**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**BOARD OF RETIREMENT**
**2223 E. WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CALIFORNIA**

**REGULAR MEETING**
**Monday, August 21, 2017**
**9:00 a.m.**

# AGENDA

**The Orange County Board of Retirement welcomes you to this meeting. This agenda contains a brief general description of each item to be considered. The Board of Retirement may take action on any item included in the following agenda; however, except as otherwise provided by law, no action shall be taken on any item not appearing on the agenda.**

**The Board of Retirement encourages your participation. The public, plan members, beneficiaries, and/or representatives may speak to any subject matter contained in the agenda at the time the item is addressed. Persons wishing to address items on the agenda should provide written notice to the Secretary of the Board prior to the Board's discussion on the item by filling out the Public Comment Form located in the back of the room. Members of the public may also comment during the Public Comment period at the end of Open Session. When addressing the Board, please state your name for the record prior to providing your comments. Speakers will be limited to three (3) minutes.**

**Pledge of Allegiance**

## CONSENT AGENDA

All matters on the Consent Agenda are to be approved by one action unless a Board Member or a member of the public requests separate action on a specific item.

## BENEFITS

### C-1 MATERIAL DISTRIBUTED

| | |
|---|---|
| Application Notices | August 21, 2017 |
| Death Notices | August 21, 2017 |

**Recommendation**: Receive and file.

### C-2 OPTION 4 RETIREMENT ELECTION – TIMOTHY DAY

**Recommendation:** Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

## C-3 OPTION 4 RETIREMENT ELECTION – KATHLEEN MORAN

**Recommendation:** Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

## C-4 OPTION 4 RETIREMENT ELECTION – KIRBY ROUCHER

**Recommendation:** Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

# ADMINISTRATION

## C-5 BOARD MEETINGS AND COMMITTEE MEETINGS

| | |
|---|---|
| Audit Committee Meeting Minutes | July 6, 2017 |
| Regular Board Meeting Minutes | July 17, 2017 |

**Recommendation**: Authorize meeting and approve minutes.

## C-6 CEO FUTURE AGENDAS AND 2017 OCERS BOARD WORK PLAN

**Recommendation**: Receive and file.

## C-7 QUIET PERIOD – NON-INVESTMENT CONTRACTS

**Recommendation:** Receive and file.

## C-8 LEGISLATIVE UPDATE

**Recommendation:** Receive and file.

## C-9 OCERS BY THE NUMBERS (2017 EDITION)

**Recommendation**: Receive and file.

## C-10 EVOLUTION OF THE UAAL (2017 EDITION)

**Recommendation:** Receive and file.

## C-11 BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN UPDATE

**Recommendation:** Receive and file.

## C-12 SECOND QUARTER UNAUDITED FINANCIAL STATEMENTS FOR SIX MONTHS ENDED JUNE 30, 2017

**Recommendation:** Receive and file.

## C-13 SECOND QUARTER 2017 BUDGET TO ACTUALS REPORT

**Recommendation:** Receive and file.

## C-14 2017 BUDGET AMENDMENT TO EXCLUDE INVESTMENT MANAGEMENT FEES FROM THE OCERS' ANNUAL ADMINISTRATIVE BUDGET

**Recommendation:** Approve an amendment to OCERS' Administrative and Investment Budget for 2017 to exclude investment management fees originally budgeted in the amount of $38,323,996, decreasing the 2017 investment budget from $42,791,649 to $4,467,653 and the overall budget from $61,155,100 to $22,831,104.

## C-15 QUARTERLY UPDATE ON SECURITIES LITIGATION CASES

**Recommendation:** Receive and file.

## C-16 SITE VISIT REPORT – CONTRA COSTA COUNTY AND STANISLAUS COUNTY

**Recommendation:** Receive and file.

## C-17 2017 EMPLOYER AND EMPLOYEE PENSION COST COMPARISON

**Recommendation**: Receive and file.

## C-18 AUDIT COMMITTEE OUTCOMES FROM JULY 6, 2017 MEETING

**Recommendation:**
The Audit Committee recommends that the Board of Retirement approves:
(1) Receive and file the Hotline Update
(2) Receive and file the Audit Committee Inquiry on Administrative time in Internal Audit
(3) Receive and file the Status of Internal Audits and Audit Projects

## C-19 BOARD COMMUNICATIONS

**Recommendation:** Receive and file.

## C-20 CRI - THE CONFERENCE ON SUSTAINABLE, RESPONSIBLE, IMPACT INVESTING

**Recommendation:** Approve Russell Baldwin's attendance and related expenses including overnight accommodations for the "CRI - The Conference on Sustainable, Responsible, Impact Investing" on November 1-3, 2017 at the Hotel Del Coronado, San Diego, CA.

*** * * * * * END OF CONSENT AGENDA * * * * * * ***

## INDIVIDUAL ITEMS AGENDA

## I-1 INDIVIDUAL ACTION ON ANY ITEM TRAILED FROM THE CONSENT AGENDA

## I-2 INITIAL DISCUSSION OF TRIENNIAL STUDY OF ACTUARIAL ASSUMPTIONS

*Presentation by Paul Angelo, Segal Consulting*

**Recommendation:** Receive and file.

## I-3 EARLY PAYMENT OF EMPLOYER CONTRIBUTIONS PROGRAM - 2018

*Presentation by Brenda Shott, Assistant Chief Executive Officer Finance and Internal Operations and Molly Murphy, Chief Investment Officer*

**Recommendation:** Approve the terms of a prepayment discount program for the advance payment of employer contributions, including the discount rate to be used, for contribution year July 2018 - June 2019.

## I-4 EXECUTIVE SECRETARY I POSITION - LEGAL DEPARTMENT

*Presentation by Brenda Shott, Assistant Chief Executive Officer Finance and Internal Operations*

**Recommendation:**
1) Approve the addition of an Executive Secretary I position assigned to the Legal Department.
2) Delete the current vacant Secretary II position.

## I-5 MEMBER SERVICES ANNUAL REPORT

*Presentation by Catherine Fairley, Director of Member Services, OCERS*

**Recommendation:** Receive and file.

**I-6 OCERS VISION AND VALUES**

*Presentation by Steve Delaney, Chief Executive Officer, OCERS*

**Recommendation:** Adopt an OCERS' Vision and Values statement.

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## DISABILITY APPLICATIONS/MEMBER APPEALS AGENDA

**11:00 A.M.**

**NOTE: WHEN CONSIDERING DISABILITY RETIREMENT APPLICATIONS OR MEMBER APPEALS OF BENEFIT OR DISABILITY RETIREMENT DETERMINATIONS, THE BOARD MAY ADJOURN TO CLOSED SESSION TO DISCUSS MATTERS RELATING TO THE MEMBER'S APPLICATION OR APPEAL, PURSUANT TO GOVERNMENT CODE SECTIONS 54957 OR 54956.9. IF THE MATTER IS A DISABILITY APPLICATION UNDER SECTION 54957, THE MEMBER MAY REQUEST THAT THE DISCUSSION BE IN PUBLIC.**

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## CONSENT AGENDA

All matters on the Disability Applications or Member Appeals Consent Agenda are to be approved by one action unless a Board Member or a member of the public requests separate action on a specific item.

**D-1: Robert James**

Fire Apparatus Engineer, Orange County Fire Authority

Date of employer filed application for service and non-service connected disability retirement: 06/03/2016

**Recommendation**: **Deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. (Safety Member)**

**D-2: Aaron Phelps**

Group Counselor I, Orange County Social Services Agency

Date of employer filed application for service and non-service connected disability retirement: 03/17/2016

**<u>Recommendation</u>: Deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. (General Member)**

**D-3: Michael Sarno**
Deputy Sheriff II, Orange County Sheriff's Department
Date of employer filed application for service and non-service connected disability retirement: 03/14/2017

**<u>Recommendation</u>: Deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. (Safety Member)**

**D-4: Benjamin Savill**
Defense Investigator III, Orange County Public Defender
Date of employer filed application for service and non-service connected disability retirement: 01/31/2017

**<u>Recommendation</u>: Deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. (General Member)**

## <u>INDIVIDUAL ITEMS AGENDA</u>

**D-5: INDIVIDUAL ACTION ON ANY ITEM TRAILED FROM THE CONSENT AGENDA**

**D-6: Margretta Burton**
Coach Operator, Orange County Transportation Authority
Date of employer filed application for service and non-service connected disability retirement: 04/08/2016
Date of employee filed application for service and non-service connected disability retirement: 06/02/2016

**<u>Recommendation:</u> Grant service connected disability retirement with an effective date of April 8, 2016. (General Member)**

**D-7: Daniel Edralin**
Deputy Sheriff II, Orange County Sheriff's Department
Date of employee filed application for service connected disability retirement: 07/08/2016

**<u>Recommendation:</u> Grant service connected disability retirement with an effective date of the last day of compensation. (Safety Member)**

**D-8: Michael Gledhill**
Firefighter, Orange County Fire Authority
Date of employer filed application for service and non-service* connected disability retirement: 11/02/2015

Date of employee filed application for service connected disability retirement: 02/08/2016

**Recommendation: Grant service connected disability retirement with an effective date of November 2, 2015. (Safety Member)**

**D-9: Corinne Mahlen**
Attorney's Clerk II, Orange County Public Defender
Date of employee filed application for service and non-service connected disability retirement: 01/11/2016

**Recommendation: Grant service connected disability retirement with an effective date of January 11, 2016. (General Member)**

**D-10: Enrique Marquez**
Custodian, Orange County Superior Court
Date of employee filed application for service and non-service connected disability retirement: 07/11/2016

**Recommendation: Grant service connected disability retirement with an effective date of February 6, 2015. (General Member)**

**D-11: Karen Nelson**
Deputy Juvenile Correctional Officer II, Orange County Probation Department
Date of employee filed application for service connected disability retirement: 12/29/2016

**Recommendation: Grant service connected disability retirement with an effective date of March 3, 2017. (Safety Member)**

**D-12: Elena P. Preciado Navarro**
Custodian II, Orange County Superior Court
Date of employee filed application for service and non-service connected disability retirement: 09/01/2015

**Recommendation: Grant service connected disability retirement with an effective date of September 1, 2015. (General Member)**

**D-13: Ernesto Romero**
Park Maintenance Worker, Orange County Community Resources
Date of employee filed application for service connected disability retirement: 10/29/2015

**Recommendation: Grant service connected disability retirement with an effective date of October 29, 2015. (General Member)**

**D-14: Dan Sjule**
Senior Social Worker, Orange County Social Services Agency
Date of employee filed application for service connected (recommendation has both) disability retirement: 04/28/2016

**<u>Recommendation:</u> Grant non- service connected disability retirement with an effective date of April 28, 2016 and deny service connected disability retirement due to insufficient evidence of job causation. (General Member)**

**D-15: Joseph Steelman**
Fire Captain, Orange County Fire Authority
Date of employee filed application for service connected disability retirement: 12/18/2015

**<u>Recommendation:</u> Grant service connected disability with an effective date of December 18, 2015. (Safety Member)**

**D-16: Courtney Ward**
Deputy Sheriff II, Orange County Sheriff's Department
Date of employee filed application for service and non-service connected disability retirement: 11/07/2016

**<u>Recommendation:</u> Grant service connected disability retirement pursuant to Government Code Section 31720.6 (Cancer Presumption) with an effective date of November 7, 2016. (Safety Member)**

**D-17: Jeffrey Bardzik**
Lieutenant, Orange County Sheriff's Department
Date of employee filed application for service connected disability retirement: 07/06/2015

**<u>Recommendation:</u> Deny service and non-service connected disability retirement due to insufficient evidence of permanent incapacity and deny the application as it was not filed timely pursuant to Government Code Section 31722. (Safety Member)**

**D-18: Elizabeth Freyre**
Sheriff Correctional Services Assistant, Orange County Sheriff's Department
Date of employer filed application for service and non-service* connected disability retirement: 04/02/2014
Date of employee filed application for service connected disability retirement: 06/30/2014

**<u>Recommendation:</u> Deny service and non-service connected disability retirement due to insufficient evidence of permanent incapacity. (General Member)**

**D-19: Teresa Geldmacher**
Senior Social Worker, Orange County Social Service Agency
Date of employee filed application for service connected disability retirement: 11/03/2015

**<u>Recommendation:</u> Deny service connected disability retirement due to insufficient evidence of permanent incapacity. (General Member)**

**D-20: Josefina Zamacona**
Library Clerk, Orange County Community Resources
Date of employer filed application for non-service* connected disability retirement: 12/21/2015.
Date of employee filed application for service connected disability retirement: 03/22/2016

*The member does not have the minimum years of service required to be considered for a non-service connected disability.

