pension Liability	\$23,362,447	\$22,992,216

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 10 - Housing Authority**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$10,788,391	\$8,652,807
2. Pension Expense	1,879,712	1,712,545
3. Employer Contributions <sup>(1)</sup>	(2,179,232)	(2,329,742)
4. New Net Deferred Inflows/Outflows	(152,748)	2,501,164
5. Change in Allocation of Prior Deferred Inflows/Outflows	35,313	12,100
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	92,240	(72,664)
7. Recognition of Prior Deferred Inflows/Outflows	(328,939)	304,957
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>27,867</u>	<u>7,224</u>
9. Ending Net Pension Liability	\$10,162,604	\$10,788,391

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 11 - IHSS**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$1,292,792	\$1,040,424
2. Pension Expense	261,716	206,160
3. Employer Contributions <sup>(1)</sup>	(305,526)	(294,506)
4. New Net Deferred Inflows/Outflows	(19,457)	299,719
5. Change in Allocation of Prior Deferred Inflows/Outflows	17,337	1,908
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	87,163	114
7. Recognition of Prior Deferred Inflows/Outflows	(41,900)	36,544
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>2,397</u>	<u>2,429</u>
9. Ending Net Pension Liability	\$1,294,522	\$1,292,792

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 12 - LAFCO**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$400,173	\$364,601
2. Pension Expense	60,820	58,451
3. Employer Contributions <sup>(1)</sup>	(90,429)	(103,349)
4. New Net Deferred Inflows/Outflows	(5,401)	92,776
5. Change in Allocation of Prior Deferred Inflows/Outflows	(1,702)	6,086
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	1,394	(27,887)
7. Recognition of Prior Deferred Inflows/Outflows	(11,631)	11,312
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>6,105</u>	<u>(1,817)</u>
9. Ending Net Pension Liability	\$359,329	\$400,173

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 13 - MOFD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$39,299,357	\$28,612,847
2. Pension Expense	3,894,918	5,444,680
3. Employer Contributions <sup>(1)</sup>	(4,915,245)	(4,394,775)
4. New Net Deferred Inflows/Outflows	(489,539)	9,111,104
5. Change in Allocation of Prior Deferred Inflows/Outflows	(631,473)	(331,408)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	(4,429,091)	(894,927)
7. Recognition of Prior Deferred Inflows/Outflows	(1,054,209)	1,110,881
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>895,195</u>	<u>640,955</u>
9. Ending Net Pension Liability	\$32,569,913	\$39,299,357

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 14 - Rodeo SD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$393,628	\$182,951
2. Pension Expense	120,369	151,593
3. Employer Contributions <sup>(1)</sup>	(165,800)	(191,656)
4. New Net Deferred Inflows/Outflows	(3,062)	91,258
5. Change in Allocation of Prior Deferred Inflows/Outflows	(27,246)	(16,705)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	(19,452)	197,145
7. Recognition of Prior Deferred Inflows/Outflows	(6,595)	11,127
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>(88,092)</u>	<u>(32,085)</u>
9. Ending Net Pension Liability	\$203,750	\$393,628

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.



**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 15 - RHFD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$15,252,152	\$13,499,212
2. Pension Expense	1,481,331	1,359,234
3. Employer Contributions <sup>(1)</sup>	(2,058,096)	(2,186,912)
4. New Net Deferred Inflows/Outflows	(220,843)	3,536,036
5. Change in Allocation of Prior Deferred Inflows/Outflows	105,553	180,655
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	(492,695)	(2,078,118)
7. Recognition of Prior Deferred Inflows/Outflows	(475,580)	431,135
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>1,101,284</u>	<u>510,910</u>
9. Ending Net Pension Liability	\$14,693,106	\$15,252,152

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 16 - SRVFPD**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$80,736,003	\$69,527,014
2. Pension Expense	10,682,681	10,370,266
3. Employer Contributions <sup>(1)</sup>	(17,495,554)	(15,171,991)
4. New Net Deferred Inflows/Outflows	(1,089,573)	18,717,714
5. Change in Allocation of Prior Deferred Inflows/Outflows	(344,123)	707,011
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	(306,153)	(6,503,018)
7. Recognition of Prior Deferred Inflows/Outflows	(2,346,363)	2,282,178
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>2,654,277</u>	<u>806,829</u>
9. Ending Net Pension Liability	\$72,491,195	\$80,736,003

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 17 - Court**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	\$30,250,828	\$23,526,961
2. Pension Expense	6,229,830	5,933,877
3. Employer Contributions <sup>(1)</sup>	(7,377,185)	(8,589,020)
4. New Net Deferred Inflows/Outflows	(408,208)	7,013,306
5. Change in Allocation of Prior Deferred Inflows/Outflows	(129,411)	(61,090)
6. New Net Deferred Flows Due to Change in Proportion <sup>(2)</sup>	525,774	2,044,577
7. Recognition of Prior Deferred Inflows/Outflows	(879,065)	855,105
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(2)</sup>	<u>(1,053,734)</u>	<u>(472,888)</u>
9. Ending Net Pension Liability	\$27,158,829	\$30,250,828

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 18 - DDSD (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	N/A	N/A
2. Pension Expense	\$1,918,215	N/A
3. Employer Contributions <sup>(1)</sup>	N/A <sup>(2)</sup>	N/A
4. New Net Deferred Inflows/Outflows	N/A	N/A
5. Change in Allocation of Prior Deferred Inflows/Outflows	N/A	N/A
6. New Net Deferred Flows Due to Change in Proportion <sup>(3)</sup>	N/A	N/A
7. Recognition of Prior Deferred Inflows/Outflows	N/A	N/A
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(3)</sup>	<u>N/A</u>	<u>N/A</u>
9. Ending Net Pension Liability	\$1,918,215	N/A

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Since the December 31, 2016 measurement date is the effective date for separating the NPL for Delta Diablo Sanitation District from Cost Group #1, the employer contribution of \$221,489 made by Delta Diablo Sanitation District during 2016 has been allocated to other employers.

<sup>(3)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 19 - DWD (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	N/A	N/A
2. Pension Expense	\$823,144	N/A
3. Employer Contributions <sup>(1)</sup>	N/A <sup>(2)</sup>	N/A
4. New Net Deferred Inflows/Outflows	N/A	N/A
5. Change in Allocation of Prior Deferred Inflows/Outflows	N/A	N/A
6. New Net Deferred Flows Due to Change in Proportion <sup>(3)</sup>	N/A	N/A
7. Recognition of Prior Deferred Inflows/Outflows	N/A	N/A
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(3)</sup>	<u>N/A</u>	<u>N/A</u>
9. Ending Net Pension Liability	\$823,144	N/A

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Since the December 31, 2016 measurement date is the effective date for separating the NPL for Diablo Water District from Cost Group #1, the employer contribution of \$56,393 made by Diablo Water District during 2016 has been allocated to other employers.

<sup>(3)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 11 (continued)**

**Schedule of Reconciliation of Net Pension Liability: 20 - Pittsburg (Term)**

<b>Reporting Date for Employer under GAS 68</b>	<b>June 30, 2017</b>	<b>June 30, 2016</b>
<b>Measurement Date for Employer under GAS 68</b>	<b>December 31, 2016</b>	<b>December 31, 2015</b>
<b>Reconciliation of Net Pension Liability</b>		
1. Beginning Net Pension Liability	N/A	N/A
2. Pension Expense	\$6,888,327	N/A
3. Employer Contributions <sup>(1)</sup>	N/A <sup>(2)</sup>	N/A
4. New Net Deferred Inflows/Outflows	N/A	N/A
5. Change in Allocation of Prior Deferred Inflows/Outflows	N/A	N/A
6. New Net Deferred Flows Due to Change in Proportion <sup>(3)</sup>	N/A	N/A
7. Recognition of Prior Deferred Inflows/Outflows	N/A	N/A
8. Recognition of Prior Deferred Flows Due to Change in Proportion <sup>(3)</sup>	<u>N/A</u>	<u>N/A</u>
9. Ending Net Pension Liability	\$6,888,327	N/A

<sup>(1)</sup> Includes "member subvention of employer contributions" and excludes "employer subvention of member contributions". Prior to the June 30, 2017 reporting date, the member contributions excluded "member subvention of employer contributions" and included "employer subvention of member contributions".

<sup>(2)</sup> Since the December 31, 2016 measurement date is the effective date for separating the NPL for City of Pittsburg from Cost Groups #1, #2 and #7, the employer contribution of \$1,306,656 made by City of Pittsburg during 2016 has been allocated to other employers.

<sup>(3)</sup> Includes differences between employer contributions and proportionate share of contributions.

**SECTION 2: GAS 68 Information for the Contra Costa 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 GAS 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	Reporting Date for Employer under GAS 68 Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	\$(183,604,761)	4.60	\$(39,914,078)	\$(39,914,078)	\$(39,914,078)	\$(39,914,078)	\$(23,948,449)	\$0	\$0	\$0
2016	(62,117,935)	4.52	N/A	(13,742,906)	(13,742,906)	(13,742,906)	(13,742,906)	(7,146,311)	0	0
2017	(19,957,982)	4.57	N/A	N/A	(4,367,173)	(4,367,173)	(4,367,173)	(4,367,173)	(2,489,290)	0
Net increase (decrease) in pension expense			\$(39,914,078)	\$(53,656,984)	\$(58,024,157)	\$(58,024,157)	\$(42,058,528)	\$(11,513,484)	\$(2,489,290)	\$0

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Assumption Changes**

Reporting Date for Employer under GAS 68 Year Ended June 30	Effects of Assumption Changes	Recognition Period (Years)	Reporting Date for Employer under GAS 68 Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	\$(75,608)	4.60	\$(16,437)	\$(16,437)	\$(16,437)	\$(16,437)	\$(9,860)	\$0	\$0	\$0
2016	72,186,307	4.52	N/A	15,970,422	15,970,422	15,970,422	15,970,422	8,304,619	0	0
2017	0	4.57	N/A	N/A	0	0	0	0	0	0
Net increase (decrease) in pension expense			\$(16,437)	\$15,953,985	\$15,953,985	\$15,953,985	\$15,960,562	\$8,304,619	\$0	\$0

As described in Exhibit 9, for the current period, the average of the expected remaining service lives of all employees that are provided with pensions through CCCERA (active and inactive employees) determined as of December 31, 2015 (the beginning of the measurement period ending December 31, 2016) is 4.57 years.

**SECTION 2: GAS 68 Information for the Contra Costa 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 Differences between Projected and Actual Earnings on Pension Plan Investments**

Reporting Date for Employer under GAS 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	Reporting Date for Employer under GAS 68 Year Ended June 30:							
			2015	2016	2017	2018	2019	2020	2021	2022
2015	\$(13,358,454)	5.00	\$(2,671,691)	\$(2,671,691)	\$(2,671,691)	\$(2,671,691)	\$(2,671,690)	\$0	\$0	\$0
2016	426,961,542	5.00	N/A	85,392,308	85,392,308	85,392,308	85,392,308	85,392,310	0	0
2017	(6,642,338)	5.00	N/A	N/A	(1,328,468)	(1,328,468)	(1,328,468)	(1,328,468)	(1,328,466)	0
Net increase (decrease) in pension expense			\$(2,671,691)	\$82,720,617	\$81,392,149	\$81,392,149	\$81,392,150	\$84,063,842	\$(1,328,466)	\$0

The differences between projected and actual earnings on pension plan investments are recognized over a five-year period per Paragraph 33b. of GAS 68.

**Total Increase (Decrease) in Pension Expense**

Reporting Date for Employer under GAS 68 Year Ended June 30	Total Differences	Reporting Date for Employer under GAS 68 Year Ended June 30:							
		2015	2016	2017	2018	2019	2020	2021	2022
2015	\$(197,038,823)	\$(42,602,206)	\$(42,602,206)	\$(42,602,206)	\$(42,602,206)	\$(26,629,999)	\$0	\$0	\$0
2016	437,029,914	N/A	87,619,824	87,619,824	87,619,824	87,619,824	86,550,618	0	0
2017	(26,600,320)	N/A	N/A	(5,695,641)	(5,695,641)	(5,695,641)	(5,695,641)	(3,817,756)	0
Net increase (decrease) in pension expense		\$(42,602,206)	\$45,017,618	\$39,321,977	\$39,321,977	\$55,294,184	\$80,854,977	\$(3,817,756)	\$0



## **SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

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### **EXHIBIT 13**

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

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In addition to the amounts shown in Exhibit 12, there are changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ending on December 31, 2016. The net effect of the change in the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources is also recognized over the average of the expected remaining service lives of all employees shown previously. The difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ending on December 31, 2016 is recognized over the same period. These amounts are shown on the following page, with the corresponding amounts for the measurement periods ending on December 31, 2015 and December 31, 2014 shown on the pages after that. While these amounts are different for each employer, they sum to zero over the entire CCCERA.