<u>Recommendation:</u> **Deny service connected disability retirement due to insufficient evidence of permanent incapacity. (General Member)**

**D-21: Olivia Garcia**
Records Technician, Orange County Sheriff's Department
Date of employee filed application for service and non-service connected disability retirement: 12/05/2012

**Recommendation: Adopt the findings and recommendations of the Hearing Officer and deny Applicant's application for service and non-service connected disability retirement. (General Member)**

**D-22: Rick Edgmon**

<u>Recommendation:</u> **Affirm staff's determination that Mr. Edgmon should be required to repay the total amount of the benefits overpaid to him since he retired on November 11, 2005 in the approximate amount of $237,107.79. Staff also recommends that OCERS forgo the collection of interest on the overpayment, and that Mr. Edgmon be given 20 years to repay the overpayment through monthly deductions to his retirement allowance.**

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**PUBLIC COMMENTS:** At this time members of the public may address the Board of Retirement regarding any items within the subject matter jurisdiction of the Board, provided that no action may be taken on non-agendized items unless authorized by law.

**BOARD MEMBER COMMENTS**

**CHIEF EXECUTIVE OFFICER/STAFF COMMENTS**

**COUNSEL COMMENTS**

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**<u>CLOSED SESSION ITEMS</u>**

**E-1 CONFERENCE REGARDING LITIGATION THAT HAS BEEN INITIATED (GOVERNMENT CODE SECTION 54956.9(d)(1)) O.C. Department of Education v. OCERS, CA Superior Court, Orange County, (Case No. 30-2016-00836897)**
Adjourn pursuant to Government Code Section 54956.9(d)(1).

**Recommendation:** Take appropriate action.

**E-2 CONFERENCE REGARDING SIGNIFICANT EXPOSURE TO LITIGATION (ONE MATTER) (GOVERNMENT CODE SECTION 54956.9)**
Adjourn pursuant to Government Code section 54956.9(d)(2)

**Recommendation:** Take appropriate action.

**ADJOURNMENT: (IN MEMORY OF THE ACTIVE MEMBERS, RETIRED MEMBERS, AND SURVIVING SPOUSES WHO PASSED AWAY THIS PAST MONTH)**

## NOTICE OF NEXT MEETINGS

**INVESTMENT COMMITTEE MEETING**
**August 23, 2017**
**9:00 A.M.**

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**2223 E. WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CA 92701**

**AUDIT COMMITTEE MEETING**
**August 30, 2017**
**1:00 P.M.**

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**2223 E. WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CA 92701**

**GOVERNANCE COMMITTEE MEETING**
**September 5, 2017**
**9:30 A.M.**

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**2223 E. WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CA 92701**

**INVESTMENT MANAGER MONITORING SUBCOMMITTEE MEETING**
**September 7, 2017**
**9:00 A.M.**

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**2223 E. WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CA 92701**

**2-DAY STRATEGIC PLANNING WORKSHOP**
**September 13-14, 2017**
**8:00 A.M.**

**DOUBLETREE CLUB BY HILTON-ORANGE COUNTY AIRPORT**
**7 HUTTON CENTRE DRIVE**
**SANTA ANA, CA 92707**

**REGULAR BOARD MEETING**
**October 16, 2017**
**9:00 A.M.**

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**2223 E. WELLINGTON AVENUE, SUITE 100**

*All supporting documentation is available for public review in the retirement office during regular business hours, 8:00 a.m. – 5:00 p.m., Monday through Thursday and 8:00 a.m. – 4:30 p.m. on Friday.*

It is OCERS' intention to comply with the Americans with Disabilities Act ("ADA") in all respects. If, as an attendee or participant at this meeting, you will need any special assistance beyond that normally provided, OCERS will attempt to accommodate your needs in a reasonable manner. Please contact OCERS via email at adminsupport@ocers.org or call 714-558-6200 as soon as possible prior to the meeting to tell us about your needs and to determine if accommodation is feasible. We would appreciate at least 48 hours' notice, if possible. Please also advise us if you plan to attend meetings on a regular basis.

# C-1

# Orange County Employees Retirement System
# Retirement Board Meeting
# August 21, 2017
# Application Notices

| Member Name | Agency/Employer | Retirement Date |
|---|---|---|
| **Armijo, Debra** | County Counsel | 6/23/2017 |
| **Bailey, Lynne** | Social Services Agency | 6/23/2017 |
| **Beard, Ted** | District Attorney | 6/9/2017 |
| **Borg, Bret** | Fire Authority (OCFA) | 6/23/2017 |
| **Cervellone, Chris** | Sanitation District | 6/23/2017 |
| **Chavira, Mark** | Sheriff's Dept | 5/26/2017 |
| **Coltman, Rebekah** | Sheriff's Dept | 6/23/2017 |
| **Correa, Manuel** | Assessor | 6/9/2017 |
| **Daher, Bill** | Sheriff's Dept | 6/23/2017 |
| **Davidson, James** | Sanitation District | 6/9/2017 |
| **De La Torre, Beatrice** | SSA | 6/23/2017 |
| **Dove, Guy** | Sheriff's Dept | 12/31/2016 |
| **Dow-Rogoff, Linda** | Child Support Services | 6/9/2017 |
| **Ferrara, Glenn** | Sheriff's Dept | 5/26/2017 |
| **Garcia, Joe** | Child Support Services | 5/26/2017 |
| **Gomez, Marylou** | Social Services Agency | 6/9/2017 |
| **Goncalves, Maria** | Social Services Agency | 5/26/2017 |
| **Grante, Barbara** | Sheriff's Dept | 6/23/2017 |
| **Griffith, Jeff** | OC Waste and Recycling | 5/26/2017 |
| **Hall, Susan** | Health Care Agency | 6/23/2017 |
| **Hashemi, Adeleh** | Social Services Agency | 6/9/2017 |
| **Hoang, My-Linh** | Sheriff's Dept | 5/26/2017 |
| **Horibe, Michael** | County Executive Office (CEO) | 6/23/2017 |
| **Kane, John** | Health Care Agency | 6/23/2017 |
| **Kelley, Kimberly** | Sheriff's Dept | 6/9/2017 |
| **Lawrence, Mechelle** | City of San Juan Capistrano | 5/1/2017 |
| **Leonard, Richard** | Sheriff's Dept | 6/9/2017 |
| **Lopez, Linda** | Health Care Agency | 6/23/2017 |
| **Ludwick, Thomas** | Sheriff's Dept | 6/1/2017 |
| **Mansir, Ingrid** | Human Resources | 6/15/2017 |
| **Martin, Kathy** | Probation | 6/23/2017 |
| **Mata, Susan** | Sheriff's Dept | 6/23/2017 |
| **May, Suzanne** | OCTA | 6/2/2017 |
| **Mc Skane, Jeannette** | Superior Court | 6/23/2017 |
| **Meineke, Scott** | Social Services Agency | 4/19/2017 |
| **Molnar, Laurence** | Auditor-Controller | 5/31/2017 |
| **Moore, Robert** | Sheriff's Dept | 6/2/2017 |
| **Nasser, Sonia** | OC Public Works | 6/14/2017 |
| **Nissen, Brian** | Sheriff's Dept | 5/25/2017 |
| **Noceda, Jeannette** | Public Defender | 7/10/2017 |
| **North, Robert** | Superior Court | 6/24/2017 |
| **Novotny, Doreen** | Superior Court | 6/23/2017 |
| **Paschke, David** | Fire Authority (OCFA) | 6/10/2017 |
| **Ramsey, Marc** | Probation | 6/9/2017 |
| **Rice, Constance** | Health Care Agency | 6/16/2017 |
| **Riley, Joyce** | County Counsel | 6/23/2017 |
| **Rogoff, David** | OC Public Works | 6/9/2017 |
| **Ross, Lynda** | Social Services Agency | 6/9/2017 |
| **Saint, Algarin** | OCTA | 6/5/2017 |

| *Member Name* | *Agency/Employer* | *Retirement Date* |
|---|---|---|
| **Teeling, Melissa** | Social Services Agency | 6/6/2017 |
| **Trachy, Maribel** | Probation | 6/9/2017 |
| **Uribe, Mark** | OC Public Works | 3/31/2017 |
| **Vincent, Vickie** | OC Community Resources | 5/31/2017 |
| **Von Langen, Richard** | Assessor | 5/25/2017 |
| **Warner, Carla** | Health Care Agency | 6/5/2017 |
| **Wong, Emi** | OC Community Resources | 5/26/2017 |

# Orange County Employees Retirement
# Retirement Board Meeting
# August 21, 2017
# Death Notices

| Active Members | Agency/Employer | Date of Death |
|---|---|---|
| **Shankling, Jeremy** | District Attorney | 7/1/2017 |

| Retired Members | Agency/Employer | Date of Death |
|---|---|---|
| **Alfano, James** | Public Defender | 7/26/2017 |
| **Aria, Sue** | Social Services Agency | 7/11/2017 |
| **Barton, Shawn** | Assessor | 6/23/2017 |
| **Chaney, Donald** | Sheriff's Dept | 7/19/2017 |
| **Cordero, Oscar** | Social Services Agency | 6/18/2017 |
| **Dang, Qui** | Sheriff's Dept | 6/27/2017 |
| **Dietzel-Biehn, Dorothy** | Social Services Agency | 7/3/2017 |
| **Faerber, William** | OC Public Works | 6/30/2017 |
| **Flannigan, James** | OCTA | 5/12/2017 |
| **Guth, Paul** | UCI | 7/4/2017 |
| **Hayman, John** | Superior Court | 6/23/2017 |
| **Hitchens, Robert** | Fire Authority (OCFA) | 7/25/2017 |
| **Hoover, Gerald** | OC Public Works | 7/22/2017 |
| **Huffman, Ralph** | Sheriff's Dept | 7/25/2017 |
| **James, Phyllis** | UCI | 5/8/2017 |
| **Joyce, Patricia** | OCTA | 7/13/2017 |
| **Kharitonoff, Linda** | Social Services Agency | 5/30/2017 |
| **Leone, Victoria** | Assessor | 7/8/2017 |
| **Phillips, Norma** | County Clerk/Recorder | 7/17/2017 |
| **Ponce, Edmund** | Probation | 7/8/2017 |
| **Post-Minko, Linda** | Health Care Agency | 7/29/2017 |
| **Raat, Darlene** | Health Care Agency | 7/17/2017 |
| **Reeder-Haywood, Christine** | Superior Court | 7/1/2017 |
| **Resnick, Ruth** | Social Services Agency | 7/8/2017 |
| **Robertson, Marian** | Sheriff's Dept | 7/17/2017 |
| **Rohling, Zudy** | OCTA | 7/10/2017 |
| **Schiebeck, Arsenia** | OC Public Works | 7/22/2017 |
| **Stewart, Donna** | OCTA | 7/16/2017 |
| **Strahan, Dorothy** | Social Services Agency | 6/24/2017 |
| **Stucker, Carol** | Probation | 7/27/2017 |
| **Thomsic, Jonathan** | OC Public Works | 7/17/2017 |
| **Wehman, Craig** | OC Public Works | 7/4/2017 |
| **Wilkinson, Michael** | OC Public Works | 4/26/2017 |

| Surviving Spouses | | Date of Death |
|---|---|---|
| **Billings, Rosemary** | | 6/28/2017 |

# C-2

# Memorandum

**DATE**: August 8, 2017

**TO**: Members of the Board of Retirement

**FROM**: Suzanne Jenike, Assistant CEO, External Operations

**SUBJECT**: **OPTION 4 RETIREMENT ELECTION – TIMOTHY DAY**

## Recommendation

Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

## Background/Discussion

This member has requested Option 4 as the benefit payment option for his service retirement allowance effective May 2, 2015. The Orange County Employees Retirement System (OCERS) was joined in the member's dissolution of marriage and under the terms of the Domestic Relations Order (DRO), the member's ex-spouse was awarded a lifetime continuance as a percentage of the member's allowance.

The approval of Option 4 will not increase OCERS liability because the cost of this Option 4 benefit is proportional to the cost of the other benefit plans. Segal Consulting has calculated the member's monthly allowance as indicated in the attached letter as well as the allowance payable to the member's ex-spouse.

## Submitted by:

S. J. – APPROVED

Suzanne Jenike
Assistant CEO, External Operations

Segal Consulting

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PERSONAL AND CONFIDENTIAL

July 27, 2017

Ms. Adina Bercaru
Member Services Manager
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701-3101

**Re: Orange County Employees Retirement System**
**Option 4 Calculation for Timothy C. Day**

Dear Adina:

Pursuant to your request, we have determined the Option 4 benefits payable to Timothy C. Day, his ex-spouse and his son based on the unmodified benefit and other information provided in the System's request dated July 25, 2017.

The monthly benefits payable to the member and the ex-spouse and the data we used for our calculations are as follows:

| | |
|---|---|
| Member's Date of Birth | |
| Ex-Spouse's Date of Birth | |
| Date of Retirement | May 2, 2015* |
| Plan of Membership | Safety Plan F |
| Monthly Unmodified Benefit | $2,773.85 |
| Ex-Spouse's Share of Monthly Unmodified Benefit | 21.67% |
| Retirement Type | Service Retirement |
| Son's Date of Birth | |
| Continuance Payable to Son | 100% |

* *In preparing this calculation, we have assumed that the member has met the minimum 10 years of eligibility service requirement to retire.*

We have determined the Option 4 benefits using a two-part process. In Part One, we first calculated the adjustment to the member's unmodified benefit to provide a 21.67% continuance to the ex-spouse.