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 13 (continued)**

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

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GAS 68 Year Ended June 30:					Thereafter
			2017	2018	2019	2020	2021	
1 - BIMID	\$35,083	4.57	\$7,677	\$7,677	\$7,677	\$7,677	\$4,375	\$0
2 - Union Cemetery	(10,332)	4.57	(2,261)	(2,261)	(2,261)	(2,261)	(1,288)	0
3 - CC Mosquito	59,374	4.57	12,992	12,992	12,992	12,992	7,406	0
4 - CCCFPD	(6,691,460)	4.57	(1,464,214)	(1,464,214)	(1,464,214)	(1,464,214)	(834,604)	0
5 - CCCSD	1,498,104	4.57	327,813	327,813	327,813	327,813	186,852	0
6 - First 5	194,082	4.57	42,469	42,469	42,469	42,469	24,206	0
7 - County	10,141,906	4.57	2,219,235	2,219,235	2,219,235	2,219,235	1,264,966	0
8 - CCCERA (the employer)	43,988	4.57	9,625	9,625	9,625	9,625	5,488	0
9 - ECCFPD	542,014	4.57	118,603	118,603	118,603	118,603	67,602	0
10 - Housing Authority	118,077	4.57	25,837	25,837	25,837	25,837	14,729	0
11 - IHSS	111,579	4.57	24,416	24,416	24,416	24,416	13,915	0
12 - LAFCO	1,784	4.57	390	390	390	390	224	0
13 - MOFD	(5,669,733)	4.57	(1,240,642)	(1,240,642)	(1,240,642)	(1,240,642)	(707,165)	0
14 - Rodeo SD	(24,901)	4.57	(5,449)	(5,449)	(5,449)	(5,449)	(3,105)	0
15 - RHFD	(630,705)	4.57	(138,010)	(138,010)	(138,010)	(138,010)	(78,665)	0
16 - SRVFPD	(391,910)	4.57	(85,757)	(85,757)	(85,757)	(85,757)	(48,882)	0
17 - Court	673,050	4.57	147,276	147,276	147,276	147,276	83,946	0
18 - DDSD (Term)	0	4.57	0	0	0	0	0	0
19 - DWD (Term)	0	4.57	0	0	0	0	0	0
20 - Pittsburg (Term)	0	4.57	0	0	0	0	0	0
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 13 (continued)**

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

The corresponding amounts for the measurement period ending December 31, 2015 are as follows:

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GAS 68 Year Ended June 30:					Thereafter
			2016	2017	2018	2019	2020	
1 - BIMID	\$(24,788)	4.52	\$(5,484)	\$(5,484)	\$(5,484)	\$(5,484)	\$(2,852)	\$0
2 - Union Cemetery	96,986	4.52	21,457	21,457	21,457	21,457	11,158	0
3 - CC Mosquito	(519,791)	4.52	(114,998)	(114,998)	(114,998)	(114,998)	(59,799)	0
4 - CCCFPD	10,720,472	4.52	2,371,786	2,371,786	2,371,786	2,371,786	1,233,328	0
5 - CCCSD	(15,863,756)	4.52	(3,509,681)	(3,509,681)	(3,509,681)	(3,509,681)	(1,825,032)	0
6 - First 5	387,179	4.52	85,659	85,659	85,659	85,659	44,543	0
7 - County	23,188,647	4.52	5,130,230	5,130,230	5,130,230	5,130,230	2,667,727	0
8 - CCCERA (the employer)	(80,571)	4.52	(17,825)	(17,825)	(17,825)	(17,825)	(9,271)	0
9 - ECCFPD	(8,485,858)	4.52	(1,877,402)	(1,877,402)	(1,877,402)	(1,877,402)	(976,250)	0
10 - Housing Authority	(93,307)	4.52	(20,643)	(20,643)	(20,643)	(20,643)	(10,735)	0
11 - IHSS	146	4.52	32	32	32	32	18	0
12 - LAFCO	(35,809)	4.52	(7,922)	(7,922)	(7,922)	(7,922)	(4,121)	0
13 - MOFD	(1,149,167)	4.52	(254,240)	(254,240)	(254,240)	(254,240)	(132,207)	0
14 - Rodeo SD	253,152	4.52	56,007	56,007	56,007	56,007	29,124	0
15 - RHFD	(2,668,492)	4.52	(590,374)	(590,374)	(590,374)	(590,374)	(306,996)	0
16 - SRVFPD	(8,350,466)	4.52	(1,847,448)	(1,847,448)	(1,847,448)	(1,847,448)	(960,674)	0
17 - Court	<u>2,625,423</u>	4.52	<u>580,846</u>	<u>580,846</u>	<u>580,846</u>	<u>580,846</u>	<u>302,039</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0

**SECTION 2: GAS 68 Information for the Contra Costa County Employees' Retirement Association**

**EXHIBIT 13 (continued)**

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

The corresponding amounts for the measurement period ending December 31, 2014 are as follows:

	Total Change to be Recognized	Recognition Period (Years)	Reporting Date for Employer under GAS 68 Year Ended June 30:					Thereafter
			2015	2016	2017	2018	2019	
1 - BIMID	\$1,524	4.60	\$331	\$331	\$331	\$331	\$200	\$0
2 - Union Cemetery	51,442	4.60	11,183	11,183	11,183	11,183	6,710	0
3 - CC Mosquito	35,280	4.60	7,670	7,670	7,670	7,670	4,600	0
4 - CCCFPD	(10,738,204)	4.60	(2,334,392)	(2,334,392)	(2,334,392)	(2,334,392)	(1,400,636)	0
5 - CCCSD	2,454,113	4.60	533,503	533,503	533,503	533,503	320,101	0
6 - First 5	109,167	4.60	23,732	23,732	23,732	23,732	14,239	0
7 - County	17,444,777	4.60	3,792,342	3,792,342	3,792,342	3,792,342	2,275,409	0
8 - CCCERA (the employer)	2,702	4.60	587	587	587	587	354	0
9 - ECCFPD	(2,637,637)	4.60	(573,399)	(573,399)	(573,399)	(573,399)	(344,041)	0
10 - Housing Authority	(33,231)	4.60	(7,224)	(7,224)	(7,224)	(7,224)	(4,335)	0
11 - IHSS	(11,172)	4.60	(2,429)	(2,429)	(2,429)	(2,429)	(1,456)	0
12 - LAFCO	8,360	4.60	1,817	1,817	1,817	1,817	1,092	0
13 - MOFD	(2,948,394)	4.60	(640,955)	(640,955)	(640,955)	(640,955)	(384,574)	0
14 - Rodeo SD	147,589	4.60	32,085	32,085	32,085	32,085	19,249	0
15 - RHFD	(2,350,185)	4.60	(510,910)	(510,910)	(510,910)	(510,910)	(306,545)	0
16 - SRVFPD	(3,711,415)	4.60	(806,829)	(806,829)	(806,829)	(806,829)	(484,099)	0
17 - Court	<u>2,175,284</u>	4.60	<u>472,888</u>	<u>472,888</u>	<u>472,888</u>	<u>472,888</u>	<u>283,732</u>	<u>0</u>
Total for all Employers	\$0		\$0	\$0	\$0	\$0	\$0	\$0

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Actuarial Assumptions and Methods**

**For December 31, 2016 Measurement Date and Employer Reporting as of June 30, 2017**

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<b><u>Rationale for Assumptions:</u></b>	The information and analysis used in selecting each demographic (non-economic) assumption that has a significant effect on this actuarial valuation is shown in the January 1, 2012 through December 31, 2014 Actuarial Experience Study dated June 1, 2016. The information and analysis used in selecting each economic assumption is shown in our Review of Economic Actuarial Assumptions Reports dated April 19, 2016.
<b><u>Economic Assumptions</u></b>	
<b>Net Investment Return:</b>	7.00%, net of investment expenses
<b>Administration Expenses:</b>	1.12% of payroll allocated to both the employer and the member based on normal cost (before expenses) for the employer and member. This assumption changes each year based on the actual administrative expenses as a percent of actual compensation during the calendar year leading up to the valuation date.
<b>Employee Contribution Crediting Rate:</b>	7.00%, compounded semi-annually
<b>Consumer Price Index:</b>	Increase of 2.75% per year; retiree COLA increases due to CPI subject to a 3.00% maximum change per year (valued as a 2.75% increase) except for Tier 3 and PEPRA Tier 5 disability benefits and Tier 2 benefits which are subject to a 4.00% maximum change per year (valued as a 2.75% increase). Safety Tier C benefits, Safety PEPRA Tier E benefits and benefits for PEPRA Tier 4 and Tier 5 members covered under certain memoranda of understanding are subject to a 2.00% maximum change per year. For members that have COLA banks, they are reflected in projected future COLA's.
<b>Payroll Growth:</b>	Inflation of 2.75% per year plus "across the board" real salary increases of 0.5% per year.

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**Increase in Internal Revenue Code**

**Section 401(a)(17) Compensation Limit:** Increase of 2.75% per year from the valuation date.

**Increase in Section 7522.10**

**Compensation Limit:** Increase of 2.75% per year from the valuation date.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Demographic Assumptions**

**Post – Retirement Mortality Rates:**

*Healthy:*

For General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2015 projection scale.

For Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set back three years, projected generationally with the two-dimensional MP-2015 projection scale.

*Disabled:*

For General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward eight years, projected generationally with the two-dimensional MP-2015 projection scale.

For Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward three years, projected generationally with the two-dimensional MP-2015 projection scale.

*Beneficiaries:*

Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who has taken a service (non-disability) retirement.

The RP-2014 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

*Member Contribution Rates:*

For General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected to 2034 with the two-dimensional MP-2015 projection scale, weighted 30% male and 70% female.

For Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set back three years, projected to 2034 with the two-dimensional MP-2015 projection scale, weighted 85% male and 15% female.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Pre – Retirement Mortality Rates:** Headcount-Weighted RP-2014 Employee Mortality Table times 75%, projected generationally with the two-dimensional MP-2015 projection scale.

**Termination Rates Before Retirement:**

<b>Age</b>	<b>Rate (%)</b>	
	<b>Mortality</b>	
	<b>Male</b>	<b>Female</b>
25	0.05	0.02
30	0.05	0.02
35	0.05	0.03
40	0.06	0.04
45	0.09	0.06
50	0.16	0.10
55	0.26	0.16
60	0.42	0.23
65	0.73	0.33

*All pre-retirement deaths are assumed to be non-service connected. Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates.*

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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

Age	Rate (%) Disability		
	General Tier 1 and Tier 4 <sup>(1)</sup>	General Tier 3 and Tier 5 <sup>(2)</sup>	Safety <sup>(3)</sup>
20	0.01	0.01	0.02
25	0.02	0.02	0.22
30	0.04	0.03	0.42
35	0.08	0.05	0.56
40	0.22	0.08	0.66
45	0.36	0.13	1.00
50	0.52	0.16	2.88
55	0.60	0.20	4.60
60	0.60	0.28	5.00
65	0.60	0.32	5.00
70	0.60	0.32	5.00

<sup>(1)</sup> 65% of General Tier 1 and Tier 4 disabilities are assumed to be duty disabilities. The other 35% are assumed to be ordinary disabilities.

<sup>(2)</sup> 30% of General Tier 3 and Tier 5 disabilities are assumed to be duty disabilities. The other 70% are assumed to be ordinary disabilities.

<sup>(3)</sup> 100% of Safety disabilities are assumed to be duty disabilities.



**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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

<b>Years of Service</b>	<b>Rate (%)</b>	
	<b>Withdrawal*</b>	
	<b>General</b>	<b>Safety</b>
Less than 1	13.50	13.00
1	9.25	8.00
2	9.00	7.00
3	6.00	5.50
4	4.50	3.75
5	4.25	3.25
6	3.75	3.00
7	3.50	2.75
8	3.25	2.50
9	3.00	2.25
10	2.75	2.00
11	2.50	1.90
12	2.40	1.80
13	2.30	1.70
14	2.20	1.60
15	2.10	1.50
16	2.00	1.40
17	2.00	1.30
18	2.00	1.20
19	1.75	1.10
20 or more	1.50	1.00

\* *The member is assumed to receive the greater of the member's contribution balance or a deferred retirement benefit. No withdrawal is assumed after a member is first assumed to retire.*

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Retirement Rates (General):**

Age	Rate (%)			
	General Tier 1 (Enhanced)	General Tier 3 (Enhanced)	General Tier 1 (Non-enhanced)	PEPRA General Tiers 4 and 5
50	5.00	4.00	3.00	0.00
51	4.00	3.00	3.00	0.00
52	5.00	3.00	3.00	2.00
53	5.00	5.00	3.00	3.00
54	14.00	6.00	3.00	3.00
55	20.00	10.00	10.00	5.00
56	20.00	10.00	10.00	5.00
57	20.00	10.00	10.00	6.00
58	20.00	12.00	10.00	8.00
59	25.00	13.00	10.00	9.00
60	28.00	15.00	25.00	10.00
61	35.00	20.00	15.00	14.00
62	35.00	25.00	40.00	20.00
63	30.00	25.00	35.00	20.00
64	30.00	30.00	30.00	20.00
65	35.00	35.00	40.00	25.00
66	40.00	35.00	35.00	30.00
67	40.00	35.00	35.00	30.00
68	40.00	35.00	35.00	30.00
69	40.00	35.00	35.00	30.00
70	50.00	40.00	50.00	50.00
71	50.00	40.00	50.00	50.00
72	50.00	40.00	50.00	50.00
73	50.00	40.00	50.00	50.00
74	50.00	40.00	50.00	50.00
75	100.00	100.00	100.00	100.00

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Retirement Rates (Safety):**

Age	Rate (%)			
	Safety Tier A (Enhanced)	Safety Tier C (Enhanced)	Safety Tier A (Non-enhanced)	PEPRA Safety Tiers D and E
45	4.00	2.00	0.00	0.00
46	3.00	1.00	0.00	0.00
47	10.00	4.00	0.00	0.00
48	10.00	4.00	0.00	0.00
49	25.00	12.00	0.00	0.00
50	30.00	18.00	5.00	5.00
51	30.00	18.00	4.00	4.00
52	25.00	15.00	4.00	4.00
53	25.00	15.00	5.00	5.00
54	25.00	15.00	8.00	6.00
55	28.00	18.00	10.00	10.00
56	25.00	15.00	10.00	10.00
57	25.00	15.00	12.00	18.00
58	35.00	25.00	18.00	18.00
59	35.00	25.00	20.00	18.00
60	35.00	30.00	20.00	18.00
61	35.00	30.00	20.00	20.00
62	35.00	30.00	20.00	20.00
63	35.00	30.00	20.00	20.00
64	50.00	40.00	100.00	30.00
65	100.00	100.00	100.00	30.00
66	100.00	100.00	100.00	100.00

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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

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

General: Age 59

Safety: Age 54

We assume that 40% and 65% of future General and Safety deferred vested members, respectively, will continue to work for a reciprocal employer. For reciprocals, we assume 4.75% compensation increases per annum.

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**Future Benefit Accruals:**

1.0 year of service per year for the full-time employees. Continuation of current partial service accrual for part-time employees.

**Unknown Data for Members:**

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

**Percent Married:**

75% of male members and 50% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.

**Age of Spouse:**

Male retirees are 3 years older than their spouses, and Female retirees are 2 years younger than their spouses.

**Offsets by Other Plans of the Employer for Disability Benefits:**

The Plan requires members who retire because of disability from General Tier 3 and PEPRA General Tier 5 to offset the Plan's disability benefits with other Plans of the employer. We have not assumed any offsets in this valuation.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Leave Cashout Assumptions:**

The following assumptions for leave cashouts as a percentage of final average pay are used:

*General Tiers 1, 2 and 3*  
*Safety Tiers A and C*

	Membership Date before January 1, 2013
Cost Group 1:	1.25%
Cost Group 2:	0.50% for Tier 2 1.00% for Tier 3
Cost Group 3:	5.50%
Cost Group 4:	0.50%
Cost Group 5:	1.00%
Cost Group 6:	0.75%
Cost Group 7:	1.00%
Cost Group 8:	0.75%
Cost Group 9:	0.00%
Cost Group 10:	1.00%
Cost Group 11:	2.50%
Cost Group 12:	2.50%

The cost of this pay element is recognized in the valuation as an employer and member cost in both basic and COLA components.