**Part One – Before Adjustment for Continuance to Member's Son**

| **The ex-spouse bears the cost of Option 4 reduction for the DRO benefit** | **Payable while the Member is Alive** | **Payable After the Member's Death** |
|---|---|---|
| Monthly Benefit Payable to Member | | |
| Annuity | $413.81 | |
| Pension | 1,758.95 | |
| Total | $2,172.76 | $0 |
| Monthly Benefit Payable to Ex-Spouse (or to the estate of the ex-spouse if the ex-spouse pre-deceases the member) | $543.03* | $543.03 |

* *This is equal to 21.67% of the member's unmodified benefit (i.e., 21.67% * $2,773.85 or $601.09) adjusted further to provide a benefit payable over the ex-spouse's lifetime.*

It is our understanding that pursuant to Regulation §1.401(a)(9)-6, the maximum percentage continuance benefit that can be provided to a non-spouse beneficiary may be limited if the difference in the member's age and the non-spouse beneficiary's age is greater than ten years. The actual calculation is as follows:

**Step 1:** Calculate the difference in age between the member and the beneficiary based on their ages on their birthdays during the calendar year of retirement (57-28=29).

**Step 2:** If the member is retiring before age 70, the age difference determined in Step 1 is reduced by the number of years that the member is retiring before age 70 (29-(70-57)=16).

**Step 3:** The maximum percentage continuance benefit can be found in the table provided in §1.401(a)(9)-6 which for an adjusted age difference of 16 years is 82%.

In Part Two, we further adjusted the member's benefit in Step One so that an 82% continuance benefit can be paid to his son. In addition, the cost to provide an 82% continuance benefit would be paid for entirely by the member.

**Part Two – After Adjustment for Continuance to Member's Son**

| | Payable while the Member is Alive | Payable After the Member's Death |
|---|---|---|
| Monthly Benefit Payable to Member | | |
| Annuity | $311.08 | |
| Pension | 1,322.29 | |
| Total | $1,633.37 | $0 |
| Monthly Benefit Payable to Member's Son | $0 | $1,339.36 |
| Monthly Benefit Payable to Ex-Spouse (or to the estate of the ex-spouse if the ex-spouse pre-deceases the member) | $543.03* | $543.03 |

* *This is equal to 21.67% of the member's unmodified benefit (i.e., 21.67% * $2,773.85 or $601.09) adjusted further to provide a benefit payable over the ex-spouse's lifetime.*

**ACTUARIAL ASSUMPTIONS**

Effective interest rate of 4.126214% per year, which is calculated using an investment return assumption of 7.25% per year together with a cost-of-living adjustment assumption of 3.00% per year.

RP-2000 Combined Healthy Mortality Table set back two years weighted 80% male and 20% female for members.

RP-2000 Combined Healthy Mortality Table set back three years weighted 20% male and 80% female for beneficiaries.

The actuarial calculations contained in this letter were performed under my supervision. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein.

Please let us know if you have any comments or questions. As in all matters pertaining to the interpretation and application of the law, Plan, or individual Option 4 Calculation provisions, you should be guided by the advice of the Plan's Legal Counsel.

Sincerely,

Molly Calcagno

Molly Calcagno, ASA, MAAA
Assistant Actuary

AW/gxk

5498556v1/05794.001

ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

August 7, 2017

Timothy C. Day

Re: Retirement Election Confirmation – Option 4

Dear Mr. DAY:

You have elected Option 4 as your retirement option. This option will provide a 21.6% of your monthly benefit, for the life of the benefit, to:

Janice Lee Day

This designation is irrevocable; you will not be allowed to change your retirement option or designated beneficiary.

Please complete this form and return to OCERS as soon as possible.

( ) I understand that my retirement option is irrevocable; by choosing Option 4 I will take a monthly reduction in order to provide a continuance to Janice Lee Day.

( ) I choose to add no other beneficiary(ies) under Option 4 and understand that, should I become married upon retirement, my current spouse will receive no continuance in the event I predecease him/her.

8/7/17

Member Signature/Date

Sincerely,

RECEIVED
AUG 07 2017
Orange County Employee Retirement System

Erika Gonzalez
Retirement Program Specialist

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM *2223 E. Wellington Avenue, Suite 100, Santa Ana, CA 92701*
*Telephone (714) 558-6200 Fax (714) 558-6234 www.ocers.org*

# C-3

# Memorandum

**DATE**: August 8, 2017

**TO**: Members of the Board of Retirement

**FROM**: Suzanne Jenike, Assistant CEO, External Operations

**SUBJECT**: **OPTION 4 RETIREMENT ELECTION – KATHLEEN MORAN**

## Recommendation

Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

## Background/Discussion

This member has requested Option 4 as the benefit payment option for her service retirement allowance effective July 14, 2017. The approval of Option 4 will not increase OCERS liability because the cost of this Option 4 benefit is proportional to the cost of the other benefit plans. Segal Consulting has calculated the member's monthly allowance as indicated in the attached letter as well as the allowance payable to the member's children upon her death.

## Submitted by:

S. J. – APPROVED

Suzanne Jenike
Assistant CEO, External Operations

Segal Consulting

100 Montgomery Street Suite 500 San Francisco, CA 94104-4308
T 415.263.8283 www.segalco.com

DIRECT DIAL NUMBER
415-263-8254

E-MAIL ADDRESS
mcalcagno@segalco.com

PERSONAL AND CONFIDENTIAL

July 27, 2017

Ms. Adina Bercaru
Member Services Manager
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701-3101

**Re: Orange County Employees Retirement System**
**Option 4 Calculation for Kathleen Moran**

Dear Adina:

Pursuant to your request, we have determined the Option 4 benefits payable to Kathleen Moran and her four child beneficiaries based on the unmodified benefit and other information provided in the System's request dated July 24, 2017.

The monthly benefits payable to the member and the data we used for our calculations are as follows:

| | |
|---|---|
| Member's Date of Birth | |
| Date of Retirement | July 14, 2017 |
| Plan of Membership | General Plan J |
| Monthly Unmodified Benefit | $1,394.68 |
| Type of Retirement | Service Retirement |
| 1st Child | Garrett Moran |
| 1st Child's Date of Birth | |
| 1st Child's Continuance Percentage | 25% |
| 2nd Child | Matthew Moran |
| 2nd Child's Date of Birth | |

| | |
|---|---|
| 2nd Child's Continuance Percentage | 25% |
| 3rd Child | Lindsey Moran Bettiga |
| 3rd Child's Date of Birth | |
| 3rd Child's Continuance Percentage | 25% |
| 4th Child | Kristin Moran Heineman |
| 4th Child's Date of Birth | |
| 4th Child's Continuance Percentage | 25% |

We have been requested to calculate an Option 4 benefit under two scenarios:

(1) Benefit without reversion between four beneficiaries - Provides 25% continuance to each of her four child beneficiaries after the death of the member and (2) Benefit with reversion between four beneficiaries - Provides 25% continuance to each of her four child beneficiaries after the death of the member; upon the death of the first child, 33 1/3% continuance paid to each of the three surviving children; upon the death of the second child, 50% continuance paid to each of the two surviving children; and upon the death of the third child, 100% continuance paid to the remaining surviving child.

It is our understanding that pursuant to Regulation §1.401(a)(9)-6, the maximum percentage continuance benefit that can be provided to a non-spouse beneficiary may be limited if the difference in the member's age and the non-spouse beneficiary's age is greater than ten years. Based on advice previously provided by OCERS on similar calculations, we have used the member's age and the youngest beneficiary's age in determining such age difference. This approach is similar to the one we have been asked to follow for a few of our other 1937 Act County Employees Retirement System clients. The actual calculation is as follows:

**Step 1:** Calculate the difference in age between the member and the youngest beneficiary based on their ages on their birthdays during the calendar year of retirement (70-36=34).

**Step 2:** If the member is retiring before age 70, the age difference determined in Step 1 is reduced by the number of years that the member is retiring before age 70 (34-(70-70)=34).

**Step 3:** The maximum percentage continuance benefit can be found in the table provided in §1.401(a)(9)-6 which for an adjusted age difference of 34 years is 57%.

We have reduced the total 100% continuance benefits payable to the four child beneficiaries originally requested by the member proportionally to comply with the no greater than 57% (or 14.25% to each child beneficiary) continuance benefits requirement.

**Scenario #1 - Option 4 Benefit WITHOUT Reversion between Beneficiaries**

| | Payable while the Member is Alive | Payable After the Member's Death to each Beneficiary |
|---|---|---|
| Monthly Benefit Payable to Member | | |
| Annuity | $663.51 | |
| Pension | 310.82 | |
| Total | $974.33 | $0 |
| Monthly Benefit Payable to each Beneficiary | $0 | $138.84 |

**Scenario #2 - Option 4 Benefit WITH Reversion between Beneficiaries**

| | Payable while the Member is Alive | Payable After the Member's Death |
|---|---|---|
| Monthly Benefit Payable to Member | | |
| Annuity | $622.23 | |
| Pension | 291.48 | |
| Total | $913.71 | $0 |
| Monthly Benefit Payable to each Beneficiary while all Beneficiaries are alive | $0 | $130.20 |
| Monthly Benefit Payable to each surviving Beneficiary after the death of first Beneficiary | $0 | $173.60 |
| Monthly Benefit Payable to each surviving Beneficiary after the death of second Beneficiary | $0 | $260.40 |
| Monthly Benefit Payable to the surviving Beneficiary after the death of third Beneficiary | $0 | $520.80 |

## ACTUARIAL ASSUMPTIONS

Effective interest rate of 4.126214% per year, which is calculated using an investment return assumption of 7.25% per year together with a cost-of-living adjustment assumption of 3.00% per year.

RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 40% male and 60% female for members.

RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 60% male and 40% female for beneficiaries.

Please let us know if you have any comments or questions. As in all matters pertaining to the interpretation and application of the law, Plan, or individual Option 4 Calculation provisions, you should be guided by the advice of the Plan's Legal Counsel.

Sincerely,

Molly Calcagno

Molly Calcagno, ASA, MAAA
Assistant Actuary

AW/gxk

5498610v1/05794.001

ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

*Serving the Active and Retired Members of:*

City of San Juan Capistrano

County of Orange

Orange County Cemetery District

Orange County Children & Families Commission

Orange County Department of Education (closed to new members)

Orange County Employees Retirement System

Orange County Fire Authority

Orange County In-Home Supportive Services Public Authority

Orange County Local Agency Formation Commission

Orange County Public Law Library

Orange County Sanitation District

Orange County Transportation Authority

Superior Court of California, County of Orange

Transportation Corridor Agencies

UCI Medical Center and Campus (closed to new members)

## OCERS Retirement Benefit Payment Option Election

**Please verify the information below, check the boxes, then sign and date.**

☒ I, KATHLEEN R. MORAN, understand that my retirement option is irrevocable. By selecting **Benefit Payment Option 4** upon retirement, I will take a monthly reduction in order to provide a continuance, upon my passing, to my children, Lindsey Moran Bettiga, Kristin Moran Heineman, Matthew Moran and Garrett Moran, and designate 25% to each.

☒ I choose to select the actuarial scenario #2 - Option 4 benefit with reversion between beneficiaries.

☒ I choose to add no other beneficiary(ies) under Option 4 and understand that, should I become married upon retirement, my current spouse will receive no continuance in the event I predecease him/her.

Kathleen R Moran
Member Signature

Aug 7, 2017
Date

RECEIVED
AUG 07 2017
Orange County Employees Retirement System

# C-4

# Memorandum

**DATE**: August 8, 2017

**TO**: Members of the Board of Retirement

**FROM**: Suzanne Jenike, Assistant CEO, External Operations

**SUBJECT**: **OPTION 4 RETIREMENT ELECTION – KIRBY ROUCHER**

## Recommendation

Grant election of retirement benefit payment, Option 4, based on Segal Consulting's actuarial report.

## Background/Discussion

This member has requested Option 4 as the benefit payment option for his service retirement allowance effective June 23, 2017. The Orange County Employees Retirement System (OCERS) was joined in the member's dissolution of marriage and under the terms of the Domestic Relations Order (DRO), the member's ex-spouse was awarded a lifetime continuance as a percentage of the member's allowance.

The approval of Option 4 will not increase OCERS liability because the cost of this Option 4 benefit is proportional to the cost of the other benefit plans. Segal Consulting has calculated the member's monthly allowance as indicated in the attached letter as well as the allowance payable to the member's ex-spouse.

## Submitted by:

S. J. – APPROVED

Suzanne Jenike
Assistant CEO, External Operations

Segal Consulting

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

**DIRECT DIAL NUMBER**
415-263-8254

**E-MAIL ADDRESS**
mcalcagno@segalco.com

**PERSONAL AND CONFIDENTIAL**

VIA EMAIL and USPS

July 27, 2017

Ms. Adina Bercaru
Member Services Manager
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701-3101

**Re: Orange County Employees Retirement System**
**Option 4 Calculation for Kirby Roucher**

Dear Adina:

Pursuant to your request, we have determined the Option 4 benefits payable to Kirby Roucher and his ex-spouse based on the unmodified benefit and other information provided in the System's request dated July 24, 2017.