*PEPRA General Tiers 4 and 5*  
*PEPRA Safety Tiers D and E*

None

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Service From Accumulated Sick Leave Conversion:**

The following assumptions for service converted from accumulated sick leave as a percentage of service at retirement are used:

Service Retirements:

General:	1.20%
Safety:	1.90%

Disability Retirements:

General:	0.08%
Safety:	1.30%

Pursuant to Section 31641.01, the cost of this benefit for the non-PEPRA tiers will be charged only to employers and will not affect member contribution rates.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Salary Increases:**

<b>Annual Rate of Compensation Increase</b>		
Inflation: 2.75% per year, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotional increases:		
Years of Service	General	Safety
Less than 1	10.00%	10.50%
1	7.25	7.25
2	5.25	5.75
3	3.75	4.50
4	2.75	3.00
5	2.25	1.75
6	1.75	1.25
7	1.50	1.20
8	1.25	1.15
9	1.20	1.10
10	1.15	1.05
11	1.10	1.00
12	1.00	0.95
13	0.90	0.85
14	0.80	0.80
15	0.75	0.75
16	0.75	0.75
17	0.75	0.75
18	0.75	0.75
19	0.75	0.75
20 or more	0.75	0.75

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**Actuarial Methods**

**Actuarial Cost Method:**

Entry Age Actuarial Cost Method. Entry Age is calculated as age on the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation.

**Expected Remaining Service Lives:**

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

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

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**Changes in Actuarial Assumptions and Methods:**

**Administration Expenses:**

The following assumptions was changed. Previously, this assumption was as follows:

1.14% of payroll allocated to both the employer and the member based on normal cost (before expenses) for the employer and member. This assumption changes each year based on the actual administrative expenses as a percent of actual compensation during the calendar year leading up to the valuation date.



**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

**APPENDIX A**

**Calculation of Discount Rate as of December 31, 2016  
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)
2016	\$6,977	\$397	\$420	\$8	\$494	\$7,439
2017	7,439	353	458	8	517	7,843
2018	7,843	349	479	7	544	8,250
2019	8,250	352	501	7	572	8,666
2020	8,666	359	524	7	601	9,096
2021	9,096	361	547	6	630	9,533
2022	9,533	359	572	6	660	9,973
2023	9,973	272	598	6	687	10,328
2024	10,328	268	624	6	711	10,677
2025	10,677	264	650	5	734	11,020
2041	12,637	31	978	2	852	12,542
2042	12,542	28	988	1	845	12,424
2043	12,424	24	997	1	836	12,286
2044	12,286	21	1,004	1	826	12,128
2045	12,128	18	1,008	1	815	11,952
2090	6,667	0	63	0	465	7,069
2091	7,069	0	51	0	493	7,511
2092	7,511	0	41	0	524	7,994
2093	7,994	0	33	0	558	8,519
2094	8,519	0	26	0	595	9,089
2127	78,614	0	0 *	0	5,503	84,117
2128	84,117					
2128 Discounted Value:	43 **					

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

\*\* \$84,117 million when discounted with interest at the rate of 7.00% per annum has a value of \$43 million as of December 31, 2016.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX A (continued)**

**Calculation of Discount Rate as of December 31, 2016  
Projection of Pension Plan's Fiduciary Net Position (\$ in millions)**

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Notes:

- (1) Amounts may not total exactly due to rounding.
- (2) Amounts shown in the year beginning January 1, 2016 row are actual amounts, based on the unaudited financial statements provided by CCCERA.
- (3) Years 2026-2040, 2046-2089, and 2095-2126 have been omitted from this table.
- (4) Column (a): Except for the "discounted value" shown for 2128, none of the projected beginning Plan's Fiduciary Net Position amounts shown have been adjusted for the time value of money.
- (5) Column (b): Projected total contributions include member and employer normal cost rates applied to closed group projected payroll (based on covered active members as of December 31, 2015); plus employer contributions to the Unfunded Actuarial Accrued Liability; Contributions are assumed to occur halfway through the year, on average.
- (6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of December 31, 2015. The projected benefit payments reflect the cost of living increase assumptions adopted for use in the December 31, 2016 valuation report and include projected benefits associated with the Post Retirement Death Benefit Reserve.
- (7) Column (d): Projected administrative expenses are assumed to be 1.12% of closed group projected payroll and are assumed to occur halfway through the year, on average.
- (8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.00% per annum.
- (9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of December 31, 2016 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX B**

**Glossary of Terms**

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

**Active employees**

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

**Actual contributions**

Cash contributions recognized as additions to a Pension Plan's Fiduciary Net Position.

**Actuarial present value of projected benefit payments**

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

**Actuarial valuation**

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

**Actuarial valuation date**

The date as of which an actuarial valuation is performed.

**Actuarially determined contribution**

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

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

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

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX B (continued)**

**Glossary of Terms**

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**Automatic cost-of-living adjustments (automatic COLAs)**

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

**Closed period**

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

**Collective deferred outflows of resources and deferred inflows of resources related to pensions**

Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective Net Pension Liability.

**Collective Net Pension Liability**

The Net Pension Liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.

**Collective pension expense**

Pension expense arising from certain changes in the collective Net Pension Liability.

**Contributions**

Additions to a Pension Plan's Fiduciary Net Position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.

**Cost-of-living adjustments**

Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

**Cost-sharing employer**

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

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX B (continued)**

**Glossary of Terms**

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**Cost-sharing multiple-employer defined benefit pension plan (cost-sharing pension plan)**

A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.

**Covered-employee payroll**

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

**Defined benefit pension plans**

Pension plans that are used to provide defined benefit pensions.

**Defined benefit pensions**

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

**Defined contribution pension plans**

Pension plans that are used to provide defined contribution pensions.

**Defined contribution pensions**

Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX B (continued)**

**Glossary of Terms**

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**Discount rate**

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

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

**Entry age actuarial cost method**

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

**Inactive employees**

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

**Measurement period**

The period between the prior and the current measurement dates.

**Multiple-employer defined benefit pension plan**

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

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX B (continued)**

**Glossary of Terms**

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**Net Pension Liability**

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

**Pension plans**

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

**Pensions**

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

**Plan members**

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

**Postemployment**

The period after employment.

**Postemployment benefit changes**

Adjustments to the pension of an inactive employee.

**Projected benefit payments**

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

**Public employee retirement system**

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

**SECTION 3: Actuarial Assumptions and Methods and Appendices for the Contra Costa County Employees' Retirement Association**

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**APPENDIX B (continued)**

**Glossary of Terms**

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**Real rate of return**

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

**Service costs**

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

**Termination benefits**

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

**Total Pension Liability**

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

5500223v5/05337.108



## MEMORANDUM

Date: September 13, 2017

To: CCCERA Board of Retirement

From: Tim Hoppe, Retirement Services Manager

Subject: Paul Crouch, Application for Non-Service Connected Disability, Tier 1

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On March 23, 2017, Paul Crouch, a 62-year old Maintenance Crew Member with the Central Contra Costa Sanitation District, and active CCCERA member, died as a result of atherosclerotic cardiovascular disease. Prior to his death, Mr. Crouch had on file a Member Election Form for Non-Service Connected Disability Retirement in the Event of Member's Death During Active Service (*Active Death Form*). Mr. Crouch had approximately 17.0833 years of service at the time of his death.

CCCERA has filed an application for disability on behalf of the member. Medical records were analyzed by the Board's medical advisor, who concluded that the evidence showed Mr. Crouch was totally disabled from any employment prior to his death. Therefore, he meets the medical requirements of permanent disability for a Tier I member on a non-service connected basis.

The Board is now called upon to make a determination as to whether the member became permanently unable to perform his job duties and if the Member Election Form for a Non-Service Connected Disability Retirement in the Event of Member's Death During Active Service (*Active Death Form*) should be granted.

**Recommendation:**

1. Find that the member was permanently unable to engage in his job duties and grant a non-service connected disability retirement, effective March 23, 2017.
2. Grant the member's beneficiary (member's spouse) benefits pursuant to Government Code Section 31762 (Optional Settlement 2 allowance for the life of the named beneficiary).

*Notes: Upon approval of the form, his beneficiary would receive a lifetime monthly allowance equal to 100% of the Optional Settlement 2 allowance (GC 31762).*

# Contra Costa County Employees' Retirement Association

Meeting Date  
**09/13/17**  
Agenda Item  
**#8**

## Semi-Annual Disability Retirement Report

*for the years ended 2013, 2014, 2015, 2016  
and update for January 1 through June 30, 2017*

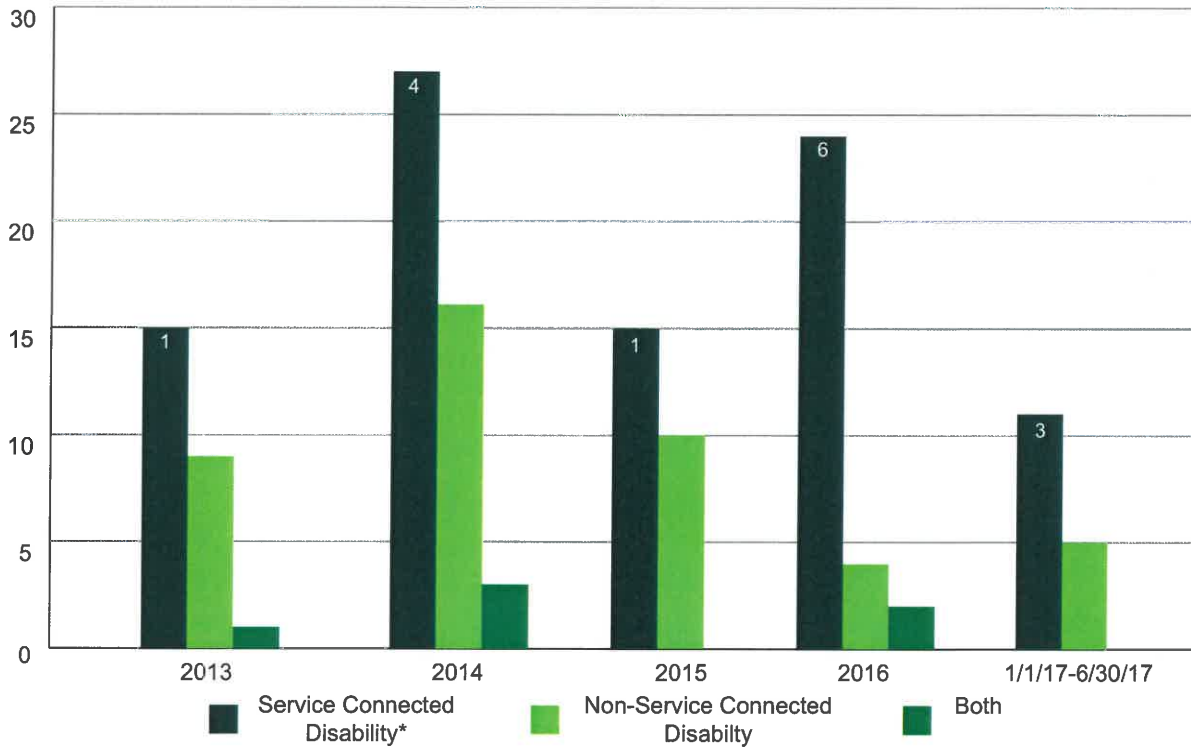


Contra Costa County Employees' Retirement Association  
1355 Willow Way, Suite 221  
Concord, California 94520-5728  
[cccera.org](http://cccera.org)

# Semi-Annual Disability Retirement Report

## Exhibit 1: Disability Retirement Applications Received by Year

As of June 30, 2017

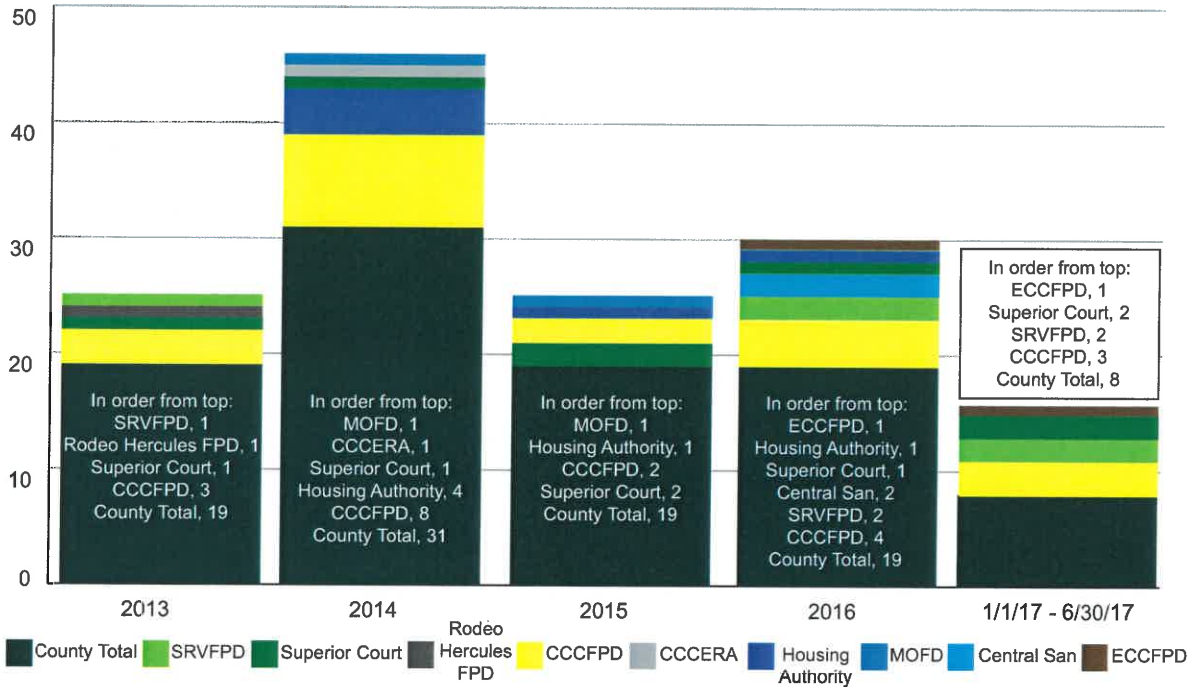


\*Total applications granted for service connected disability retirement with less than 10 years of service are noted.