The monthly benefits payable to the member and the ex-spouse and the data we used for our calculations are as follows:

| | |
|---|---|
| Member's Date of Birth | |
| Ex-Spouse's Date of Birth | |
| Date of Retirement | June 23, 2017 |
| Plan of Membership | Safety Plan F |
| Monthly Unmodified Benefit | $8,414.89 |
| Ex-Spouse's Share of Monthly Unmodified Benefit | 41.03% |
| Retirement Type | Service Retirement |

**Option 4 Benefit**

| **The ex-spouse bears the cost of Option 4 reduction for the DRO benefit** | **Payable while the Member is Alive** | **Payable After the Member's Death while the Ex-Spouse is Alive** |
|---|---|---|
| Monthly Benefit Payable to Member | | |
| Annuity | $986.15 | |
| Pension | 3,976.11 | |
| Total | $4,962.26 | $0 |
| Monthly Benefit Payable to Ex-Spouse (or to the estate of the ex-spouse if the ex-spouse pre-deceases the member) | $3,062.62* | $3,062.62 |

* *This is equal to 41.03% of the member's unmodified benefit (i.e., 41.03% * $8,414.89 or $3,452.63) adjusted further to provide a benefit payable over the ex-spouse's lifetime.*

**ACTUARIAL ASSUMPTIONS**

Effective interest rate of 4.126214% per year, which is calculated using an investment return assumption of 7.25% per year together with a cost-of-living adjustment assumption of 3.00% per year.

RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 set back two years weighted 80% male and 20% female for members.

RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted 20% male and 80% female for beneficiaries.

The actuarial calculations contained in this letter were performed under my supervision. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein.

Please let us know if you have any comments or questions. As in all matters pertaining to the interpretation and application of the law, Plan, or individual Option 4 Calculation provisions, you should be guided by the advice of the Plan's Legal Counsel.

Sincerely,

Molly Calcagno

Molly Calcagno, ASA, MAAA
Assistant Actuary

AW/hy

5498415v1/05794.001

ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

August 4, 2017

Kirby C. Roucher

Re: Retirement Election Confirmation – Option 4

Dear Mr. ROUCHER:

You have elected Option 4 as your retirement option. This option will provide 41.03% of your monthly benefit, for the life of the benefit, to:

MELANIE ROUCHER

This designation is irrevocable; you will not be allowed to change your retirement option or designated beneficiary.

Please complete this form and return to OCERS as soon as possible.

[K] I understand that my retirement option is irrevocable; by choosing Option 4, I will take a monthly reduction in order to provide a 41.03% continuance to Melanie Roucher.

8-7-17
Member Signature/Date

RECEIVED
AUG 07 2017
Orange County Employees Retirement System

Sincerely,

Shawna Treat
Retirement Program Specialist

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM *2223 E. Wellington Avenue, Suite 100, Santa Ana, CA 92701*
*Telephone (714) 558-6200 Fax (714) 558-6234 www.ocers.org*

# C-5

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**

**BOARD OF RETIREMENT**
**2223 WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CA 92701**

**AUDIT COMMITTEE MEETING**
**July 6, 2017**
**11:00 a.m.**

**MINUTES**

The Vice-Chair called the meeting to order at 11:05 a.m. and read the opening statement for the record. Attendance was as follows:

Present: Charles Packard, Chair; Frank Eley, Vice Chair; Eric Gilbert; Shari Freidenrich

Staff: Brenda Shott, Assistant CEO; Internal Operations; Gina Ratto, Chief Legal Officer; David James, Director of Internal Audit; Mark Adviento, Internal Auditor; Anthony Beltran, Audio/Visual Technician; Cammy Danciu, Recording Secretary

**A. HOTLINE UPDATE**
*Presentation by David James, Director of Internal Audit*

**Recommendation:** Receive and file.

Mr. James presented the Hotline Report to the Committee. He discussed three reports to the hotline since the last Audit Committee meeting. One of the anonymous reports was regarding the smoking area at OCERS.

*Mr. Packard arrived at 11:10 a.m.*

Ms. Freidenrich expressed her concern regarding money invested on the smoking bench and zoning codes.

Ms. Shott clarified that this solution was established to comply with the law in not allowing the public or employees to smoke within 100 feet from an entry way. Health concerns were taken into consideration.

Following discussion, a **motion** was made by Ms. Freidenrich, **seconded** by Mr. Eley to receive and file the *Hotline Report.*

The **motion passed unanimously.**

**B. AUDIT COMMITTEE INQUIRY ON ADMINISTRATIVE TIME IN INTERNAL AUDIT**
*Presentation by David James, Director of Internal Audit*

**Recommendation:** Receive and file.

Mr. James explained that at the March 29, 2017 Audit Committee meeting, the Committee inquired regarding the amount of time Internal Audit spent on administration versus internal audit functions. Internal Audit surveyed several systems and received responses. Most responses were based on estimates of time by the chief audit executives. Mr. James spoke about the survey tools Internal Audit uses when making inquiries.

Mr. Packard asked how time for administrative tasks was defined in the survey. Mr. James responded that to ensure a uniform understanding of the respondents, he discussed with them what specifically were their administrative tasks, and how they differentiated between audit projects, administrative tasks and other types of tasks.

Following discussion, a **motion** was made by Mr. Eley, **seconded** by Mr. Gilbert to receive and file the *Audit Committee Inquiry on Administrative time in Internal Audit*.

The **motion passed unanimously**.

**C. STATUS OF INTERNAL AUDITS AND AUDIT PROJECTS**
*Presentation by David James, Director of Internal Audit*

**Recommendation:** Receive and file.

Mr. James presented the status of Internal Audits and Audit Projects. He explained that due to actions by the Board and staff regarding Orange County Sherriff's Department POST mandatory training benefits, the planned payroll transmittal audit of this department will be delayed until 2018 and replaced with an audit of OCERS' staff and trustee expense reimbursements. Mr. Packard expressed a desire that the expense reimbursement audit report contain high level statistical information regarding expense reimbursements and he also provided feedback on sample selection for testing. Mr. James shared that the V3 data conversion audit report has been finalized. With the approval of the Audit Committee Chair, the report will be presented at the Audit Committee meeting in August. A draft report of the reciprocity claims audit will be given to management for their responses to the findings. Internal Audit will present this report at the next Audit Committee meeting in August. The annual Risk and Controls Matrices review of OCERS' key internal controls with management is in progress and will be presented at the Audit Committee meeting in August. Lastly, the Investments rebalancing review is in the planning stage. Mr. James added that a new category for small miscellaneous projects was added to the Audit Plan. This category will primarily be for newly assigned projects that are anticipated to use few hours.

Following discussion, a **motion** was made by Mr. Gilbert, **seconded** by Mr. Eley to receive and file the *Status of Internal Audits and Audit Projects*.

The **motion passed unanimously.**

*** * * * * * * END OF INDIVIDUAL ITEMS AGENDA * * * * * ***

**CLOSED SESSION ITEM**

The Committee moved to closed session at 11:46 a.m.

**D. THREAT TO PUBLIC SERVICES OR FACILITIES**
**(GOVERNMENT CODE SECTION 54957)**
*Consultation with Jon Gossard, OCERS Security Operations Manager, and Gina M. Ratto, OCERS Chief Legal Officer*

**Recommendation:** Receive and file.

The Committee reconvened at 12:10 p.m.

The Chair reported **no reportable action.**

Meeting adjourned at 12:18 p.m.

**PUBLIC COMMENTS:**
None

**COMMITTEE MEMBERS COMMENTS:**
None

**CHIEF EXECUTIVE OFFICER/STAFF COMMENTS:**

| **Submitted by:** | **Approved by:** |
|---|---|
| ___________________________ | ___________________________ |
| Steve Delaney | Charles Packard |
| Secretary to the Committee | Committee Chair |

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**
**BOARD OF RETIREMENT**
**2223 E. WELLINGTON AVENUE, SUITE 100**
**SANTA ANA, CALIFORNIA**

**REGULAR MEETING**
**Monday, July 17, 2017**
**9:00 a.m.**

# MINUTES

Chair Ball called the meeting to order at 9:00 a.m.

Attendance was as follows:

Present: David Ball, Chair; Chris Prevatt, Vice Chair; Eric Gilbert, Chuck Packard, Russell Baldwin, Shawn Dewane, Roger Hilton; Wayne Lindholm, and Shari Freidenrich

Also Present: Steve Delaney, Chief Executive Officer; Brenda Shott, Assistant CEO, Finance and Internal Operations; Suzanne Jenike, Assistant CEO, External Operations; Molly Murphy, Chief Investment Officer; Jenny Sadoski, Director of Information Technology; Gina Ratto, General Counsel; Lee Fink, Deputy General Counsel; Anthony Beltran, Visual Technician; Megan Cortez; Disability Coordinator; Cammy Danciu, Recording Secretary.

Guests: Harvey L. Leiderman, ReedSmith LLP, Paul Angelo, Segal Consulting

Absent: Frank Eley

*Mr. Hilton led the Pledge of Allegiance.*

## CONSENT AGENDA

All matters on the Consent Agenda are to be approved by one action unless a Board Member or a member of the public requests separate action on a specific item.

Mr. Delaney pulled item C-13 for discussion.

Following discussion, a **motion** was made by Mr. Hilton, **seconded** by Mr. Lindholm to move the remainder of the consent calendar.

The motion carried **unanimously**.

### BENEFITS

### C-1 MATERIAL DISTRIBUTED

| | |
|---|---|
| Application Notices | July 17, 2017 |
| Death Notices | July 17, 2017 |

**Recommendation**: Receive and file.

**C-2 OPTION 4 RETIREMENT ELECTION – JEFF GRIFFITH**

**Recommendation:** Grant election of retirement benefit payment, Option 4, based on Segal Consulting actuarial report.

## ADMINISTRATION

**C-3 BOARD MEETINGS AND COMMITTEE MEETINGS**

| | |
|---|---|
| Governance Committee Meeting Minutes | June 8, 2017 |
| Audit Committee Meeting Minutes | June 9, 2017 |
| Regular Board Meeting Minutes | June 12, 2017 |
| Audit Committee Meeting Minutes | June 12, 2017 |

**Recommendation**: Authorize meeting and approve minutes.

**C-4 CEO FUTURE AGENDAS AND 2017 OCERS BOARD WORK PLAN**

**Recommendation**: Receive and file.

**C-5 GOVERNANCE COMMITTEE OUTCOMES FROM JUNE 8, 2017 MEETING**

**Recommendation:**
The Governance Committee recommends that the Board of Retirement adopt:
(1) Budget Approval Policy, with revisions as approved by the Committee;
(2) Planning Policy, with revisions as approved by the Committee;
(3) Quiet Period Policy, with revisions as approved by the Committee; and
(4) Disability Retirement Policy, with non-substantive revisions as approved by the Committee.

**C-6 AUDIT COMMITTEE OUTCOMES FROM JUNE 9, 2017 MEETING**

**Recommendation:**
The Audit Committee recommends that the Board of Retirement approves:
(1) Receive and file the presentation of OCERS' Investment Fee Report
(2) Receive and file the review of OCERS' Investment Wire Transfer Process report
(3) Receive and file the presentation of New York State Retirement Fund's Scandal and OCERS' Policies

(4) Approve the selection of Cheiron as OCERS' Actuarial Auditor for the 2016 Actuarial Valuation

**C-7 QUIET PERIOD – NON-INVESTMENT CONTRACTS**

**Recommendation:** Receive and file.

**C-8 LEGISLATIVE UPDATE**

**Recommendation:** Receive and file.

**C-9 CEM GLOBAL PENSION ADMINISTRATION CONFERENCE**

**Recommendation:** Receive and file.

**C-10 TRAVEL REPORT – PUBLIC RISK MANAGEMENT ASSOCIATION (PRIMA) ANNUAL CONFERENCE**

**Recommendation:** Receive and file.

**C-11 SECOND QUARTER 2017 EDUCATION AND TRAVEL EXPENSE REPORT**

**Recommendation:** Receive and file.

**C-12 SEPTEMBER 2017 STRATEGIC PLANNING WORKSHOP INVESTMENT FORUM AGENDA**

**Recommendation:** Approve the agenda for September 13-14, 2017 Regular Meeting and Strategic Planning Workshop & Investment Forum.

**C-13 TCA EXCLUDED WORKERS - UPDATE**

**Recommendation:** Receive and file.

**C-14 BOARD COMMUNICATIONS**

**Recommendation:** Receive and file.

*** * * * * * END OF CONSENT AGENDA * * * * * * ***

**INDIVIDUAL ITEMS AGENDA**

**I-1 INDIVIDUAL ACTION ON ANY ITEM TRAILED FROM THE CONSENT AGENDA**

C-13 - TCA EXCLUDED WORKERS - UPDATE

Ms. Jenike commented on the successful resolution and final outcomes of TCA excluded workers. TCA entered into a contract with an agency that will handle the employment services and therefore individuals are no longer on the TCA payroll.

Following discussion, a **motion** was made by Mr. Hilton, **seconded** by Mr. Baldwin to receive and file item C-13.

The motion carried **unanimously**.