Contra Costa County Employees' Retirement Association  
 Semi-Annual Disability Retirement Report (Continued)

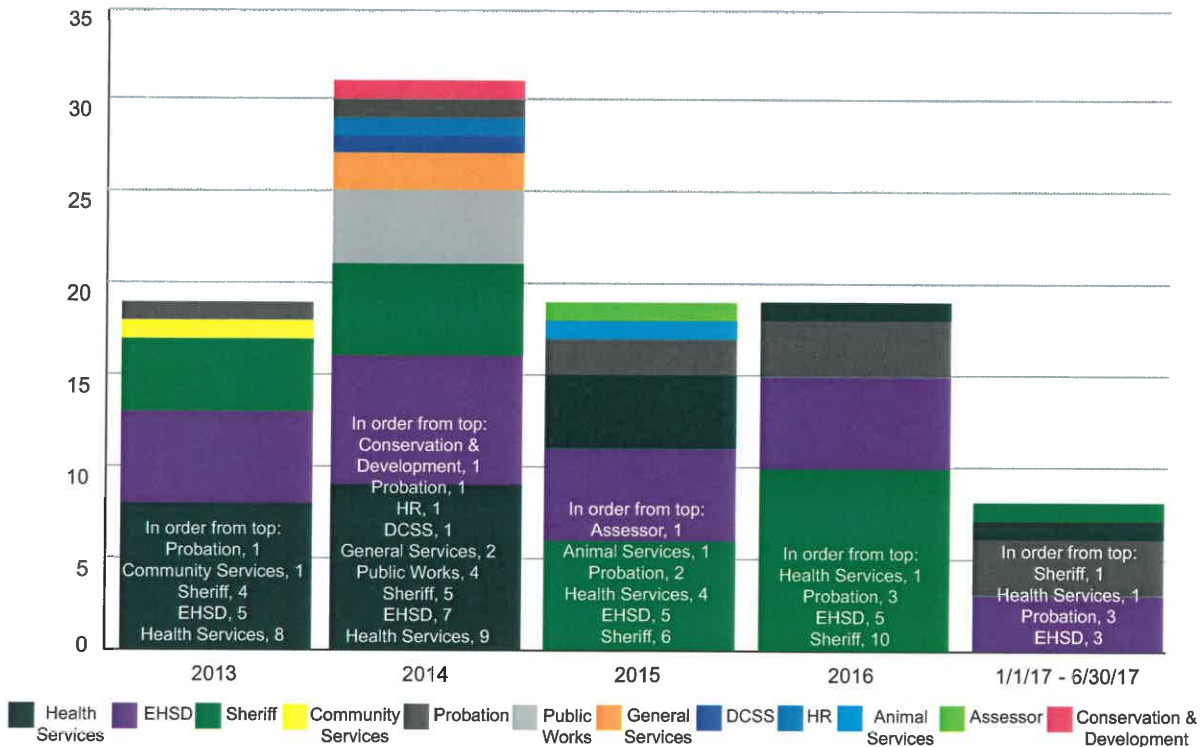
**Exhibit 2: Total Applications Filed with CCCERA (totals listed by employer)**

As of June 30, 2017



**Exhibit 3: Total Applications Filed with CCCERA (by County Department)**

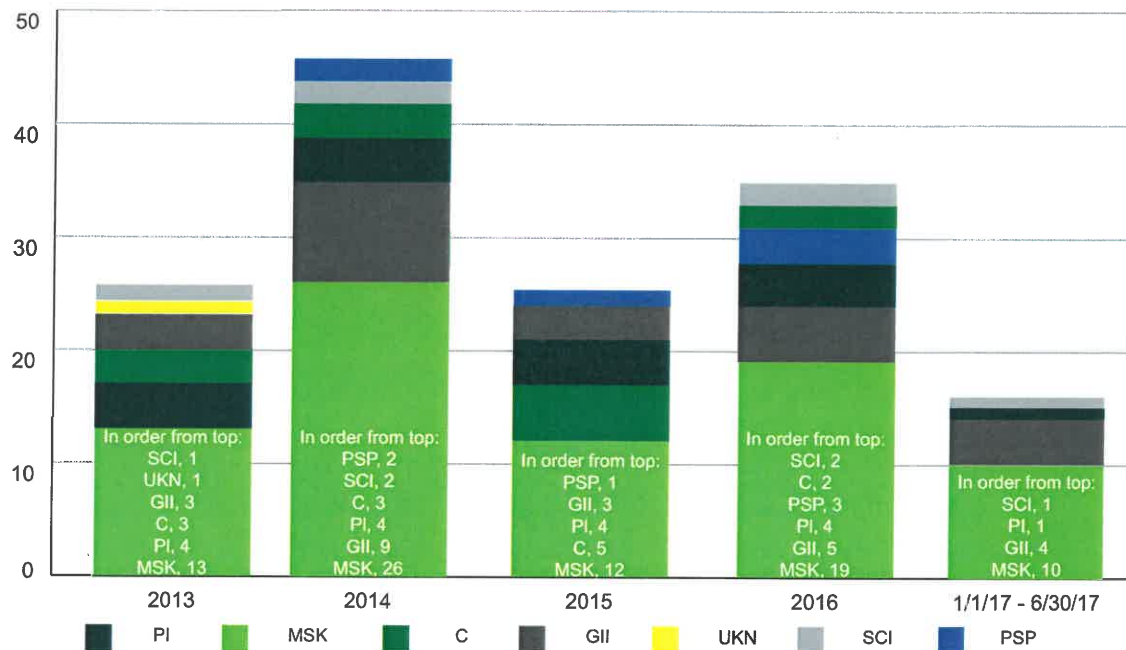
As of June 30, 2017



Contra Costa County Employees' Retirement Association  
 Semi-Annual Disability Retirement Report (Continued)

**Exhibit 4: Total Disability Filed by Type (Some applications filed with multiple disability types.)**

As of June 30, 2017



The following acronyms group different illnesses together by type to show trends and are not limited to the examples below.

<b>Psychiatric Incapacitation ( PI )</b>	Will include all psychiatric and mental health conditions and injuries. Examples would be PTSD, OCD, depression, schizophrenia, anxiety disorders, mood and emotional disorders.
<b>Musculoskeletal ( MSK )</b>	Will include all orthopedic injuries and illness. Examples include carpal tunnel syndrome, amputation, avascular necrosis, back injury, degenerative disc disease, fibromyalgia, lumbar stenosis, neck injury, shoulder injury, and disc herniation.
<b>Cancer ( C )</b>	Will include all permanent incapacitation that was the result of a form of cancer.
<b>General Internal Incapacitation ( GII )</b>	Will include all injuries and illness that are general non-orthopedic issues, not covered by the noted above. Examples include diabetes, any disease or injury to an internal organ, rheumatology, pulmonary, gastrointestinal.
<b>Unknown ( UKN )</b>	Disability application filed for unknown medical reasons. An example would be an employer that filed an application with limited medical records due to HIPAA.
<b>Severe Cognitive Impairment ( SCI )</b>	Will include all illness' and injuries where the incapacitation has caused diminished cognitive function. Examples include traumatic brain injury, dementia, dyslexia, dyscalculia, memory impairments, diminished concentration and speech.
<b>Public Safety Presumptions ( PSP )</b>	Will include all illness and injuries where the cause is governed under GC Sections 31720.5, 31720.6, 31720.7, or 31720.9. Presumptions will be listed twice; once under total presumption and once under type of disability.

Contra Costa County Employees' Retirement Association  
 Semi-Annual Disability Retirement Report *(Continued)*

**Exhibit 5: Type of Disability by Injury/Illness Group**

Employer	2013	2014	2015	2016	1/1//2017 - 6/30/2017
<b>Contra Costa County Fire Protection District (CCCFPD)</b>					
PI	0	1	0	0	0
MSK	2	5	1	4	3
C	1	0	0	0	0
PSP	0	2	1	0	0
<b>Contra Costa County Employees' Retirement Association (CCCERA)</b>					
GII	0	1	0	0	0
<b>Central Sanitary District</b>					
MSK	0	0	0	2	0
SCI	0	0	0	1	0
<b>East County Fire</b>					
PI	0	0	0	1	0
MSK	0	0	0	0	1
<b>Housing Authority of Contra Costa County</b>					
MSK	0	3	0	1	0
C	0	0	1	0	0
GII	0	1	0	0	0
<b>Moraga/Orinda Fire Protection District</b>					
MSK	0	1	1	0	0
<b>Rodeo/Hercules Fire Protection District</b>					
MSK	1	0	0	0	0
<b>San Ramon Valley Fire Protection District</b>					
PI	0	0	0	2	0
MSK	1	0	0	1	2
<b>Contra Costa County Superior Court</b>					
MSK	0	1	1	1	0
C	0	0	1	0	0
GII	1	0	0	0	1
SCI	0	0	0	0	1
<b>Contra Costa County*</b>					
PI	4	3	4	1	1
MSK	9	16	9	10	4
C	2	3	3	2	0
PSP	0	0	0	3	0
GII	2	7	3	5	3
UNK	1	0	0	0	0
SCI	1	2	0	1	0

\*Detail by Contra Costa County departments on following page.

Contra Costa County Employees' Retirement Association  
 Semi-Annual Disability Retirement Report (Concluded)

**Exhibit 5: Type of Disability by Injury/Illness Group**

Department	2013	2014	2015	2016	1/1/2017 - 6/30/2017
<b>Contra Costa County</b>					
<i>Animal Services</i>					
GII	0	0	1	0	0
<i>Assessor</i>					
GII	0	0	1	0	0
<i>Community Services</i>					
PI	1	0	0	0	0
<i>Conservation and Development</i>					
MSK	0	1	0	0	0
<i>Department of Child Support Services (DCSS)</i>					
C	0	1	0	0	0
<i>Employment &amp; Human Services Department (EHSD)</i>					
PI	0	1	2	0	0
MSK	4	2	2	1	1
C	0	1	1	1	0
GII	1	1	0	3	2
SCI	0	2	0	0	0
<i>General Services Department</i>					
MSK	0	1	0	0	0
C	0	1	0	0	0
<i>Health Services Department</i>					
PI	2	1	1	0	0
MSK	3	4	1	1	0
C	0	0	1	0	0
GII	1	4	1	1	1
UNK	1	0	0	0	0
SCI	1	0	0	0	0
<i>Human Resources Department</i>					
GII	0	1	0	0	0
<i>Public Works Department</i>					
MSK	0	3	0	0	0
GII	0	1	0	0	
<i>Probation Department</i>					
PI	0	1	1	1	1
MSK	0	0	1	1	2
C	1	0	0	0	0
PSP	0	0	0	1	0
GII	0	0	0	1	0
<i>Sheriff's Office</i>					
PI	1	0	0	0	0
MSK	2	5	5	7	1
C	1	0	1	1	0
PSP	0	0	0	2	0
SCI	0	0	0	1	0

# CII FALL 2017 CONFERENCE

Meeting Date  
**09/13/17**  
Agenda Item  
**#9a.**

## THINGS TO KNOW

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### Conference Schedule:

For most attendees (those not attending any closed meetings or the Master Class: Shareholder Evaluation of Directors), the conference will start on Wednesday, September 13 with the first plenary session at 4 PM PT. Please see the full agenda or contact CII staff at 202.822.0800 with any questions.

### Master Class: Shareholder Evaluation of Directors

11:45 AM - 1:45 PM PT on September 13 | \$295 for CII Members, \$395 for Non-Members

This optional class can be added during registration for the fall conference. More information on this course can be found in the conference agenda or on CII's [Education Courses](#) page.

### Hotel Rooms:

CII has reserved a block of discounted rooms starting at \$289/night at the Hilton San Diego Bayfront. A link to reserve a room in this block is provided after registering for the conference. *Register soon as the discount ends August 21 (or when space runs out).*

## DETAILS

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### WHEN

Wednesday, September 13, 2017 - Friday, September 15, 2017

### WHERE

Hilton San Diego Bayfront

1 Park Blvd

San Diego, California 92101

USA

(619) 564-3333

### WEBSITES

[CII Conference FAQ](#), [CII Homepage](#), [Education Courses](#)



# CII FALL 2017 CONFERENCE

## AGENDA

### Conference Schedule:

For most attendees (those not attending any closed meetings or the Master Class: Shareholder Evaluation of Directors), the conference will start on Wednesday, September 13 with the first plenary session at 4 PM PT. Please contact CII staff at 202.822.0800 with any questions.

### Press:

Members of the press are allowed at all receptions, plenary and breakout sessions on Wednesday, September 13 and Thursday, September 14. Sessions on Friday, September 15, are closed to press.

Closed  | Optional  | Fee 

### Wednesday, September 13, 2017







#### Member Lounge

9:00 AM - 7:00 PM	Member Lounge Indigo 206
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#### Registration

10:00 AM - 7:00 PM	Registration and Information Desk Open Indigo West Foyer
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#### Closed Meetings

10:00 AM - 11:15 AM	CII Corporate Governance Advisory Council Meeting TBD	 
10:00 AM - 11:15 AM	CII Markets Advisory Council Meeting TBD	 
10:00 AM - 11:15 AM	CII Policies Committee Meeting Indigo A	 



#### Member-Hosted Meetings (Open to All Attendees)

11:00 AM - 1:15 PM	Impacts of Immigration Policies on Institutional Investors Indigo B	
11:00 AM - 1:15 PM	Implementing the Paris Agreement goals through sustainable food supply chains Elevation Room	

#### Closed Meetings

11:15 AM - 11:45 AM	CII Board of Directors and Advisory Council Coffee Indigo Terrace	 
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#### Education Course

11:45 AM - 1:45 PM	Master Class: Shareholder Evaluation of Directors Indigo F	 
Speakers: <a href="#">Rusty O'Kelley</a> , <a href="#">Chris Cernich</a> , <a href="#">Donna Anderson</a> , <a href="#">Anne Sheehan</a> , <a href="#">William Jones</a> , <a href="#">Michael Garland</a>		

#### Closed Meetings

1:30 PM - 3:30 PM	Engagement Exchange Indigo A/E	 
2:00 PM - 3:30 PM	Trustee Roundtable TBD	

#### Plenary Sessions

4:00 PM - 5:00 PM	Public Companies: An Endangered Species? Indigo Ballroom
Speakers: <a href="#">David Brown</a> , <a href="#">Michael Mauboussin</a> , <a href="#">Robert McCoey</a>	

Moderators: [Frank Partnov](#)

5:00 PM - 6:00 PM **Directors Speak Out**  
**Indigo Ballroom**

Speakers: [Richard Hill](#),  
[Daniel Cooperman](#),  
[Mary Beth Vitale](#)

Moderators: [Dannette Smith](#)

**Closed Meetings**

6:00 PM - 6:30 PM **New Member & First-Time Attendee Welcome**  
**Elevation Room**

**Networking Reception**

6:00 PM - 7:30 PM **Welcome Cocktail Reception**  
**Promenade Plaza**

**Member-Hosted Meetings (Open to All Attendees)**

7:30 PM - 9:00 PM **Diversifying Diversity: Exploring the Dimensions of a Truly Diverse Board**  
**Elevation Room**

7:30 PM - 9:30 PM **The Intersection of Climate Change and Shareholder Votes**  
**Indigo Terrace**

Thursday, September 14, 2017

**Registration**

7:30 AM - 6:30 PM **Welcome & Information Desk Open**  
**Indigo West Foyer**

**Member Lounge**

7:30 AM - 7:00 PM **Member Lounge**  
**Indigo 206**

**Food/Meals**

7:45 AM - 8:30 AM **Breakfast**  
**Indigo Ballroom**

**Plenary Sessions**

8:30 AM - 8:40 AM **Welcome**  
**Indigo Ballroom**

Speakers: [Ken Bertsch](#),  
[Theresa Whitmarsh](#)