***Mr. Packard arrived at 9:08 a.m.***

**I-2 ILLUSTRATIONS OF RETIREMENT COSTS, UNFUNDED ACTUARIAL ACCRUED LIABILITY AND FUNDED RATIO UNDER ALTERNATIVE ECONOMIC SCENARIOS**

*Presentation by Paul Angelo, Segal Consulting*

**Recommendation:** Receive and file.

Mr. Angelo from Segal Consulting prepared the annual illustration of retirement costs, Unfunded Actuarial Accrued Liability and Funded Ratio under Alternative Economic Scenarios. The illustrations covered a 20-year period to reflect the current 20 year amortization period.

The three market rate of return scenarios are as follows:
Scenario #1: 0.00% for 2017 and 7.25% thereafter
Scenario #2: 7.25% for all years
Scenario #3: 14.50% for 2017 and 7.25% thereafter

Mr. Dewane asked what the reason is for doubling the rate of return from scenario two to scenario three.

Mr. Angelo stated that these illustrations are more for the purpose of numerical semantics. Segal uses the same scenarios every year to make the analysis neutral and easier for the reader to understand the explanations by using the no returns, the assumed rate and double the assumed rate as examples.

Mr. Prevatt asked what the lag time is from projections dates until rates come into effect.

Mr. Angelo stated that there's an 18 month lag from the December 31 date shown on all projections.

Following discussion, a **motion** was made by Mr. Dewane, **seconded** by Mr. Packard to receive and file the Illustrations of Retirement Costs, Unfunded Actuarial Accrued Liability and Funded Ratio Under Alternative Economic Scenarios.

The motion carried **unanimously**.

**I-3 SENSITIVITY ANALYSIS OF ALTERNATIVE ECONOMIC ASSUMPTIONS**
*Presentation by Paul Angelo, Segal Consulting*

**Recommendation:** Receive and file.

Mr. Angelo from Segal Consulting provided the sensitivity analyses of four alternative economic actuarial assumptions:

Alternative #1: 7.00% investment return assumption and 2.75% inflation assumption
Alternative #2: 7.00% investment return assumption and 3.00% inflation assumption
Alternative #3: 6.75% investment return assumption and 3.00% inflation assumption
Alternative #4: 7.25% investment return assumption and 3.25% inflation assumption

Mr. Ball asked Mr. Angelo to explain the dynamics of why the UAAL rate is so much higher than the normal cost rate.

Mr. Angelo stated that the rates vary due to the size of the unfunded liability.

Mr. Ball clarified that it is purely a function of the size of the UAAL in comparison to the overall payroll.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Packard to receive and file the Sensitivity Analysis of Alternative Economic Assumptions.

The motion carried **unanimously**.

**I-4 ARITHMETIC VS. GEOMETRIC METHODOLOGIES – INFORMATIONAL REVIEW**
*Presentation by Paul Angelo, Segal Consulting*

**Recommendation:** Receive and file.

Mr. Angelo presented a summary of the Arithmetic vs. Geometric Methodologies Informational Presentation.

Mr. Ball asked why some firms use Geometric vs. Arithmetic methodologies.

Mr. Angelo stated that fundamentally it has to do with how the actuary presents the items and comes up with their recommendations.

Following discussion, a **motion** was made by Mr. Dewane, **seconded** by Mr. Packard to receive and file the Sensitivity Analysis of Alternative Economic Assumptions.

The motion carried **unanimously**.

**I-5 FUTURE SERVICE ONLY CONTRIBUTION RATE CREDIT CORRECTION**
*Presentation by Brenda Shott, Assistant Chief Executive Officer, OCERS and Paul Angelo, Segal Consulting*

**Recommendation:** Approve revised employer contribution rates for employers eligible for the future service only rate credit for Fiscal Years 2015-2016, 2016-2017 and 2017-2018 and the related correction of employer contributions received.

Ms. Shott presented the Future Service Only Contribution Rate Credit Correction.

Mr. Ball asked if this is normal to have these types of discrepancies or if this is a one-time oversight because of the PEPRA implementation.

Mr. Angelo sated that he cannot guarantee that this type of correction will never occur again but it was an oversight with the PEPRA calculation.

Mr. Prevatt asked that given the scope of how we structure audits, would the audit have actually caught this error.

Ms. Shott stated that she can't say yes or no. It's not glaringly clearly that this situation would have been caught.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Packard to receive and file the Sensitivity Analysis of Alternative Economic Assumptions.

The motion carried **unanimously**.

**I-6 REVIEW OF FUNDING POLICY TIMING AND RELATIONSHIP TO EXPERIENCE STUDIES**
*Presentation by Paul Angelo, Segal Consulting*

**Recommendation:** Receive and file.

Mr. Angelo discussed the Funding Policy timing and relationship to experience studies.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Gilbert to receive and file the report.

The motion carried **unanimously**.

***The Board recessed for break: 10:12am***
***The Board reconvened from break: 10:20am***

***The Board adjourned into closed session at 10:20 a.m.***
***Mr. Lindholm recused himself from closed session at 10:39 a.m.***
***Mr. Lindholm reconvened into closed session 10:48 a.m.***
***The Board reconvened from closed session at 11:00 a.m.***

***The Board recessed for lunch at 11:03a.m.***
***The Board reconvened from lunch at 1:00p.m.***

*** * * * * * * END OF INDIVIDUAL ITEMS AGENDA * * * * * ***

## DISABILITY APPLICATIONS/MEMBER APPEALS AGENDA

**1:00 P.M.**

**NOTE: WHEN CONSIDERING DISABILITY RETIREMENT APPLICATIONS OR MEMBER APPEALS OF BENEFIT OR DISABILITY RETIREMENT DETERMINATIONS, THE BOARD MAY ADJOURN TO CLOSED SESSION TO DISCUSS MATTERS RELATING TO THE MEMBER'S APPLICATION OR APPEAL, PURSUANT TO GOVERNMENT CODE SECTIONS 54957 OR 54956.9. IF THE MATTER IS A DISABILITY APPLICATION UNDER SECTION 54957, THE MEMBER MAY REQUEST THAT THE DISCUSSION BE IN PUBLIC.**

****************

Megan Cortez, Disability Coordinator, presented D-1 to the Board along with the staff recommendation.

**D-1: Hominder Bharadwaj**
Coach Operator, Orange County Transportation Authority
Date of employee filed application for service connected disability retirement: 10/22/2014

**STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF OCTOBER 22, 2014. (GENERAL MEMBER) (D-1)**

Mr. Lindholm asked staff to clarify the conflict between the two doctors.

Ms. Cortez explained the different opinions between the two orthopedic doctors.

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Baldwin to grant service connected disability retirement with an effective date of October 22, 2014. The motion carried **5-2** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Hilton | Mr. Lindholm | | Mr. Gilbert |
| Mr. Baldwin | Ms. Freidenrich | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |

Megan Cortez, Disability Coordinator, presented D-2 to the Board along with the staff recommendation.

**D-2: Karen Cushing**
Coach Operator, Orange County Transportation Authority
Date of employee filed application for service connected disability retirement: 09/06/2016

**STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF SEPTEMBER 6, 2016. (GENERAL MEMBER) (D-2)**

Mr. Lindholm asked staff what happened on the 55 freeway on 10/21/15.

Ms. Cortez stated that the bus bottomed out and jolted Ms. Cushing out of her seat causing her spine injury.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Packard to grant service connected disability retirement with an effective date of September 6, 2016. The motion carried **7-1** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | Mr. Lindholm | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Ms. Freidenrich | | | |
| Mr. Gilbert | | | |

Megan Cortez, Disability Coordinator, presented D-3 to the Board along with the staff recommendation.

**D-3: Leticia Hernandez**
Eligibility Technician, Orange County Social Services Agency
Date of employee filed application for non-service connected disability retirement: 06/14/2016

**STAFF RECOMMENDATION IS TO GRANT NON-SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF JUNE 14, 2016. (GENERAL MEMBER) (D-3)**

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Packard to grant service connected disability retirement with an effective date of June 14, 2016. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Ms. Freidenrich | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |

Megan Cortez, Disability Coordinator, presented D-4 to the Board along with the staff recommendation.

**D-4: Craig Stone**
Fire Apparatus Engineer, Orange County Fire Authority
Date of employee filed application for service connected disability retirement: 04/14/2016

**STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF APRIL 14, 2016. (SAFETY MEMBER) (D-4)**

Mr. Lindholm asked staff if the doctor stated why this injury was work related.

Ms. Cortez stated that he lifted heavy water hoses which caused his retina to detach sooner than it would have otherwise.

Mr. Lindholm stated that he cannot see how moving hoses is related to eye problems.

Mr. Gilbert stated that depending on how many hoses he lifted, that can certainly cause eye problems.

Following discussion, a **motion** was made by Mr. Gilbert, **seconded** by Mr. Packard to grant service connected disability retirement with an effective date of April 14, 2016. The motion carried **7-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Ms. Freidenrich | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |

Megan Cortez, Disability Coordinator, presented D-5 to the Board along with the staff recommendation.

**D-5: Valerie Thomson**
Social Worker II, Orange County Social Services Agency
Date of employer filed application for service and non-service connected disability retirement: 04/29/2016

**STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF JULY 22, 2016. (GENERAL MEMBER) (D-5)**

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Gilbert to grant service connected disability retirement with an effective date of July 22, 2016. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Ms. Freidenrich | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |
| Mr. Hilton | | | |

Megan Cortez, Disability Coordinator, presented D-6 to the Board along with the staff recommendation.

**D-6: An Tu**
Coach Operator, Orange County Transportation Authority
Date of employee filed application for service connected disability retirement: 04/11/2016

**STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF APRIL 11, 2016. (GENERAL MEMBER) (D-6)**

Following discussion, a **motion** was made by Mr. Baldwin, **seconded** by Mr. Packard to grant service connected disability retirement with an effective date of April 11, 2016. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Ms. Freidenrich | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |
| Mr. Hilton | | | |

Megan Cortez, Disability Coordinator, presented D-7 to the Board along with the staff recommendation.

**D-7: Janice Denham**
Legal Processing Supervisor, Orange County Superior Court
Date of employee filed application for service and non-service connected disability retirement: 05/08/2015

Mr. Prevatt asked to summarize why OCERS wants to send this matter back to a hearing officer.

Ms. Cortez explained that there is conflicting evidence and the Hearing Officer can go deeper into the matter.

**STAFF RECOMMENDATION IS TO REFER THE MATTER TO A HEARING OFFICER TO GATHER ADDITIONAL EVIDENCE AND FOR FURTHER ANALYSIS OF THE RECORD REGARDING PERMANENT INCAPACITY AND JOB CAUSATION. (GENERAL MEMBER) (D-7)**

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Packard to refer the matter to a Hearing Officer to gather additional evidence and for further analysis of the record regarding permanent incapacity and job causation. The motion carried **7-1** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | Ms. Freidenrich | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |

Mr. Hilton
Mr. Gilbert
Mr. Lindholm

Megan Cortez, Disability Coordinator, presented D-8 to the Board along with the staff recommendation.

**D-8: Carole Barber**

Information Processing Technician, Orange County Sheriff's Department
Date of employer filed application for service and non-service connected disability retirement: 05/16/2016

Mr. Hilton asked to add the retirement without prejudice due to the member's failure to cooperate cases to the Consent Calendar.

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (GENERAL MEMBER) (D-8)**

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Gilbert to deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

Megan Cortez, Disability Coordinator, presented D-9 to the Board along with the staff recommendation.

**D-9: Donald Ferl**

Construction Inspector, Orange County Sanitation District
Date of employer filed application for service and non-service connected disability retirement: 12/12/2016

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (GENERAL MEMBER) (D-9)**

Following discussion, a **motion** was made by Mr. Hilton, **seconded** by Mr. Lindholm to deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |

| | | | |
|---|---|---|---|
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

Megan Cortez, Disability Coordinator, presented D-10 to the Board along with the staff recommendation.

**D-10: Edith Hartzler**
Office Technician, Orange County Social Services Agency
Date of employer filed application for service and non-service connected disability retirement: 04/11/2016

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (GENERAL MEMBER) (D-10)**

Following discussion, a **motion** was made by Mr. Lindholm, **seconded** by Mr. Baldwin to deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

**D-11: Roy Hendy**
Senior Mechanic, Orange County Sanitation District
Date of employee filed application for service connected disability retirement: 03/23/2016

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (GENERAL MEMBER) (D-11)**

Item D-11 was pulled at the request of the applicant.

Megan Cortez, Disability Coordinator, presented D-12 to the Board along with the staff recommendation.

**D-12: Michael Marroquin**
Deputy Sheriff II, Orange County Sheriff's Department

Date of employer filed application for service and non-service connected disability retirement: 04/01/2016

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (SAFETY MEMBER) (D-12)**

Following discussion, a **motion** was made by Mr. Lindholm, **seconded** by Mr. Prevatt to deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. The motion carried **7-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

Megan Cortez, Disability Coordinator, presented D-13 to the Board along with the staff recommendation.