8:40 AM - 9:30 AM **Human Complexity and the Financial Markets**  
**Indigo Ballroom**

Keynote Speaker: [Richard Bookstaber](#)

9:30 AM - 10:30 AM **CIOs Speak: Is the Endowment Model Still Viable?**  
**Indigo Ballroom**

Speakers: [Ted Eliopoulos](#),  
[Robert Jacksha](#),  
[John Skjervem](#)

Moderators: [Mark Anson](#)

**Food/Meals**

10:30 AM - 11:00 AM **Networking Break**  
**Indigo Terrace**

**Breakout Sessions**

11:00 AM - 12:00 PM **Human Capital: How to Value, How to Disclose**  
**Indigo B**

Moderators: [Cambria Allen](#)

11:00 AM - 12:00 PM	<b>Methodology of Index Providers</b> <b>Indigo E</b> Speakers: <a href="#">David Blitzler</a> , <a href="#">Linda-Eling Lee</a> Moderators: <a href="#">Annalisa Barrett</a>	•
11:00 AM - 12:00 PM	<b>The Audit Committee in Action: Simulated Response to a Whistleblower</b> <b>Indigo A</b> Speakers: <a href="#">Terrence Ward</a> , <a href="#">Cindy Fornelli</a> , <a href="#">Bruce Blakley</a> , <a href="#">Sara Lewis</a> , <a href="#">Dan Carter</a>	•

**Food/Meals**

12:15 PM - 2:00 PM	<b>Luncheon Keynote Address</b> <b>Indigo Ballroom</b> Speakers: <a href="#">William Hinman</a> , <a href="#">Greg Smith</a>	•
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**Constituency Meetings**

2:15 PM - 3:15 PM	<b>Associate Members' Meeting</b> <b>Indigo E</b>	•
2:15 PM - 3:15 PM	<b>Corporate General Members' Meeting</b> <b>Indigo B</b>	•
2:15 PM - 3:15 PM	<b>Public General Members' Meeting</b> <b>Indigo A</b>	•
2:15 PM - 3:15 PM	<b>Union General Members' Meeting</b> <b>Indigo F</b>	•

**Food/Meals**

3:15 PM - 3:45 PM	<b>Networking Break</b> <b>Indigo Terrace</b>	
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**Member-Hosted Meetings (Open to All Attendees)**

3:45 PM - 5:30 PM	<b>Human Capital Management: Opportunities and Risks at Tesla</b> <b>Indigo F</b>	•
3:45 PM - 5:30 PM	<b>Individual Lawsuits in the Wake of CalPERS v. ANZ Securities</b> <b>Indigo B</b>	•
3:45 PM - 5:30 PM	<b>Proxy 101: Understanding the Voting Chain</b> <b>Indigo E</b>	•
3:45 PM - 5:30 PM	<b>Shifting Investor Perspectives on Climate Risk &amp; Board Climate Competency</b> <b>Indigo A</b>	•

**Closed Meetings**

4:00 PM - 5:00 PM	<b>CII Board of Directors Meeting</b> <b>Elevation Room</b>	•
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**Networking Reception**

5:30 PM - 6:30 PM	<b>Cocktail Reception</b> <b>Indigo Terrace</b>	
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Friday, September 15, 2017

**Food/Meals**

8:00 AM - 9:15 AM	<b>General Members' Business Meeting &amp; Breakfast</b> <b>Indigo Ballrooms B/F</b>	•
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**Registration**

8:00 AM - 12:00 PM	<b>Registration &amp; Information Desk Open</b> <b>Indigo West Foyer</b>	
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**Member Lounge**

8:30 AM - 12:00 PM	Member Lounge Sponsored <b>Indigo 206</b>
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**Food/Meals**

8:45 AM - 9:30 AM	Breakfast <b>Indigo Ballroom</b>
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**Plenary Sessions**

9:30 AM - 9:45 AM	<b>Policies Committee Update</b> <b>Indigo Ballroom</b> Speakers: <u>TerriJo Saarela</u>
9:45 AM - 10:30 AM	<b>International Governance Committee</b> <b>Indigo Ballroom</b> Speakers: <u>Melissa Brown</u>

10:30 AM - 10:45 AM	Break <b>Indigo West Foyer</b>
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**Plenary Sessions**

10:45 AM - 12:15 PM	Shareholder Advocacy Committee <b>Indigo Ballroom</b> Speakers: <u>Michael Frerichs</u>
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**Food/Meals**

12:15 PM - 1:15 PM	Networking Buffet Lunch <b>Indigo Ballroom</b>
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## Roundtable for Consultants & Institutional Investors

October 4-6, 2017 ■ Four Seasons Hotel ■ Chicago, IL

### Roundtable Co-Chairs:

Stephen P. McCourt, CFA, **Meketa Investment Group**

J. Keith Mote, CFA, **Pavilion Advisory Group**

### Advisory Board

#### *Investment Consultants*

Jim Vos, **Aksia LLC**

Alan D. Biller, **Alan Biller & Associates**

James Walsh, **Albourne America LLC**

Mike Welker, **AndCo Consulting**

Michael A. Rosen, **Angeles Investment Advisors LLC**

Stephen T. Cummings, CFA, **Aon Hewitt Investment Consulting, Inc.**

George Tarlas, CFA, **Asset Consulting Group**

Jim Callahan, CFA, **Callan Associates Inc.**

David R. Druley, **Cambridge Associates LLC**

Debashis Chowdhury, **Canterbury Consulting**

Cynthia Potter, **Cardinal Investment Advisors LLC**

Stephen L. Nesbitt, **Cliffwater LLC**

Charlie Georgalas, CFA, **Colonial Consulting, LLC**

Robert DiMeo, **DiMeo, Schneider & Associates, LLC**

Russell W. Hill, **Ellwood Associates**

Scott B. Harsh, **Fund Evaluation Group, LLC**

Edward F. Johnson, **LCG Associates, Inc.**

Brian Wrubel, **Marquette Associates, Inc.**

Richard Nuzum, CFA, MBA, **Mercer**

Michael P. Manning, CFA, CAIA, **NEPC, LLC**

Allan R. Emkin, **Pension Consulting Alliance, LLC**

Robin Pellish, **Rocaton Investment Advisors, LLC**

Rachel Carroll, CFA, **Russell Investments**

Jim "James" Voytko, **RVK, Inc.**

Michael D. Joyce, Esq., CEBS, **Segal Marco Advisors**

Stephen P. Holmes, CFA, **Summit Strategies Group**

Shelly Heier, **Verus**

Steven M. Carlson, **Willis Towers Watson**

Andrew Junkin, CFA, CAIA, **Wilshire Associates**

#### *Asset Owners*

Susan Chung, CFA, **Allstate Investments**

Ryan Bailey, CFA, FRM, CAIA, CMT, **Children's Health**

Craig Robbins, **Children's Hospitals and Clinics of Minnesota**

David Silber, CFA, **City of Milwaukee Employees' Retirement System**

Douglas J. Brown, **Exelon Corporation**

Kenyatta Matheny, **EquiTrust Life Insurance Company**

Carol Y. Chan, CFA, **EY**

Steven P. Klimkowski, **Northwestern Memorial HealthCare**

Jason MacDonald, **Rutgers University**

Craig M. Lawson, **Univar USA, Inc.**

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## *Perfecting the Trifecta*

*You must aspire to "adequate," not extraordinary, performance.*

*- Benjamin Graham and David L. Dodd, "Security Analysis"*

*Things fall apart; the centre cannot hold;*

*- W. B. Yeats "The Second Coming"*

As the industry ticks off another year in the 2nd longest bull market on record, investors remain challenged to properly diligence, source and monitor compelling, yet cost-efficient, portfolio opportunities. If the current era is truly the late-stage of an economic megacycle – characterized by globalization, a low interest rate environment and central bank intervention – what will be the effects of the new administration's fiscal policy, normalization of monetary policy and continued structural shifts in the asset management industry? And as hope fades for near-term legislative approval of regulation relaxation, tax reform and massive infrastructure spending programs, institutions are coming to terms with a much more modest economic reality. If the only certainty is uncertainty, what strategies, tools and information can best equip asset owners and advisors alike to successfully fulfill the objectives of generating attractive returns and managing risks in the current investing environment?

The 2017 Roundtable for Consultants & Institutional Investors will explore the relationship and interdependency of the various constituents of the asset management industry and provide a venue to discuss the opportunities and challenges in today's marketplace.

### **Tuesday, October 3, 2017 (Pre-Roundtable)**

4:30 -5:00pm

#### **Registration for Allocators & Consultants**

5:00 -6:00pm

#### **Private Conversation for Allocators & Investment Consultants Only**

##### *Is Asset Management a Meritocracy?*

Institutional allocators and investment consultants, gather for a private discussion ahead of the main event on the status of talent in our industry. Does everyone have a fair shot at success? And if not — as the demographic statistics suggest — are investors' efforts making a difference? In the wake of a memo that shook Google, do established and young finance firms face the same issues that are endemic in tech? What would happen if that memo came out of a big bank or asset manager? To managers of all demographics, how do you recruit and retain for talent of all backgrounds, for your team and your portfolio? To those who feel we've had this conversation before, turn to the numbers: It's not fixed yet. Cocktails to follow.

##### **Co-Chairs:**

**Shelly Heier, CFA, CAIA, President & COO, Senior Consultant, Verus**

**Lisa M. Laird, Chief Investment Officer, Providence St. Joseph Health**

**Molly A. Murphy, Chief Investment Officer, Orange County Employees Retirement System**

6:00 -7:30pm

#### **Registration & Welcome Reception**

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## Wednesday, October 4, 2017

7:30 – 8:30am

### Registration & Buffet Breakfast

8:30 – 8:45am

### Welcome and Introductory Remarks

**Kip McDaniel**, *Chief Content Officer and Group Editorial Director*, Institutional Investor

**Stephen P. McCourt**, *CFA, Managing Principal / Co-Chief Executive Officer*, Meketa Investment Group

8:45 – 9:30am

### Is it News or Just Noise?

In an industry that is sensitive to any type of potential market-moving intel, and a fiercely competitive financial infrastructure that seeks to get the information edge, investors are challenged to parse through a constant barrage of signals 24/7/365. But each day brings more “breaking news” along with the requisite ‘red alert ribbon’ scrolling continuously across the bottom of our many screens. And as the bloom comes off the expanding economic rose promised by the new administration, investors remain skeptical regarding the ability of stocks, bonds and especially hedge funds to meet their expectations. This panel of industry thought-leaders will discuss how they’re processing and reacting to relentless streams of data and information that may, or may not be impactful on their investment decisions. Specifically, how can investors, who seek to balance their quest for alpha with their need for consistent returns, efficiently sift through the noise to identify opportunities – and know if, when, and how to pivot?

**Moderator: Harvey Shapiro**, *Senior Advisor*, Institutional Investor

**Susan Chung**, *CFA, Head of Global Strategy*, Allstate Investments

**Anthony Fobel**, *Managing Partner, Private Debt Group*, BlueBay Asset Management

**Anthony A. Yoseloff**, *Deputy Executive Managing Member*, Davidson Kempner Capital Management LLC

*Additional panelist to be announced.*

9:30 – 10:15am

### Alpha, Where Art Thou?

Effectively identifying and extracting alpha remains the top priority for institutional investors of every stripe. Mandated to balance risk, return and liquidity, investment officers have to tow a fine line when trying to bridge the divide between their short and long-term objectives. This becomes even more difficult in a stubbornly low return environment where hedge funds and alternative strategies continue to underperform despite high fees. Yet, now more than ever, once steadfast managers are more open to negotiation but, at the end of the day, talent trumps all. And once the talent has been properly sourced, how do you ensure your due diligence procedures optimally address the inherent risks? What systems are used to monitor your investments and what can you do to protect the organization from unexpected consequences? This panel will provide their insights on how they are rethinking terms, challenging industry standards and managing their stakeholders expectations.

**Moderator: Kip McDaniel**, *Chief Content Officer and Group Editorial Director*, Institutional Investor

**Derek Drummond**, *Managing Analyst*, State of Wisconsin Investment Board

**Brad Gilbert**, *CFA, CAIA, Senior Director of Hedge Funds*, Teacher Retirement System of Texas

**James Walsh**, *Partner and Head of Portfolio Group*, Albourne America LLC

10:15 – 10:45am

## Coffee Break

10:45 – 12:00pm

## Idea Labs: Innovative Portfolio Construction

These breakout groups will discuss best practices and key criteria for investing in hedge funds and other alternative strategies in the current investment environment. Delegates will explore where and why investors are allocating now, and review what they require from their consultants and manager partners.

### IDEA LAB LEADERS:

1. **Robert DiMeo**, *Managing Director*, DiMeo, Schneider & Associates, LLC  
**Kevin A. Edwards**, *Senior Investment Director*, Hartford HealthCare
2. **Heath M. Bray**, *CFA, FRM, Senior Portfolio Manager*, Kemper Corporation  
**Jonathan Pliner**, *CFA, Portfolio Manager*, Willis Towers Watson  
**Douglas Smith**, *CFA, Senior Hedge Fund Consultant, Hedge Fund Research*, Willis Towers Watson
3. **Jason Rector**, *CFA, Analyst*, State of Wisconsin Investment Board  
**David Sancewich**, *Managing Director*, Pension Consulting Alliance, LLC
4. **Pete Keliuotis**, *Senior Managing Director*, Cliffwater LLC  
**Habiba Waziruddin**, *Investment Associate*, Memorial Sloan Kettering Cancer Center
5. **Buck Betten**, *Director, Derivative Strategies*, John D. and Catherine T. MacArthur Foundation  
**George Tarlas**, *CFA, Senior Managing Director*, Asset Consulting Group
6. **Michael D. Joyce, Esq., CEBS**, *Senior Vice President*, Segal Marco Advisors  
**Edward Shim**, *Investment Officer – Diversifying Strategies: Hedge Funds*, Teachers' Retirement System of the State of Illinois

12:00 – 1:15pm

## Seated Lunch

1:15 – 2:00pm

## Hitting the Trifecta

This free-flowing dialogue will provide an insider's look at the special, and sometimes tension-based, dynamic between the industry power players: the allocator, the consultant and the fund manager. Through an inquisitive examination of the panelists we will learn what is necessary for a successful partnership? What can lead to its demise? How has this dynamic changed and why?



**Moderator: Kip McDaniel**, *Chief Content Officer and Group Editorial Director*, Institutional Investor

**Dmitry Balyasny**, *Founder & CIO*, Balyasny Asset Management

**David J. Holmgren**, *Chief Investment Officer*, Hartford HealthCare

**Jim Vos**, *Chief Executive Officer*, Aksia LLC

2:00 – 2:45pm

## When Artificial Intelligence Wins, Who in Asset Management Loses?

Artificial intelligence holds immense potential for mankind—and in asset management. But the advent of investment-management-by-neural-network brings with it a unique set of challenges for those who have to pick which managers to work with, not least of which is this: How do you select an asset manager when the people running the fund don't even know what's going on inside their investment model?

**Moderator: Kip McDaniel**, *Chief Content Officer and Group Editorial Director*, Institutional Investor

**Angelo Calvello**, Co-Founder, Rosetta Analytics & *Institutional Investor* columnist

**Ashby Monk**, Executive Director and Research Director, Global Projects Center at Stanford & *Institutional Investor* columnist

2:45 – 3:15pm

## Coffee Break

3:15 – 4:00pm

## Concurrent Workshops:

### I. Private Credit

Seeking enhanced returns, investors have surged into the private credit arena. Although the phrase “private debt” can be inclusive of special situations and distressed investments, the proliferation of direct/private lending strategies has investors grappling with an array of questions. Yet with so many managers hanging a shingle, how can an investor truly separate the wheat from the chaff? And once skill has been identified, questions still remain regarding benchmarks, the cost of the illiquidity premium, risk assessment and the correct utilization of leverage. This panel will examine the private credit sector, discuss the return potential in the current macro climate and debate the future of capital in the market.

**Moderator: Tod Trabocco**, *CFA, Managing Director*, Cambridge Associates LLC

**Blair D. Faulstich**, *Managing Director*, Benefit Street Partners

**Mark Koschik**, *Senior Portfolio Manager*, Exelon Corporation

**Michael Lamont**, *Principal and Co-Chief Investment Officer*, Seer Capital Management

**Robert Thompson**, *Senior Portfolio Manager – Credit*, UPS Group Trust

### II. Infrastructure Investing

Fueled by an increased willingness of governments across the globe to support investment in infrastructure projects, competition for deal access has grown fierce. Be it roads, airports, ports or power plants, competition is fierce reflected in ever increasing valuations. How are institutions allocating to core infrastructure and how does one obtain better transparency, lower fees and more flexible terms? This panel will discuss and debate these questions and more.

**Moderator: James (Jim) R. McMillan**, *Senior Vice President*, Courtland Partners, Ltd.

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**Christian Busken**, *Senior Vice President – Director of Real Assets Research*, Fund Evaluation Group, LLC

**David Hunter**, *Chief Investment Officer*, North Dakota Legacy Fund

**Todd Lapenna**, *Partner*, StepStone Group LLC

**Angela Miller-May**, *Director of Investments*, Chicago Public School Teacher's Pension

### III. Healthcare Venture Investing

As new technologies arise, and expenditures devoted to healthcare grow along with an aging populace, investing in this burgeoning sector would seem to be a sure thing. However, an increased regulatory environment, characterized by strict guidelines and exacting procedures, has resulted in greatly elongated market lead times. And traditional healthcare entities, such as large corporations and government agencies, along with insurers, hospitals, big pharma and industry regulators, have proven resistant to change. Given these significant challenges what does it take to successfully source the best opportunities and fully understand the risks involved? This panel of industry experts will explore will provide their opinions and provide insight in order to help participating in healthcare going forward.

**Moderator: Timothy Egan**, *Senior Investment Consultant*, Ellwood Associates

**William Deu Lee**, *Chief Investment Officer*, New York Presbyterian Hospital

**Craig Robbins**, *Senior Investment Strategist*, Children's Hospitals and Clinics of Minnesota

**Liz Rockett**, *Director*, Kaiser Permanente Ventures

4:00 – 4:10pm

#### Transition Time

4:10 – 5:00pm

#### Concurrent Workshops:

##### I. Innovative Risk Management

Traditionally, portfolio risk has been analyzed and assessed in a formally segmented fashion. However, a new generation of thought leaders are taking a different approach. What assets and methodologies are being utilized and what role do they play in mitigating portfolio risk? Is there a new look to alternative assets that are non-correlated or is this concept outdated? Can diversification and risk be managed independently and will this help investors build more efficient portfolios? Do fee structures adequately reflect the true measure of risk assumed or are they merely representative of unnecessary complexity and excess human capital? This esteemed line-up of seasoned investment officers will discuss how they are innovatively addressing the risk parameters of their portfolios.

**Moderator: Scott B. Harsh**, *President & Chief Executive Officer*, Fund Evaluation Group, LLC

**John Patin**, *Chief Investment Officer*, Allied World Assurance Company

**Rip Reeves**, *Chief Investment Officer/Treasurer*, AEGIS Insurance Services

**Greg Richardson**, *Chief Risk & Strategy Officer*, TransRe

##### II. Responsible and Impact Investment: Stronger Together!

In order to survive the shifting landscape of asset management, active managers must continue to provide products and strategies that are both distinct and innovative. One area where these characteristics are becoming more prominent is the ESG and impact investing arena. Traditionally thought of as two separate concepts, with very different types of practitioners, these once independent zones seem to be intersecting. This convergent movement has resulted in a significant sweet spot for investors which can efficiently span across a variety of asset classes. This would include private equity, fixed income, real assets,

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infrastructure and even public equities. This panel will explore how allocators can generate top-tier returns through strategies that consider, simultaneously, both impact AND social, economic, and environmental issues and opportunities. How can “integrated analysis” lead to a sustainable competitive advantage at the company and strategy level? Where are the opportunities now, and what should we expect going forward?

**Moderator: Andrew Siwo**, *Senior Research Analyst*, Colonial Consulting Group, LLC

**Matt Christensen**, *Head of Responsible Investment*, AXA Investment Management

**Lori D. Mills, CFA**, *Director of Research*, Asset Consulting Group

**Shuaib Siddiqui**, *Director, Impact Investing*, Surdna Foundation

**Susan Slocum**, *Treasurer & Investment Officer*, Children’s Hospitals and Clinics of Minnesota

5:45pm

## Walk from Four Seasons to Del Frisco’s Double Eagle Steak House

6:00 – 8:30pm

## Reception, Dinner & Presentation of the Healthcare Investors Awards at Del Frisco’s Double Eagle Steak House

58 E Oak St, Chicago, IL 60611

Located in the heart of Chicago's Gold Coast neighborhood, Del Frisco's occupies three floors of the former Esquire Theater. Its lavish interior was designed to preserve the landmark theatre’s historic architectural elements and create an intimate dining environment featuring a magnificent three-story wine tower. This magnificent venue will serve as the perfect backdrop for our annual *Healthcare Investor Awards* celebration.

## Thursday, October 5, 2017

7:00 – 8:15am

### Private Breakfasts & Conversations:

- Healthcare Executives

#### Co-Chairs:

**Lisa M. Laird**, *Chief Investment Officer*, Providence St. Joseph Health

**William Deu Lee**, *Chief Investment Officer*, New York Presbyterian Hospital

7:15– 8:15am

### Registration & Buffet Breakfast

8:15 – 8:30am

### Welcome and Introductory Remarks

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**Kip McDaniel**, *Chief Content Officer and Group Editorial Director*, Institutional Investor

**J. Keith Mote**, *CFA, President and Managing Director*, Pavilion Advisory Group

8:30 – 9:30am

## Featured Speaker

**Campbell R. Harvey**, *J. Paul Sticht Professor of International Business*, Fuqua School of Business, Duke University;  
*Research Associate*, National Bureau of Economic Research; *Editor*, The Journal of Finance

**Introduction by: David Blide**, *Publisher*, Institutional Investor Journals

9:30 – 10:15am

## Having Skin in the Game

The relationship between asset owners and investment consultants has rapidly moved beyond manager research and selection to the pursuit of “solutions.” Yet, it is the concept of trust which remains at the heart of this dynamic. As consultant services expand so have the issues surrounding conflicts of interest. And as investors take on more risk to reach their assumed rate of return, it often falls on the investment consultant to provide a stark dose of reality. Whether this means delivering bad news or merely managing expectations, consultants continue to face numerous challenges as a business to assist their clients. With fee pressures inundating every aspect of the industry, how can faith in active management be promoted? Given the complexity and risks inherent in today’s markets, how can advisors best service their clients from both a return and fiduciary standpoint? In this fast-moving, round-robin format, allocators and consultants will discuss and debate how the interests of both parties can be optimally aligned for the best outcomes all around.

**Moderator: Kip McDaniel**, *Chief Content Officer and Group Editorial Director*, Institutional Investor

**Samuel Gallo**, *CPA, CAIA, Chief Investment Officer*, University System of Maryland Foundation, Inc.

**Larry Goldsmith**, *Vice President- Pension & Investments*, Walt Disney Company

**Andrew Junkin**, *CFA, CAIA, President*, Wilshire Associates

**J. Keith Mote**, *CFA, President and Managing Director*, Pavilion Advisory Group

10:15 – 10:45am

## Coffee Break

10:45 – 11:30am

## Featured Speaker

### *Is Passive Investing the Next Bubble?*

The debate on active vs. passive investing has been heating up in last few years and investors are becoming more and more attuned to passive investment funds. Ned Davis, Senior Investment Strategist and Founder at the firm that bears his name, raises important questions about the passive passion. In a recent note to clients, Davis makes a convincing case that a bubble is forming in the passive space. This contrarian view suggests that the actives “have great opportunity to outperform passive managers” in the next five years.

**Introduction by: Harvey Shapiro**, *Senior Advisor*, Institutional Investor

**Ned Davis**, *Senior Investment Strategist & Founder*, Ned Davis Research Group

11:30 – 12:45pm

## Idea Labs: Asset Allocation and the Roles of the Investor, Consultant and Manager in the Decision-Making Process

Reflecting on the earlier sessions, these breakout discussion groups will examine the latest thinking about who should decide what in the asset allocation process and what are the best metrics on which they should be measured.

### IDEA LAB LEADERS:

1. **Rachel Carroll, CFA, Managing Director, Consulting, Russell Investments**  
**Ty Powers, CFA, Portfolio Manager - Multi-Strategy, North Carolina Department of State Treasurer**
2. **Jim Callahan, CFA, Executive Vice President, Manager & Head of Fund Sponsor Consulting, Callan Associates Inc.**  
**David Silber, CFA, Chief Investment Officer, City of Milwaukee Employees' Retirement System**
3. **Christopher Gill, Director of Public Markets, Georgetown University**  
**Shelly Heier, CFA, CAIA, President & COO, Senior Consultant, Verus**
4. **Cynthia Potter, Managing Director, Cardinal Investment Advisors, Inc.**  
*Co-Leader to be announced.*
5. **Kristin R. Finney-Cooke, CAIA, Senior Consultant, NEPC, LLC**  
**Leslie Lenzo, CFA, Chief Investment Officer, Advocate Health Care**
6. **Edward F. Johnson, President & Chief Executive Officer, LCG Associates, Inc.**  
**Brian Neale, Senior Director of Investments, University of Nebraska Foundation**

12:45 – 2:00pm

## Seated Lunch

2:00 – 2:45pm

## Asset Allocation: Regrets, I've Had a Few...

With the 10-year anniversary of the '08-'09 financial meltdown rapidly approaching, investors are often forced to self-reflect and question the degree to which they have evolved in order to confront the next crisis(es). Yet making a direct comparison to that earlier time can be difficult given the current unprecedented geo-political issues, sustained high equity prices and continued low expected rate of returns. Today's investors are challenged not just by the markets but also, and maybe more importantly, by the sheer number of choices they have to consider. In light of these conditions, how are investors currently positioning their asset allocations and what are they doing different now versus 4-5 years ago? Have they changed the way that they work with consultants and managers in order to make the most of those relationships and, in turn, boost performance? How are they critically addressing the choice between active vs passive across the portfolio and does this influence the way they think about their asset allocation? What tools are they utilizing to effectively gauge the success, or lack thereof, of their chosen strategies? If given a "do-over" what might they do differently in order to best achieve their goals? And what kinds of contrarian ideas do you

hold and, on the flip side, where do you see the best opportunities? This panel will discuss their various approaches to asset allocation now and going forward.

**Moderator: Harvey Shapiro**, *Senior Advisor, Institutional Investor*

**Ryan Bailey**, *CFA, FRM, CAIA, CMT, Head of Investments, Children's Health*

**Cameron Black**, *Chief Investment Officer, Blue Cross Blue Shield of Arizona*

**Jonathan Glidden**, *CFA, Managing Director – Pensions, Delta Airlines*

**Scott McIntosh**, *Managing Director, Global Diversified Program - Capital Markets, OMERS*

2:45 – 3:15pm

## Coffee Break

3:15 – 4:05pm

## How to Best Organize the Investment Effort

In an industry often chided for promoting group think on asset allocation strategies or new products, views regarding the optimal structure for the investment program continue to move in many – often contradictory – directions at the same time. The choices asset owners face – specifically in internal staffing and organization, as well as the engagement of external asset management and advisory support – all aim to best meet the investment goals of the organization while keeping related expenses to a minimum. But not every asset owner is coming to the same conclusions. A broad array of insourcing and outsourcing options are springing up and as they do, asset owners are questioning the structure and operation of their investment programs. Three factors are driving the review of the investment organization – (1) the prospect of lower returns ahead, coupled with (2) pressures to pay DB benefits or maintain E&F spending policies, and (3) vocal criticism of investment management costs. Helping to answer these questions is a panel of industry experts who will discuss, debate and move well beyond the simplistic discussion of OCIO or OCI-No?

**Moderator: Jim Voytko**, *President, Director of Research, Senior Consultant, Principal, RVK, Inc.*

**Jonathan D. Hook**, *Chief Investment Officer, The Harry and Jeanette Weinberg Foundation*

**Stephen P. McCourt**, *CFA, Managing Principal / Co-Chief Executive Officer, Meketa Investment Group*

**Anthony S. Waskiewicz**, *CFA, Chief Investment Officer, Mercy Health*

4:05 – 5.00pm

## Concurrent Workshops:

### I. Successfully Navigating the DC Seas (or How NOT to Get Sued)

Lawsuits involving manager fees are weighing heavily on the mind of many DC plan sponsors, and even asserting an influence on plan management. This panel will assess the implications of recent lawsuits and address the range of issues around fees as well as those associated with monitoring and evaluating plan investments. These include: cutting-edge tactics in plan fee payment approaches, revenue sharing, ERISA accounts, and rebating plan fees. In addition, the use of index funds and institutional vehicles, such as collective trusts and separate accounts, and the role of the investment policy statement will also be addressed.