**D-13: Guillermina Sanchez**
Sheriff's Special Officer II, Orange County Sheriff's Department
Date of employer filed application for service and non-service connected disability retirement: 09/02/2016

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (GENERAL MEMBER) (D-13)**

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Lindholm to deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. The motion carried **7-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

Megan Cortez, Disability Coordinator, presented D-14 to the Board along with the staff recommendation.

**D-14: Donald Wendt**
Kennel Attendant I, Orange County Community Resources
Date of employer filed application for service and non-service connected disability retirement: 08/05/2016

**STAFF RECOMMENDATION IS TO DENY SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT WITHOUT PREJUDICE DUE TO THE MEMBER'S FAILURE TO COOPERATE. (GENERAL MEMBER) (D-14)**

Following discussion, a **motion** was made by Mr. Baldwin, **seconded** by Mr. Lindholm to deny service and non-service connected disability retirement without prejudice due to the member's failure to cooperate. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Hilton | | | |
| Mr. Gilbert | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

Megan Cortez, Disability Coordinator, presented D-15 to the Board along with the staff recommendation.

**D-15: Jose Luis Saavedra**
Maintenance Crew Supervisor IV, Orange County Public Works
Date of employee application for service and non-service connected disability retirement: 10/18/2012

**STAFF RECOMMENDATION IS TO ADOPT THE FINDINGS AND RECOMMENDATIONS OF THE HEARING OFFICER AND GRANT THE APPLICANT'S APPLICATION FOR SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF JULY 27, 2012. (GENERAL MEMBER) (D-15)**

John Mitchell, member of the public, spoke on behalf of applicant and requested to approve staff recommendation.

Ms. Freidenrich asked for a synopsis in this case.

Ms. Jenike explained the process and the doctors' conclusions and stated that the Hearing Officer made the final decision based on his expertise to grant the applicant's service connected disability.

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Baldwin to adopt the findings and recommendations of the Hearing Officer and grant the applicant's application for service connected disability retirement with an effective date of July 27, 2012. The motion carried **7-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Hilton | | | Mr. Gilbert |
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |

Mr. Prevatt
Chair Ball
Mr. Lindholm
Ms. Freidenrich

Megan Cortez, Disability Coordinator, presented D-16 to the Board along with the staff recommendation.

**D-16: Craig Casey**
Fire Captain, Orange County Fire Authority
Date of employee filed application for service connected disability retirement:
10/07/2010

**STAFF RECOMMENDATION IS FOR THE BOARD TO ADOPT THE FINDINGS AND RECOMMENDATIONS OF THE HEARING OFFICER AND DENY THE APPLICANT'S APPLICATION FOR SERVICE CONNECTED DISABILITY RETIREMENT. (SAFETY MEMBER) (D-16)**

Following discussion, a **motion** was made by Mr. Lindholm, **seconded** by Mr. Packard to adopt the findings and recommendations of the Hearing Officer and deny the applicant's application for service connected disability retirement. The motion carried **6-1** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | Mr. Gilbert | | Mr. Dewane |
| Mr. Packard | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

Megan Cortez, Disability Coordinator, presented D-17 to the Board along with the staff recommendation.

**D-17: Lydia Gonzalez**

**STAFF RECOMMENDATION IS TO APPROVE THE MEMBER'S PETITION FOR REASSIGNMENT OF THE HEARING OFFICER ASSIGNED TO HER BENEFIT DETERMINATION APPEAL. (GENERAL MEMBER) (D-17)**

Ms. Gonzalez addressed the Board and requested that the Hearing Officer assigned to her case be dismissed. She also requested that staff take another look at her case.

Mr. Ball explained that Mr. Gonzalez will be able to vet all of her concerns during the appeals process.

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Hilton to approve the member's petition for reassignment of the Hearing Officer assigned to her benefit determination appeal. The motion carried **7-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Gilbert |
| Mr. Packard | | | Mr. Dewane |

| | | | |
|---|---|---|---|
| Mr. Hilton | | | Mr. Eley |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |

***Mr. Gilbert arrived at 1:14p.m.***

Megan Cortez, Disability Coordinator, presented D-18 to the Board along with the staff recommendation.

**D-18: David Rocha**

**STAFF RECOMMENDATION IS TO AFFIRM STAFF'S DETERMINATION THAT MR. ROCHA'S RETIREMENT ALLOWANCE WAS CALCULATED PROPERLY AND DENY MEMBER'S APPEAL. (GENERAL MEMBER) (D-18)**

Mr. Rocha stated that he's in disagreement with staff report for the service credit calculations.

Mr. Ball asked for staff to explain what the next steps would be for Mr. Rocha's options going forward.

Ms. Jenike stated that Mr. Rocha can file another appeal with another Hearing Officer.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Packard to affirm staff's determination that Mr. Rocha's retirement allowance was calculated properly and deny member's appeal. The motion carried **8-0** with voting as follows:

| AYES | NAYS | ABSTAIN | ABSENT |
|---|---|---|---|
| Mr. Baldwin | | | Mr. Dewane |
| Mr. Gilbert | | | Mr. Eley |
| Mr. Packard | | | |
| Mr. Prevatt | | | |
| Chair Ball | | | |
| Mr. Lindholm | | | |
| Ms. Freidenrich | | | |
| Mr. Hilton | | | |

Megan Cortez, Disability Coordinator, presented D-19 to the Board along with the staff recommendation.

**D-19: Rick Edgmon**

**AFFIRM STAFF'S DETERMINATION THAT MR. EDGMON SHOULD BE REQUIRED TO REPAY THE TOTAL AMOUNT OF THE BENEFITS OVERPAID TO HIM SINCE HE RETIRED ON NOVEMBER 11, 2005 IN THE APPROXIMATE AMOUNT OF $237,107.79. STAFF ALSO RECOMMENDS THAT OCERS FORGO THE COLLECTION OF INTEREST ON THE OVERPAYMENT, AND THAT MR. EDGMON BE GIVEN 20 YEARS TO REPAY THE OVERPAYMENT THROUGH MONTHLY DEDUCTIONS TO HIS RETIREMENT ALLOWANCE. (SAFETY MEMBER) (D-19)**

Item D-19 was pulled at the request of the applicant.

**PUBLIC COMMENTS:** At this time members of the public may address the Board of Retirement regarding any items within the subject matter jurisdiction of the Board, provided that no action may be taken on non-agendized items unless authorized by law.

N/A

**BOARD MEMBER COMMENTS**

N/A

**CHIEF EXECUTIVE OFFICER/STAFF COMMENTS**

Mr. Delaney asked the Board if they are comfortable with Mr. Hilton's request to simplify the disability agenda.

Chair Ball stated that this topic will be reviewed at the next Governance Committee meeting and discussed further.

**COUNSEL COMMENTS**

Ms. Ratto stated that her recommendation is to take this topic along with others to the Governance Committee and streamline the process.

****************

**CLOSED SESSION ITEMS**

**E-1 CONFERENCE REGARDING LITIGATION THAT HAS BEEN INITIATED (GOVERNMENT CODE SECTION 54956.9(d)(1)) O.C. Department of Education v. OCERS, CA Superior Court, Orange County, (Case No. 30-2016-00836897)**
Adjourn pursuant to Government Code Section 54956.9(d)(1).

**Recommendation:** Take appropriate action.

In February 2016, the Orange County Department of Education filed a lawsuit against OCERS, seeking to declare that OCDE owed nothing further towards the retirement benefits of its employees participating in OCERS after OCDE's last employee retired. OCDE refused to pay its fair share of OCERS' UAAL, which OCERS calculated was in excess of $3 million. OCERS cross-sued OCDE for UAAL contributions.

In 2016 OCERS obtained a Writ from the Superior Court that ordered OCDE to continue making its required monthly contributions while the lawsuit was pending. In June 2017 OCERS won a complete Judgment in its favor. The Judgement ordered OCDE to pay in a timely manner all amounts due to OCERS, now and in the future. Under law, OCDE is also liable to OCERS for attorneys' fees and administrative costs incurred in collecting the contributions, totaling some $335,000 through the end of June. In late June, OCERS contacted OCDE about paying these fees and costs; and on July 3, 2017, OCDE filed an appeal from the Judgment in favor of OCERS. OCERS continues to engage litigation counsel Reed Smith, LLP as its counsel for the appeal. In closed session, The Board voted unanimously to demand immediate payment of the amount of OCERS' legal fees and costs to date.

**E-2 CONFERENCE REGARDING SIGNIFICANT EXPOSURE TO LITIGATION (ONE MATTER) (GOVERNMENT CODE SECTION 54956.9)**

Adjourn pursuant to Government Code section 54956.9(d)(2)

**Recommendation:** Take appropriate action.

No reportable action taken.

**ADJOURNMENT: (IN MEMORY OF THE ACTIVE MEMBERS, RETIRED MEMBERS, AND SURVIVING SPOUSES WHO PASSED AWAY THIS PAST MONTH)**

**Active Members**

N/A

**Retired Members**

Bouwmeester, Augustus
Buchanan, David
Chapman, Merle
Gerber, Lea
Kies, Anthony
Ledgard, Julia
Legacy, Jean-Marie
Melanson, Mary
Martin, Paul
Obrazda, Richard
Remp, Robert
Robben, Joseph
Siegel, Nancy
Stancheck, Joseph
Tabb, Josh
Thornton, Margaret
Tinney, Wanda
Wells, Fenrick
Williams, Howard
Wright, Robert

**Surviving Spouses**

Le, Thoa Thi
Moore, Margaret

Nelson, Eileen
Shannon, Robert

There being no further business to bring before the Board, the meeting adjourned at 2:02p.m.

Submitted by: Approved by:

___________________________ ______________________________

Steve Delaney
Secretary to the Board

David Ball
Chairman

# C-6

# Memorandum

DATE: August 21, 2017

TO: Members of the Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **CEO FUTURE AGENDAS AND 2017 OCERS BOARD WORK PLAN**

## Recommendation

Receive and file.

AGENDA TOPICS FOR THE OCERS BOARD OF RETIREMENT

SEPTEMBER

Strategic Planning Workshop & Investment Forum

OCTOBER

Strategic Planning Workshop & Investment Forum Notes
Approve 2018-20 Strategic Plan
Approve 2018 Business Plan
PEPRA – An Overview and Update
Public Records Act – Informational Overview

NOVEMBER

Proposed Meeting Schedule for 2018
Approve 2018 Administrative (Operating) Budget
Annual CEO Performance Review

## Submitted by:

Steve Delaney
Chief Executive Officer

## OCERS RETIREMENT BOARD - 2017 Work Plan

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep (Offsite) | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***System Oversight*** | | STAR COLA Posting **(I)** | Approve 2017 STAR COLA **(A)** | | Review Budget to Actuals Financial Report **(I)** | Mid-Year Review of 2017 Business Plan Progress **(I)** | Approve Early Payment Rates for Fiscal Year 2017-18 **(A)** | Review Budget to Actuals Financial Report **(I)** | Strategic Planning Workshop **(I)** | Overview of 2017 Administrative Budget and Investment (Workshop) **(I)** | Review Budget to Actuals Financial Report **(I)** | CEO Compensation **(A)** |
| | | Approve 2017 COLA **(A)** | Quarterly 2016-2018 Strategic Plan Review **(A)** | | Receive Preliminary December 31, 2016 Actuarial Valuation& Funded Status of OCERS **(A)** | Approve December 31, 2016 Actuarial Valuation & Funded Status of OCERS **(A)** | Actuarial Experience Study **(A)** | Receive OCERS by the Numbers **(I)** | | Approve 2017-2019 Strategic Plan **(A)** | Approve 2018 Administrative (Operating) Budget **(A)** | |
| | | | Review 2017 Administrative (Operating) Budget **(A)** | | | Approve 2016 CAFR **(A)** | | Receive Evolution of the UAAL **(I)** | | Approve 2017 Business Plan **(A)** | Annual CEO Performance Review **(A)** | |
| | | | | | | Quarterly 2016-2018 Strategic Plan Review **(A)** | | Quarterly CEO Performance Review **(A)** | | | | |
| | | | | | | Approve Financial Statements **(A)** | | | | | | |
| ***Board Governance*** | Board Self-Review Process 2017 **(I)** | Board Self-Review Delivered **(A)** | | Brown Act Training **(I)** | | | | | | | Adopt 2017 Board Meeting Calendar **(A)** | Adopt Annual Work Plan for 2017 **(A)** |
| | | | | Conflict of Interest Training **(I)** | | | | | | | | Vice-Chair Election **(A)** |
| | | | | | | | | | | | | Appointment of Committee Members & Committee Chairs / Vice Chairs **(A)** |
| ***Regulation / Policies*** | | | Quarterly CEO Performance Review **(I)** | | | Quarterly CEO Performance Review **(I)** | Membership Policy **(A)** | Review Staff Retention Program **(I)** | | Membership Policy **(A)** | | |
| | | | | | | | | | | | | |
| ***Compliance*** | | State of OCERS **(A)** | | Form 700 and OCERS Annual Disclosure Due **(A)** | | Receive Financial Audit **(I)** | | | | | Overview of 2017 Training Courses **(I)** | |

**(A) = Action** | **(I) = Information**

# C-7

# Memorandum

**DATE**: August 9, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **QUIET PERIOD – NON-INVESTMENT CONTRACTS**

## Recommendation

Receive and file.

## Background/Discussion – Options

***1. Quiet Period Policy Guidelines – Named Service Providers***

The following guidelines established by the Quiet Period Policy, section 3.c, will govern a search process for Named Service Providers:

*"All Board and Investment Committee Members, and staff not directly involved in the search process, shall refrain from communicating with Service Provider candidates regarding any product or service related to the search offered by the candidate throughout the quiet period,…"*

***2. Quiet Period Guidelines – Non-Named Service Providers***

There are no policy guidelines regarding a quiet period for non-Named Service Providers. However, the following language is included in all distributed RFP's:

*"From the date of issuance of this RFP until the selection of one or more respondents is completed and announced, respondents are not permitted to communicate with any OCERS staff member or Board Members regarding this procurement, except through the Point of Contact named herein. Respondents violating the communications prohibition may be disqualified at OCERS' discretion. Respondents having current business with OCERS must limit their communications to the subject of such business."*

***Distributed RFP's***

The RFP's noted below are currently outstanding and are subject to the quiet period until such time as a contract(s) is finalized.

- Distributed an RFP for obituary and demographic verification services in July. Responses being evaluated.
- Sent out an RFP in July for property management services for the building located at 2223 E. Wellington Avenue, Santa Ana, CA 92701. Responses being evaluated.

# Memorandum

**Submitted by:**

Steve Delaney
Chief Executive Officer

# C-8

# Memorandum

**DATE**: August 21, 2017

**TO**: Members of the Board of Retirement

**FROM**: Gina M. Ratto, General Counsel

**SUBJECT**: **LEGISLATIVE UPDATE**

## Recommendation

Receive and file.

## Background/Discussion

The California Legislature convened on January 4, 2017 to commence the first year of the 2017-2018 legislative session. The last day for bills to pass out of their house of origin was June 2, 2017. The last day for policy committees to meet and report bills was July 21, 2017, and the Legislature is scheduled to reconvene after its summer recess on August 21, 2017. Important up-coming dates include:

September 1, 2017 -- Last day for fiscal committees to meet and report bills to the floor
September 8, 2017 -- Last day to amend bills on the floor
September 15, 2017 -- Last day for each house to pass bills
October 15, 2017 – Last day for Governor to sign or veto bills passed on or before September 15, 2017

A comprehensive list and description of the bills that staff is monitoring is attached. Below is a brief summary of the bills that may be of greater interest to the Board. **Updates and new additions to the previous report are indicated in underlined text.**

**SACRS Support Bills**

SACRS is supporting three bills:

- **AB 995 (Limón)** Existing law, the County Employees Retirement Law of 1937, authorizes counties to establish retirement systems, as specified, in order to provide pension benefits to county, city, and district employees. Existing law defines a district for these purposes and includes the retirement system established in Ventura County within the definition. The law authorizes the board of retirement in Ventura County to appoint specified personnel who, subsequent to their appointments, become employees of the retirement system subject to the terms of employment determined by the board of retirement. This bill would require any leave balance accrued by a county employee prior to his or her appointment as a Ventura County retirement system employee, as described above, to be transferred from the county to the retirement system and would require the county to pay to the retirement system an amount equal to the value of the accrued leave, as specified. **(STATUS: Signed by Governor.)**

- **SB 671 (Moorlach)** The CERL requires a county auditor to certify to the retirement board, at the end of each month or pay period, the compensation earnable paid to members of the retirement association and to transfer the applicable percentage of the county's annual contribution to the retirement fund, as specified. The CERL also authorizes the board of supervisors to authorize the county auditor to make an advance payment of all or part of the county's estimated annual contribution if the payment is made *within 30 days after the county's fiscal year begins*. Finally, the CERL authorizes a district that is a member of the retirement system in the County of San Bernardino to make advance payments, as described above. This bill would (1) specify that the authority to make advance payments does not prevent the board of supervisors or governing body of a district from making advance payments for the estimated annual county or district contributions for an additional year or partial year if certain requirements are satisfied; (2) make the provisions of the statute applicable to districts that are members of county retirement systems outside of San Bernardino County; and (3) make a variety of technical and conforming changes, including changing the deadline for the advance payment from the current language of "*within 30 days after* the county's fiscal year begins" to "*no later than 30 days after* the commencement of the county fiscal year for which the advance payment is made." **(STATUS: Signed by Governor.)**
- **AB 526 (Cooper)** would make the Sacramento County Employees Retirement System a district under the CERL. **(STATUS: Passed out of Assembly. Set for first hearing in committee; hearing cancelled at request of author.)**

**Bills That Would Amend the CERL or Other Laws That Apply to OCERS**

- **AB 283 (Cooper)** would amend the CERL to require, for purposes of determining permanent incapacity of certain peace officers, that those members be evaluated by the existing procedure established by the retirement system to determine if they can perform all of the usual and customary duties of a peace officer. **(STATUS: Passed out of Assembly. Committee hearing postponed at author's request. Committee Chair, Senator Pan, has requested assurances that the bill will not increase pension costs.)**

**Other Bills of Interest**

- **AB 530 (Cooper)** would expand the jurisdiction of the Public Employment Relations Board to include resolving disputes and statutory duties and rights of persons who are peace officers, as defined. **(STATUS: Passed out of Assembly. Referred to Senate Appropriations Committee; placed on suspense file.)**
- **AB 551 (Levine)** would extend the prohibition of the Political Reform Act, which prevents elected and other local officials, for a period of one year after they leave their positions, from appearing before their former local government agencies for the purpose of influencing administrative or legislative action, to independent contractors of the local government agency. **(STATUS: Passed out of Assembly. Ordered to third reading in Senate.)**
- **AB 1479 (Bonta)** would require state and local agencies to designate a person or office to act as the agency's custodian of records who is responsible for responding to any request made pursuant to the California Public Records Act (CPRA) and any inquiry from the public about a decision by the agency to deny a request for records. It would also authorize a court to assess a civil penalty against the agency in

an amount not less than $1,000, nor more than $5,000, for violations of the CPRA. **(STATUS: Passed out of Assembly. Read second time and amended in Senate; re-referred to Committee on Appropriations.)**

- **SB 302 (Mendoza)** Existing law requires property tax revenues of the County of Orange that are allocated by that county to a joint powers authority formed for the purpose of providing fire protection to be used by that authority for fire protection purposes, as defined. Existing law authorizes a local agency to transfer any portion of its property tax revenues that is allocable to one or more tax rate areas within the local agency to one or more other local agencies that have the same tax rate areas, as specified, subject to specified conditions, including that the transfer will not impair the ability of the transferring agency to provide existing services. This bill would additionally require, with regard to transfers of structural fire fund property tax revenues allocated by the County of Orange to a joint powers agency and required by existing law to be used to provide fire protection, that the transfer be approved by the county, a majority of member cities, and the agency currently receiving the funds. **(STATUS: Passed out of Senate. Read second time in Assembly and referred to third reading.)**

**Bills that apply to CalPERS and/or CalSTRS Only:**

- **AB 679 (Cooley)** would require CalPERS to take a security interest in specific types of collateral of at least 102% or an amount consistent with market practice, whichever is greater, to secure CalPERS' securities lending agreements. The bill would also prohibit the total market value of loan securities collateralized by marketable public equities and marketable international government bonds from exceeding 25% of the assets of the retirement fund. **(STATUS: Back in Assembly; concurrence in Senate amendments pending.)**
- **SB 525 (Pan)** would redefine the terms "disability" and "incapacity for performance of duty" as used in the Public Employees Retirement Law to specify that the duration of the disability or incapacity must be expected to last at least 12 consecutive months or result in death. **(STATUS: Passed out of Senate. Read second time in Assembly and ordered to consent calendar.)**

**Divestment Proposals (CalPERS and CalSTRS Only)**

- **AB 20 (Kalra)** This bill would require the boards of administration of the Public Employees' Retirement System and the State Teachers' Retirement System to make a specified report, on or before April 1, 2018, to the Legislature and the Governor regarding investments in the Dakota Access Pipeline, as defined. The bill would declare the intent of the Legislature that the boards, on or before April 1, 2018, review and consider factors related to tribal sovereignty and indigenous tribal rights as part of the boards' investment policies related to environmental, social, and governance issues. The bill would provide that it does not require a board to take any action unless the board determines in good faith that the action is consistent with the board's fiduciary responsibilities established in the constitution. **(STATUS: Passed out of Assembly. Read second time in Senate, amended to be an intent bill and re-referred to Committee on Appropriations.)**
- **AB 1597 (Nazarian)** would prohibit new investments and require liquidation of existing investments of CalPERS and CalSTRS in investment vehicles issued, owned, controlled or managed by the government of Turkey. **(STATUS: Passed out of Assembly. Read second time and amended in Senate. Re-referred to Committee.)**

Attachment

**Submitted by:**

Gina M. Ratto

Gina M. Ratto
General Counsel

**2017-2018 LEGISLATIVE SESSION BILLS OF INTEREST**
**LEGISLATIVE UPDATE (AUGUST 21, 2017) – ATTACHMENT**

**AB 20 (Kalra):** This bill would require the boards of administration of the Public Employees' Retirement System and the State Teachers' Retirement System to make a specified report, on or before April 1, 2018, to the Legislature and the Governor regarding investments in the Dakota Access Pipeline, as defined. The bill would declare the intent of the Legislature that the boards, on or before April 1, 2018, review and consider factors related to tribal sovereignty and indigenous tribal rights as part of the boards' investment policies related to environmental, social, and governance issues. The bill would provide that it does not require a board to take any action unless the board determines in good faith that the action is consistent with the board's fiduciary responsibilities established in the constitution. **(STATUS: Passed out of Assembly. Read second time in Senate, amended to be an intent bill and re-referred to Committee on Appropriations.)**

**AB 168 (Eggman)**: Existing law imposes various restrictions on employers with respect to applicants for employment. A violation of those restrictions is a misdemeanor. This bill would prohibit an employer from seeking salary history information about an applicant for employment and would require an employer, upon reasonable request, to provide the pay scale for a position to an applicant for employment. The bill would apply to all employers, including state and local government employers and the Legislature. The bill would specify that a violation of its provisions would not be subject to the misdemeanor provision. **(STATUS: Passed out of Assembly. Read second time in Senate and ordered to third reading.)**

**AB 283 (Cooper)**: The CERL currently provides that a member who is permanently incapacitated shall be retired for disability despite age if, among other conditions, the member's incapacity is a result of injury or disease arising out of and in the course of the member's appointment, and that employment contributes substantially to that incapacity or the member has completed five years of service and not waived retirement in respect to the particular incapacity or aggravation thereof, as specified. The bill would amend the CERL to require, for purposes of determining permanent incapacity of certain peace officers, that those members be evaluated by the existing procedure established by the retirement system to determine if they can perform all of the usual and customary duties of a peace officer. **(STATUS: Passed out of Assembly. Committee hearing postponed at author's request. Committee Chair, Senator Pan, has requested assurances that the bill will not increase pension costs.)**

**AB 512 (Rodriguez)**: *This bill applies only to CalPERS*. Existing law, until January 1, 2018, provides a state safety member of CalPERS who retires for industrial disability a retirement benefit equal to the greatest amount resulting from three possible calculations. In this regard, the benefit amount is based on an actuarially reduced service retirement, a service retirement allowance, if the member is qualified, or 50% of his or her final compensation, plus an annuity purchased with his or her accumulated contributions, if any. This bill would delete the repeal of these provisions and make them indefinite. **(STATUS: Passed out of Assembly. Referred by Committee on Appropriations to suspense file.)**

**AB 526 (Cooper).** This bill would make the Sacramento County Employees Retirement System a district under the CERL. **(STATUS: Passed out of Assembly. Set for first hearing in committee; hearing cancelled at request of author.)**

**AB 530 (Cooper)**: Current law requires the Public Employment Relations Board (PERB) to enforce and apply rules adopted by a public agency concerning unit determinations, representation, recognition, and elections. It also requires specified complaints to be processed as an unfair practice charge by the PERB. Current law does not apply these provisions to persons who are peace officers, as defined. AB 530 would expand the jurisdiction of the PERB to include resolving disputes and statutory duties and rights of persons who are peace officers, as defined. **(STATUS: Passed out of Assembly. Referred to Senate Appropriations Committee; placed on suspense file.)**

**AB 551 (Levine)**. The Political Reform Act of 1974 prohibits, for a period of one year after an official leaves his or her position, elected and other local officials who held positions with a local government agency from acting as agents or attorneys for, or otherwise representing, for compensation, any other person, by appearing before, or communicating with, that local government agency, or any committee, subcommittee, or present member of that local government agency, or any officer or employee of the local government agency, if the appearance or communication is made for the purpose of influencing administrative or legislative action or influencing any action or proceeding involving the issuance, amendment, awarding, or revocation of a permit, license, grant, or contract, or the sale or purchase of goods or property. This bill would specify that the one-year prohibition also applies to independent contractors of a local government agency or a public agency who are appearing or communicating on behalf of that agency. **(STATUS: Passed out of Assembly. Ordered to third reading in Senate.)**