**Moderator: Lori Lucas**, *CFA, DC Practice Leader, Callan Associates*

**Mark B. Blocker**, *Partner, Sidley Austin LLP*

**Steven M. Carlson**, *Head of Investment, Americas*, Willis Towers Watson

**Flora Li Hedrick**, *Managing Director*, ICMA Retirement Corporation

**Marla Kreindler**, *Partner*, Morgan, Lewis & Bockius LLP

## II. Emerging Markets: Where's the Opportunity Set?

When it comes to the emerging markets, China is the proverbial – and literal – elephant in the room, as the story of the economic powerhouse continues to unfold across, not only the emerging market, but also across the global chessboard. How should investors be positioning themselves going forward? Where should investors consider adjusting their country, region and/or benchmark, focus? Are the emerging and frontier markets worth the risk of exploring uncharted territory, against the backdrop of the growing middle class worldwide? This panel of industry thought leaders will provide their perspectives regarding the shifting world puzzle and how investors should best position their “pieces” to fit in.

**Moderator: Michael A. Rosen**, *Principal and Chief Investment Officer*, Angeles Investment Advisors LLC

**Greg Van Guilder**, *Chief Investment Officer/Chief Financial Officer*, ECMC Group

**Richard Nuzum**, *CFA, MBA, Wealth Leader*, Growth Markets Region, Mercer

**Rohan Pandit**, *Investment Director*, Cook Children's Health Care System

5:00 – 5:45pm

### Insurance Happy Hour

For insurance executives only, this facilitated closed-door discussion is designed as an opportunity for peers to share thinking and exchange ideas.

### Healthcare Happy Hour

For healthcare fund executives only, this facilitated closed-door discussion is designed as an opportunity for peers to share thinking and exchange ideas.

**Chair: Susan Slocum**, *Treasurer & Investment Officer*, Children's Hospitals and Clinics of Minnesota

5:45pm

### Buses depart Four Seasons for Fig & Olive

6:00 – 8:30pm

### Reception & Dinner at Fig & Olive

104 East Oak Street, Chicago, IL 60611

## Friday, October 6, 2017

7:30 – 8:45am

### Private Breakfasts & Conversations:

- Heads of Consulting Firms

**Breakfast Chair: Michael P. Manning**, *CFA, CAIA, Managing Partner*, NEPC, LLC

- Heads of Children's Hospitals

**Breakfast Chair: Susan Slocum, Treasurer & Investment Officer, Children's Hospitals and Clinics of Minnesota**

7:45 – 8:45am

## Buffet Breakfast

8:45 – 9:30am

## Featured Speaker

The value of stock picking is being questioned as never before. The press regularly takes active money managers to task, with statements such as “almost every actively managed equity fund in Europe investing in global, emerging and U.S. markets has failed to beat its benchmark over the past decade” (Financial Times, March 20, 2016). Investors who have not entirely abandoned active money managers have recently been favoring more concentrated approaches. These investors are intrigued by academic research that claims that mutual funds with higher active share tend to have better future performance. This presentation will focus on three issues: what investors should expect from active managers going forward; whether investing in funds with high active share makes sense; and whether it is still possible to find U.S. stocks that are not so expensive.

**Moderator: Harvey Shapiro, Senior Advisor, Institutional Investor**

**Professor Josef Lakonishok, Founding Partner, CEO and CIO, LSV Asset Management**

9:30 – 10:15am

## Pardon the Interruption

Taking a page from ESPN, this panel of seasoned industry leaders will discuss how they are advising their clients for both the near and longer term. What are the chief concerns of their clients and what are the different scenarios being explored? What products and strategies are being proposed and why? Do they have a strong bias towards any specific geographic area(s)? How has their firm's approach to manager research and selection evolved? And what is it about the human capital and cultural aspects of their organization that has allowed them to remain competitive in a constantly shifting industry landscape.

**Moderator: Kip McDaniel, Chief Content Officer and Group Editorial Director, Institutional Investor**

**Stephen T. Cummings, CFA, Senior Partner, Chief Executive Officer, Aon Hewitt Investment Consulting, Inc.**

**Allan R. Emkin, Founder, Managing Director, Pension Consulting Alliance, LLC**

**Stephen P. Holmes, CFA, President, Summit Strategies Group**

**Michael P. Manning, CFA, CAIA, Managing Partner, NEPC, LLC**

**Robin Pellish, Chief Executive Officer, Rocaton Investment Advisors, LLC**

10:15 – 10:45am

## Coffee Break

10:45 – 11:30am

## Concurrent Workshops:

### I. The DOL Fiduciary Rule: Done Deal or More to Come?

After many fits and starts, a new fiduciary rule is scheduled to take effect in June of this year, with full implementation by January 1, 2018. But just when it seemed the book would finally be closed on this important legislation, a few days after his inauguration, President Donald Trump ordered the DOL to examine whether the new rule would adversely affect access to retirement saving advice and to conduct a new economic and legal analysis of its likely impact. Thus, there may well be additional



changes to the fiduciary duty rule and related exemptions. In light of these recent developments, this panel will discuss the DOL fiduciary rule as it morphs and crystallizes under the Trump Administration. Most importantly: what will be the implications for industry participants and how?

**Moderator: Harvey Shapiro**, *Senior Advisor*, Institutional Investor

**George Michael Gerstein**, *Counsel*, Stradley Ronon Stevens & Young, LLP

**Ian S. Kopelman**, *Partner*, DLA Piper US LLP

**Stephen W. McCaffrey**, *Senior Counsel for Plans*, National Grid USA

**Karen Scheffler**, *Senior ERISA Legal Counsel*, AB

## II. Opportunities in Fixed Income: Working Harder AND Smarter

With low return expectations from traditional asset classes, and fixed income yields still near historical lows, many investors are looking to make their fixed income portfolios work harder, but in a more risk-controlled fashion. How can they square this circle? This panel will explore current thinking in fixed income investing and discuss how they are working both hard AND smart.

**Moderator: David H. Smith**, *Managing Partner*, Marquette Associates, Inc.

**Julie W. Austin**, *CFA, Director of Fixed Income*, Boeing

**Ben Bronson**, *Investment Officer*, Fire & Police Pension Association of Colorado

**Aoifinn Devitt**, *Chief Investment Officer*, Chicago Policemen's Annuity and Benefit Fund

**James Zelter**, *Managing Director – Credit*, Apollo Global Management, LLC

11:30 – 12:15pm

### Jim Grant—How We Got Here and What We Can Do About It

Long-time fixed income market observer Jim Grant will offer his views on developments in Washington and the implications for the financial markets. He'll put into historical perspective current policy proposals and their likely economic impact.

**Jim Grant**, *Editor*, Grant's Interest Rate Observer

12.15 – 1.15pm

Buffet Lunch

Roundtable Concludes

# CRCEA 2017 FALL CONFERENCE

## ALAMEDA COUNTY

**Monday, October 23 -  
Wednesday, October 25, 2017**

Meeting Date  
**09/13/17**  
Agenda Item  
**#9c.**

**Hilton Garden Inn  
San Francisco/Oakland Bay Bridge**

1800 Powell Street, Emeryville, CA 94608



### Conference Room Rate

\$229 + Tax

Breakfast included

Parking at \$7.50 per 24 hrs.

### Reservation Deadline

September 29, 2017

(to ensure room rate)

### Reservation Information

510-658-9300

### Hosted by

Retired Employees of  
Alameda County (REAC)

[www.reacsite.org](http://www.reacsite.org)

### Conference Information

email: [jjmjacobs@comcast.net](mailto:jjmjacobs@comcast.net)

510-835-5493



# California Retired County Employees Association

Representing Over 180,000 California County Retirees

August 28, 2017

CRCEA Delegates, Members, Affiliates and Friends of County Retirees,  
'37 ACT Retirement Board Members and Administrators:

Please accept this invitation to join your fellow retirees at our Annual CRCEA Spring Conference that will be held on **October 23-25, 2017** in historic Alameda County, California, hosted by the Retired Employees of Alameda County (REAC) and held at the **Hilton Garden Inn**, Emeryville, California

Traveling to Alameda County will give you the opportunity to visit another of California's wondrous and historic counties. With its military past, energy and academic history, along with some wonderful restaurants, REAC encourages you to join them for this conference.

CRCEA continues our work by providing you with current educational information relative to our present and future county retiree issue, so I am pleased to inform you that our Alameda Host Committee, your CRCEA Executive and Conference Committees have worked hard to bring you a meaningful and enjoyable Conference.

The past several conferences included Round Table Discussion, highlighting information and issues from various member associations, which were very well received. Thus, the Conference Executive Committee will expand this session to include the future mechanisms of our conferences and continue to allot time for individual associations to present informational materials and discussing problem areas, requests for assistance, along with successful accomplishments that may be helpful to other associations.

With the legislative year being the second session in Sacramento, time has been planned for our Legislation Session. We hopefully will bring together CRCEA legislative monitors and other "experts" dealing with the Sacramento scene. The analysis is always interesting and should provide insight into the future. Look for spirited discussion on the delayed pension initiative.

Included with this letter, you will be receiving the Tentative Program giving you an idea of the topics and great speakers we will be enjoying at the Conference. Our hosts are also providing entertainment and gifts guaranteed to make the Tuesday evening social event relaxing, fun and rewarding.

The Wednesday Morning Business Session is an important segment, with discussion from local associations as well as updates from all our Standing Committees. We will consider other business brought before the Delegates, who are the Board of Directors and the official voting body for CRCEA; not the least of which will be discussion of the "what now" relating to the pension reform initiative. It is important that every association be represented at the Conference, not only for the valuable information, but especially at the Business Session.

You are always welcome to bring members of your family and friends to the Conference. Plan now to attend. Encourage your Retirement Board Retiree Member (and Alternate) to join us. We look forward to seeing you in Emeryville.

Sincerely,

**E. F. "Skip" Murphy, President**

## OFFICERS

E. F. (Skip) Murphy, President  
Michael Sloan, Vice President  
Carlos Gonzalez, Treasurer  
Virginia Adams, Secretary  
William (Bill) de la Garza, Past Pres

## MEMBER ASSOCIATIONS

*Alameda  
Contra Costa  
Fresno  
Imperial  
Kern  
Los Angeles  
Marin  
Mendocino  
Merced  
Orange  
Sacramento  
San Bernardino  
San Diego  
San Joaquin  
San Mateo  
Santa Barbara  
Sonoma  
Stanislaus  
Tulare  
Ventura*

## AFFILIATE MEMBERS

EFI - A Division of Cheiron  
Guided Choice  
Liberty Mutual Group  
Member Extra, Inc.  
My Senior Health  
Pacific Group Agencies, Inc.  
Road Scholar  
Southland Credit Union  
The Segal Company  
Western Group Agencies, Inc.

A 501(c)4 Association



The Retired Employees of Alameda County (REAC) cordially invite you to attend the CRCEA Fall Conference to be held from October 23 ~ 25, 2017.

Hilton Garden Inn  
1800 Powell Street  
Emeryville, CA 94608

Reservations: (510) 658-9300 / Fax (510) 595-1914

On behalf of the Board of Directors for REAC, I want to invite you to attend the CRCEA 2017 Fall Conference in Emeryville California.

The Key Note speaker is Rosa “Rosie” Gumataotao Rios, the 23<sup>rd</sup> Treasure of the United States.

Legal updates include subjects of Retiree Benefits, Health Care, and Art Goulet and Amy Brown keeping us tuned in to Sacramento. Other topics include “The Millennials,” Retiree Wellness, and The Alameda County Sheriff’s Office presentation on the Emergency Services and Mutual Aid in Alameda County, and in California’s Region II.

Enclosed are Registration Forms for the Conference. Make copies of the Registration form for each attendee, including spouses and guests.

The Association Fee of \$75.00 and is paid only once by each County. (by the Delegate of the respective County). The Registration Fee for every person attending the Conference is **\$75.00** an increase from the 2017 Spring Conference. (Affiliate Company representatives are exempt from the Registration Fee)

Hotel reservations should be made directly with the Hilton Garden Inn before September 22, 2017. The room rate for CRCEA is \$229 plus taxes includes breakfast for two. In-house guests parking is \$7.50 for 24hr., non-inhouse attendees is \$5.00 for a day. The Hotel **does not** have a shuttle service to the Oakland Airport.

Any questions regarding the Conference please contact me at 510-535-5493, or [jjmjacobs@comcast.net](mailto:jjmjacobs@comcast.net)

Again, the Board and Members of REAC extends a warm welcome to CRCEA.

Jerry Jacobs: REAC Director and Conference Chair

**2017 CRCEA Fall Conference Registration Form  
October 23-25, 2017**

Hilton Garden Inn, San Francisco/Oakland Bay Bridge  
1800 Powell Street, Emeryville, CA 94608  
Reservations: (510) 658-9300 or Fax (510) 595-1914  
Hosted by: Retired Employees of Alameda County (REAC)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ e-mail: \_\_\_\_\_

Spouse/Guest Name: \_\_\_\_\_

Affiliate or Association: \_\_\_\_\_

Emergency Contact (Name/Phone): \_\_\_\_\_

Conference Registration Deadline: SEPTEMBER 30, 2017

Please check the appropriate box for your name badge designation/ complete title as desired in space

Delegate	<input type="checkbox"/>	Alternate Delegate	<input type="checkbox"/>	Retirement Board Member	<input type="checkbox"/>
Guest	<input type="checkbox"/>			CRCEA (officer)	<input type="checkbox"/>
Member	<input type="checkbox"/>				<input type="checkbox"/>

Association Fee \$ 75.00 (only on Delegate's form. Once per County) \$

Attendee Fee of \$ 75.00 \_\_\_\_\_ Each = \$

(To be paid by every attendee (including spouse/guest) **except** Affiliate and Host conference volunteers)

One Day only Parking add \$5.00 per Day for special conference rate. \$

**Banquet Tuesday Evening at \$55 Per Person**

Roasted Pork Loin	Quantity	<input type="text"/>	@\$55.00 Each	Total	\$ <input type="text"/>
Pan Seared Salmon	Quantity	<input type="text"/>	@\$55.00 Each	Total	\$ <input type="text"/>
Chicken Breast	Quantity	<input type="text"/>	@\$55.00 Each	Total	\$ <input type="text"/>
Vegetarian	Quantity	<input type="text"/>	@\$55.00 Each	Total	\$ <input type="text"/>

Total Amount Enclosed: (Association fee, attendee fee, banquet fee {for attendees})	\$ <input type="text"/>	Check # <input type="text"/>
Mail Check (payable to REAC) along with this Form to:	Jerry Jacobs 801 Franklin St. # 608 Oakland, CA 94607	

# 2017 CRCEA FALL CONFERENCE REGISTRATION FORM

**OCTOBER 23-25, 2017**

Hilton Garden Inn, San Francisco/Oakland Bay Bridge

Banquet Tuesday Evening October 24th at the "Top of the Bay" room.

## Menu

### Plated Dinner

Salad:

Baby Kale with Beets, Tomatoes, Pine Nuts, Goat Cheese, Lemon Vinaigrette.

Entrees: (choice of one)

**Roasted Pork Loin;** Peach Confit, Sautéed Broccolini, Yukon Mashed Potatoes. Grain Mustard Sauce.

**Pan Seared Atlantic Salmon;** Whole Wheat Ferro, Artichokes and Capers, Pomegranate Brown Butter.

**Chicken Breast;** Parmesan Whipped Polenta, Swiss Chard. Chicken Jus.

**Vegetarian**

Desert:

Strawberry Shortcake with Fresh Whipped Cream

Fresh Rolls and Sweet Butter

Regular and Decaffeinated Coffee and Herbal Tea

CRCEA 2017 Fall Conference  
October 23-25, 2017  
Hilton Garden Inn,  
San Francisco/Oakland Bay Bridge

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Sunday, October 22, 2017

2:00 p.m. – 6:00 p.m. Conference Registration

Monday, October 23, 2017

9:00 a.m. – 5:00 p.m. Conference Registration

1:00 p.m. – 1:30 p.m. Opening Session (Dock of the Bay)  
Call to Order: E. F. (Skip) Murphy, CRCEA President  
Invocation:  
Presentation of Colors:  
Pledge of Allegiance:  
National Anthem:  
Roll Call of Counties and Seating of Delegates:  
Mike Sloan, CRCEA Vice President  
Introduction of First-Time Attendees:  
Announcements: Jerry Jacobs, REAC Conference Chair

1:30 p.m. – 2:00 p.m. Welcome Address:  
Speaker: Supervisor Keith Carson, Alameda County  
Board of Supervisors, District 5  
Introduction: Liz Koppenhaver, ACERA Board Member elected  
to seat # 8 by the Retired Members

2:00 p.m. – 3:00 p.m. Key Note Speaker:  
Rosa “Rosie” Gumataotao Rios, 23<sup>rd</sup> Treasure of the United States  
Introduction: Keith Carson

3:00 p.m. – 3:15 p.m. Afternoon Break:

3:15 p.m. – 4:15 p.m. Presentation: Ashley K Dunning, Partner Nossaman LLP  
Pending CA Litigation re Retiree Benefits  
Introduction: Liz Koppenhaver

4:15 p.m. – 5:00 p.m. Presentation: Rashida Washington, Alameda County  
The Millennials  
Introduction: Liz Koppenhaver

5:30 p.m. – 7:00 p.m. Hospitality Reception (Location to be Announced)  
All Attendees and Affiliate Members are invited to attend.

7:00 p.m. Dinner: On Your Own

## Tuesday, October 24, 2017

- 6:30 a.m. – 8:30 a.m. Complimentary Breakfast for Hotel Guests  
at the Hotel Dining Room
- 8:00 a.m. – 2:00 p.m. Registration
- 8:30 a.m. – 8:45 a.m. Morning General Session: (Dock of the Bay)  
Call to order: E.F. (Skip) Murphy, CRCEA President  
Announcements: Jerry Jacobs
- 8:45 a.m. – 9:00 a.m. Presentation: Wendy Hausotter, Kaiser Permanente  
Retiree Wellness  
Introduction: Liz Koppenhaver
- 9:45 a.m. – 10:30 a.m. Presentation: Peter McNamara, Keenan & Associates  
Affordable Care Act – Repeal and Replace  
Introduction: Liz Koppenhaver
- 10:30 a.m. – 11:00 a.m. Morning Break
- 11:00 a.m. – 11:45 a.m. Introduction of Affiliates
- 11:45 a.m. – 1:30 p.m. Lunch on Your Own
- 1:30 a.m. – 2:45 p.m. Legislative: Art Goulet, Chair CRCEA Legislative Committee  
Discussion on Current Legislative activity relating to  
Retirement Issues.
- 2:45 p.m. – 3:45 p.m. Alameda County Sheriff's Office: Emergency Services and Mutual  
Aid in Alameda County, and in California's Region II.  
California's Standardized Emergency Management System  
Drone's and the beneficial use by the Sheriff's Department.  
Introduction: Jerry Jacobs
- 3:45 p.m. – 4:00 p.m. Afternoon Break
- 4:00 p.m. – 4:30 p.m. Round Table Session
- 4:30 p.m. – 5:00 p.m. Breakout Session: Meeting of CRCEA Standing Committees.
- 5:30 p.m. – 7:00 p.m. Hospitality Reception (Location to be Announced)
- All Attendees and Affiliate Members are invited to attend.
- 7:00 p.m. – 9:30 p.m. Conference Banquet: Top of the Bay (14<sup>th</sup> Floor)  
Master of Ceremonies:  
Music and Dancing:  
Door Prize Drawing:



## Wednesday, October 25, 2017

6:30 a.m. – 8:00 a.m. Complimentary Breakfast for Hotel Guests  
at the Hotel Dining Room

8:00 a.m. –

Business Session:

Call of Order: (Skip) Murphy, CRCEA President

Announcements:

Roll Call of Delegates: Virginia Adams, CRCEA Secretary

Approval of 2017 Spring Conference Minutes: President

Executive Committee Report: President

Financial Report: Carlos Gonzalez, CRCEA Treasurer

Committee Reports: CRCEA Standing Committee Chairs

Nominating: Will Hoag, Ventura

Affiliate: Bill de la Garza, Los Angeles

Benefits: John Michaelson, San Bernardino

Bylaws: David Muir, Los Angeles

Communications/Intercom: Virginia Adams, San Bernardino

Audit/Finance: Jerry Jacobs, Alameda

Legislation: Art Goulet, Ventura

Membership: Rhonda Biesemeier, Stanislaus

Retirement Security: Co Chairs – Mike Debord, Sacramento  
and George Shoemaker, San Diego

CalPERS Long Term Care Premium Increase

Ad hoc Committee: David Muir, Los Angeles

Conference: Mike Sloan, Contra Costa

Roundtable discussion continued if necessary.

**Invitation to the 2018 Spring Conference:**

**Retired Employees of Santa Barbara County (RESBC)**

**Host Chair: Mark Brickley**

Unfinished Business

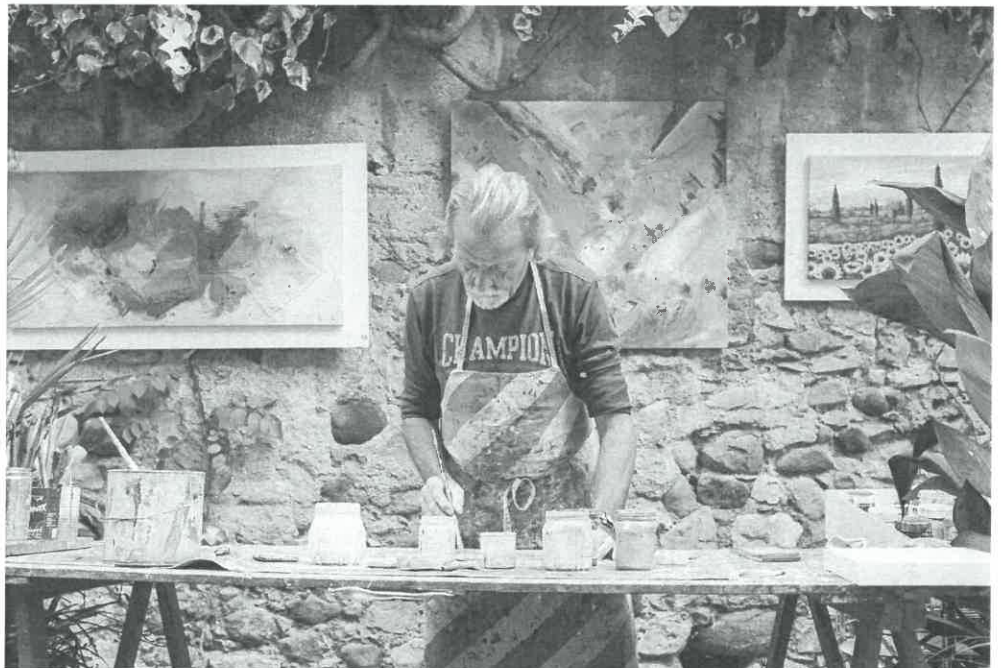
New Business

Good of the Order

Adjourn

October 26, 2017

*Meeting Date*  
**09/13/17**  
*Agenda Item*  
**#9d.**



**THE PUBLIC RETIREMENT JOURNAL**  
The inside stories on retirement in California

31<sup>st</sup> Annual Northern CA Public Retirement Seminar

# KEYNOTE SPEAKER



**Amy Costa**

Chief Deputy Director of  
California Department of  
Finance

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Amy Costa serves as Chief Deputy Director of the Department of Finance for Governor Jerry Brown. In this capacity, Ms. Costa advises the Governor on the state budget and serves as the department's lead contact with the state Legislature. From December 2014 to February 2016, she served as Advisor to the Director of Finance on Higher Education.

She was an account lead at Blue Beyond Consulting from 2012 to 2014, Director of State and Local Government Relations at Safeway Inc. from 2010 to 2012 and Associate Director of Advocacy and State Relations at the California State University Chancellor's Office from 2009 to 2010. She served as Policy Director in the Office of California State Senator Dean Florez from 2008 to 2009, a policy consultant in the Office of California State Senate President pro Tempore Don Perata from 2005 to 2008 and District Director in the Office of California State Senator Don Perata from 2001 to 2005.

## Seminar Details

October 26, 2017  
9am-4pm (check in at 8am)  
\$200 Registration fee  
includes breakfast, lunch  
& seminar materials

Register online:

[publicretirementjournal.org](http://publicretirementjournal.org)

Cancellation policy: Full refund if notified by 5pm on October 19

**Location:**  
**CalPERS Auditorium**  
**400 Q Street**  
**Sacramento, 95814**





## SEMINAR TOPICS

### **Defined Benefits are Under Attack**

We will hear from experts about the recent appellate court decisions on cases that question the viability of the California rule, and updates on a Supreme Court ruling.

### **CalPERS - Rate Increases on the Horizon**

We'll explore why CalPERS actuaries believe the pension fund needs to be taking less risk, and we'll take a look at why, when, and how contribution rate will increase over the next five to ten years, and beyond.

### **Legislators at Work**

The pension gurus of the Legislature will be on hand to discuss the current legislative session - the current political climate, issues of importance, and an overview of the bills that will become law in January 2018.

### **Actuarial Realities of Pension Benefits**

Despite politics and legislation, there's still the reality of funding promised benefits. We'll hear from a top pension actuary about the impacts of increased rates and issues on the horizon.

### **Labor's Perspective on Retirement**

We'll hear from labor representatives about their take on current events, including state and local attempts to eliminate defined benefits.

### **Management and Labor**

Attorneys from both labor and management will discuss the implications of the recent Marin County ruling on benefit vesting, concessions at the bargaining table, as well as increases in rates and how that will play into decisions made at the state and local level.

### **Our New Normal**

After the November 2016 election, what do we expect to see for California public employers, employees and retirees? What can we expect as we approach the November 2018 election?

### **How are Locals Adjusting to Increased Pension Obligations?**

We will hear from local experts on how they are budgeting for increased contribution rates. We will also receive an update on public agency defaults on their pension payments.

**The Public Retirement Journal**

1121 L Street, Ste. 408  
Sacramento, CA 95814

Phone: 916-341-0848

Fax: 916-341-0849



**DELIVER TO:**

**PUBLIC RETIREMENT JOURNAL SEMINAR 2017**

Organization Name: \_\_\_\_\_

Attendee Name(s): \_\_\_\_\_

Street Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Payment Method (circle one)

Check

Credit Card

Card Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_ 3 digit CVV: \_\_\_\_\_



Meeting Date  
**09/13/17**  
Agenda Item  
**#9e.**

2017

## Investor Dinner & Conference

October 24-25 | NYC

You are cordially invited to attend the **2017 StepStone Investor Dinner & Conference** on October 24 – 25 in New York City.

This year's general sessions will focus on the theme: **Private Markets Risks and Opportunities in an Era of Disruption.**

Featured morning topics will range from navigating overcrowded markets to opportunities we foresee across asset classes based on the impact of pervasive technologies and evolving demographics.

The afternoon program will include discussions on global insights, investment tools and in-depth portfolio reviews for investors.

Please RSVP using the buttons below.

YES

NO

We look forward to seeing you at the event. If you have any questions, please contact us at [ir@stepstoneglobal.com](mailto:ir@stepstoneglobal.com).

Sincerely,

StepStone Group

### Dates and Locations

#### Investor Dinner

Tuesday, October 24, 2017  
Porter House at Time Warner Center  
10 Columbus Circle, 4<sup>th</sup> Floor  
New York, NY 10019  
6:00 pm Cocktails Followed by Dinner

#### Investor Conference

Wednesday, October 25, 2017  
10 on the Park at Time Warner Center  
60 Columbus Circle, 10<sup>th</sup> Floor  
New York, NY 10019  
8:00 am - 5:30 pm Followed by Cocktail Reception

## Preliminary Agenda

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8:00 am - 12:00 pm

### **MORNING SESSIONS**

**Global Insights on Primaries, Secondaries & Co-Investments  
Across All Private Markets Asset Classes:**

- Private Equity
  - Private Debt
  - Real Estate
  - Infrastructure & Real Assets
- 

12:00 pm - 1:30 pm

### **NETWORKING LUNCHEON**

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1:30 pm - 3:30 pm

### **AFTERNOON SESSIONS**

- Strategic Asset Allocation
  - ESG & Impact Investing
  - Global Market Outlooks
- 

3:30 pm - 5:30 pm

### **BREAKOUT SESSIONS**

- Portfolio Reviews
  - Private Markets Sector Strategies Discussions
  - Research Investment Tools & Best Practices
- 

5:30 pm - 6:30 pm

### **COCKTAIL RECEPTION**

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*Please note this invitation is non-transferable.*

[www.stepstoneglobal.com](http://www.stepstoneglobal.com)

NOV  
15/16  
20  
17

## FALL ADVISORY COMMITTEE MEETING & ANNUAL PARTNERS MEETING

St. Julien Hotel  
900 Walnut Street  
Boulder, CO

### AGENDA

WEDNESDAY  
NOVEMBER 15

3:00p Advisory Committee Meeting  
7:00p Dinner (Oak at Fourteenth)

THURSDAY  
NOVEMBER 16

8:00a Breakfast  
9:00a Fidelity Real Estate Growth Fund III  
9:30a Long Wharf Real Estate Partners IV  
11:00a Long Wharf Real Estate Partners V  
12:30p Lunch  
2:30p Property Tour (333 Centennial)



**LONG WHARF**  
CAPITAL

For additional information,  
please contact Jane Walsh at:  
[jane.walsh@longwharf.com](mailto:jane.walsh@longwharf.com), 617.250.7262



Meeting Date  
**09/13/17**  
Agenda Item  
**#9f.**

# THE CARPENTER COMMUNITY BANCFUND

SAVE THE DATE  
ANNUAL LIMITED PARTNERS MEETING

*Thursday, October 26, 2017*  
*New York City*

*Agenda and Venue Details to Follow*