**AB 679 (Cooley)** would require CalPERS to take a security interest in specific types of collateral of at least 102% or an amount consistent with market practice, whichever is greater, to secure CalPERS' securities lending agreements. The bill would also prohibit the total market value of loan securities collateralized by marketable public equities and marketable international government bonds from exceeding 25% of the assets of the retirement fund. **(STATUS: Back in Assembly; concurrence in Senate amendments pending.)**

**AB 995 (Limón)** existing law, the County Employees Retirement Law of 1937, authorizes counties to establish retirement systems, as specified, in order to provide pension benefits to county, city, and district employees. Existing law defines a district for these purposes and includes the retirement system established in Ventura County within the definition. The law authorizes the board of retirement in Ventura County to appoint specified personnel who, subsequent to their appointments, become employees of the retirement system subject to the terms of employment determined by the board of retirement. This bill would require any leave balance accrued by a county employee prior to his or her appointment as a Ventura County retirement system employee, as described above, to be transferred from the county to the retirement system and would require the county to pay to the retirement system an amount equal to the value of the accrued leave, as specified. **(STATUS: Signed by Governor.)**

**AB 1479 (Bonta).** This bill would require state and local agencies to designate a person or office to act as the agency's custodian of records who is responsible for responding to any request made pursuant to the California Public Records Act and any inquiry from the public about a decision by the agency to deny a request for records. The bill would also authorize a court that finds that an agency or the custodian improperly withheld from the public, public records which were clearly subject to public disclosure, unreasonably delayed providing the contents of a record subject to disclosure in whole or in part, assessed an unreasonable or unauthorized fee upon a requester, or otherwise did not act in good faith to comply with these provisions, to assess a civil penalty against the agency in an amount not less than $1,000, nor more than $5,000. **(STATUS: Passed out of Assembly. Read second time and amended in Senate; re-referred to Committee on Appropriations.)**

**AB 1597 (Nazarian).** *This bill applies only to CalPERS and CalSTRS*. This bill would prohibit the boards of administration of CalPERS and CalSTRS from making additional or new investments, or renewing existing investments, in an investment vehicle in Turkey that is issued by the government of Turkey or that is owned, controlled, or managed by the government of Turkey. The bill would also require the boards to liquidate existing investments in Turkey in these types of investment vehicles within six months of the passage of a federal law imposing sanctions on Turkey. **(STATUS: Passed out of Assembly. Read second time and amended in Senate. Re-referred to Committee.)**

**SB 24 (Portantino).** The Political Reform of Act of 1974 requires persons holding specified public offices to file disclosures of economic interests, including investments, real property interests, and income within specified periods of assuming or leaving office and annually while holding office. The act requires the disclosures to include a statement indicating, within a specified value range, the fair market value of investments or interests in real property and the aggregate value of income received from each reportable source. This bill would revise the dollar amounts associated with these ranges to provide for eight total ranges of fair market value of investments and real property interests and ten total ranges of aggregate value of income. **(STATUS: Passed out of Senate. Re-referred to Committee on Appropriations.)**

**SB 302 (Mendoza):** This bill would clarify existing law to specifically require all property tax revenues of Orange County attributable to a rate imposed for fire protection purposes prior to June 6, 1978 (the effective date of Proposition 13) to be allocated by Orange County to the Orange County Fire Authority (as the agency formed for the purpose of providing fire protection in Orange County). These funds are also known as structural fire fund property taxes, and the bill would appear to codify the holding of the court in *Orange County Fire Authority v. County of Orange*, which stated that any use of structural fire finds for any purpose other than fire protection is prohibited. The bill is supported by the Orange County Professional Firefighters Association, Local 3631. **(STATUS: Passed out of Senate. Read second time in Assembly and referred to third reading.)**

**SB 525 (Pan)**: *This bill applies only to CalPERS*. Under existing law applicable CalPERS (the PERL), a member who is incapacitated is required to be retired for disability in accordance with certain provisions if that member meets specified requirements concerning service. Under the PERL, the terms "disability" and "incapacity for performance of duty" are defined, as a basis of retirement, to mean disability of permanent or extended and uncertain duration, as determined by the board, except with respect to certain local safety members. This bill would redefine those terms to specify that the duration of the disability or incapacity must be expected to last at least 12 consecutive months or result in death. **(STATUS: Passed out of Senate. Read second time in Assembly and ordered to consent calendar.)**

**SB 671 (Moorlach)** The CERL requires a county auditor to certify to the retirement board, at the end of each month or pay period, the compensation earnable paid to members of the retirement association and to transfer the applicable percentage of the county's annual contribution to the retirement fund, as specified. The CERL also authorizes the board of supervisors to authorize the county auditor to make an advance payment of all or part of the county's estimated annual contribution if the payment is made *within 30 days after the county's fiscal year begins*. Finally, the CERL authorizes a district that is a member of the retirement system in the County of San Bernardino to make advance payments, as described above. This bill would (1) specify that the authority to make advance payments does not prevent the board of supervisors or governing body of a district from making advance payments for the estimated annual county or district contributions for an additional year or partial year if certain requirements are satisfied; (2) make the provisions of the statute applicable to districts that are members of county retirement systems outside of San Bernardino County; and (3) make a variety of technical and conforming changes, including changing the deadline for the advance payment from the current language of "*within 30 days after* the county's fiscal year begins" to "*no later than 30 days after* the commencement of the county fiscal year for which the advance payment is made." **(<u>STATUS: Signed by Governor</u>.)**

**Bills that did not Pass Out of House of Origin by Deadline**

**ACA 15 (Brough)** would prohibit a government employer from enhancing employee pension benefits, as defined, without approval by the voters of the jurisdiction, and would prohibit a government employer from enrolling a new government employee, as defined, in a defined benefit pension plan without approval by the voters of the jurisdiction. The measure also would prohibit a government employer from paying more than 1/2 of the total cost of retirement benefits, as defined, for new government employees without approval by the voters of the jurisdiction. The measure would prohibit retirement boards from imposing charges or other financial conditions on a government employer that proposes to close a defined benefit pension plan to new members unless the voters or the sponsoring government employer approve those charges or conditions. The measure would require challenges to the legality of actions taken by a government employer or a retirement board to comply with its provisions to be brought in state or federal courts. The measure would prohibit its provisions from being interpreted to modify or limit disability benefits provided for government employees or death benefits for families of government employees, even if provided as part of a retirement benefits system, or from requiring voter approval of disability or death benefits. The measure would prescribe various requirements and prohibitions regarding its interpretation and the effect of any other competing measures, among other things. **(STATUS: Did not pass out of Assembly.)**

**AB 241 (Dababneh)**: Existing law requires a person or business conducting business in California and any state or local agency, as defined, that owns or licenses computerized data that includes personal information, as defined, to disclose a breach in the security of the data to a resident of California whose unencrypted personal information was, or is reasonably believed to have been, acquired by an unauthorized person in the most expedient time possible and without unreasonable delay, as specified. Existing law requires a person or business, if it was the source of the breach, to offer to provide appropriate identity theft prevention and mitigation services at no cost to the person whose information was or may have been breached if the breach exposed or may have exposed the person's social security number, driver's license number, or California identification card number. This bill would require a state or local agency, if it was the source of the breach, to also offer to provide appropriate identity theft prevention and mitigation services at no cost to a person whose information was or may have been breached if the breach exposed or may have exposed the person's social security number, driver's license number, or California identification card number. **(STATUS: Did not pass out of Assembly.)**

**AB 946 (Ting).** *This bill applies only to CalPERS and CalSTRS*. This bill would prohibit the boards of administration of CalPERS and CalSTRS from making new investments or renewing existing investments in a border wall construction company, defined as any company that contracts or subcontracts to build, maintain, or provide material for President Trump's Border Wall. The bill would require the boards to liquidate investments in a border wall construction company within 12 months of the company contracting or subcontracting to provide work or material for a border wall, as defined. **(STATUS: Did not pass out of Assembly.)**

**AB 1025 (Rubio)**. This bill would repeal Government Code section 1099. Government Code section 1099 prohibits a public officer, including an appointed or elected member of a governmental board, from simultaneously holding two public offices that are incompatible, and prescribes certain circumstances that result in offices being incompatible, unless the simultaneous holding of the particular offices is compelled or expressly authorized by law. **(STATUS: Did not pass out of Assembly.)**

**SCA 8 (Moorlach)**: This measure would amend the State Constitution to permit a government employer to reduce retirement benefits that are based on work not yet performed by an employee regardless of the date that the employee was first hired, notwithstanding other provisions of the California Constitution or any other law. The measure would prohibit it from being interpreted to permit the reduction of retirement benefits that a public employee has earned based on work that has been performed, as specified. The measure would define government employer and retirement benefits for the purposes of its provisions. **(STATUS: Did not pass out of Senate.)**

**SCA 10 (Moorlach).** This measure would prohibit a government employer from providing public employees any retirement benefit increase until that increase is approved by a $^{2}/_{3}$ vote of the electorate of the applicable jurisdiction and that vote is certified. The measure would define retirement benefit to mean any postemployment benefit and would define benefit increase as any change that increases the value of an employee's retirement benefit. The measure would define a government employer to include, among others, the state and any of its subdivisions, cities, counties, school districts, special districts, the Regents of the University of California, and the California State University. **(STATUS: Did not pass out of Senate.)**

**SB 32 (Moorlach):** *This bill applies only to CalPERS and CalSTRS*. The bill would create the Citizens' Pension Oversight Committee to serve in an advisory role to the boards of administration of CalPERS and CalSTRS. It would require the committee, on or before January 1, 2019 and annually thereafter to review the actual pension costs and obligations of CalPERS and CalSTRS and report on these costs and obligation to the public. **(STATUS: Did not pass out of Senate.)**

**SB 371 (Moorlach)**: The Meyers-Milias-Brown Act requires the governing body of a local public agency to meet and confer in good faith regarding wages, hours, and other terms and conditions of employment with representatives of a recognized employee organization. This bill would prohibit an individual who will be directly or indirectly affected by an MOU between a local public agency and a recognized public employee organization from representing the public agency in negotiations with the recognized public employee organization. **(STATUS: Did not pass out of Senate.)**

**SB 560 (Allen):** *This bill applies only to CalPERS and CalSTRS*. This bill would require the boards of administration of CalPERS and CalSTRS to consider financial climate risk in their management of any funds they administer and to include in their comprehensive annual financial reports, starting on January 1, 2020, the financial climate risks of their investments, including alignment of their portfolios with a specified climate agreement and California climate policy goals, the value at risk if these goals are achieved, and the exposure of the portfolios to long-term risks. "Financial climate risk" is defined by the bill to mean material financial risk posed to an investment by the effects of the changing climate including but not limited to intense storms, rising sea levels, higher global temperatures, economic damages from carbon emissions, and other financial risks due to public policies to address climate change, shifting consumer attitudes, changing economics of traditional carbon-intense industries, and other transition risks. **(STATUS: Did not pass out of Senate.)**

**SB 571 (Pan).** Existing federal law prescribes requirements for different types of tax-qualified retirement plans that permit employees to contribute portions of their pretax wages to individual retirement accounts or that provide for deferred compensation. This bill would authorize a state or local public employer participating in an employee supplemental retirement savings plan, defined to include specified deferred compensation plans and payroll deduction individual retirement account plans, to make a deduction from the wages or compensation of an employee for contributions attributable to automatic enrollment and automatic escalation in the employee retirement plan. The bill would require an employer that provides for automatic enrollment in a supplemental retirement savings plan to provide a default investment option and default investment plan that meets a variety of specified criteria, including providing employees an opportunity to opt out or withdraw. The bill would place other requirements and restrictions on these plans. **(STATUS: Did not pass out of Senate.)**

**SB 657 (Bates).** The California Public Records Act (CPRA) requires state and local agencies to make public records available for inspection, subject to certain exceptions. Under existing law, a person may seek injunctive or declaratory relief or a writ of mandate to enforce his or her right to inspect or receive a copy of a public record, as specified. In addition, an agency's decision to release a public record pursuant to the CPRA is reviewable by a petition for a writ of mandate on the basis that the public record was confidential, which is known as a reverse public records action. This bill would require a court in a reverse public records action to apply the provisions of the CPRA as if the action had been initiated by a person requesting disclosure of a public record; would require the requestor to be named as a real party of interest; and would require a court to allow the requestor to be heard on the merits of the action. This bill would provide that, if a court orders the public agency to disclose the records, the court shall order the person who initiated the action to pay the court costs and reasonable attorney's fees of the requestor; and would prohibit a court from requiring the requestor to pay court costs and attorney's fees to the person who initiated the reverse public records action or to the public agency if the court orders the public agency to not disclose the record. **(STATUS: Did not pass out of Senate.)**

# C-9

# Memorandum

**DATE**: August 21, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **OCERS BY THE NUMBERS (2017 EDITION)**

## Recommendation

Receive and file.

## Background/Discussion

Attached is the 2017 edition of OCERS by the Numbers, based on the December 31, 2016 actuarial valuation.

OCERS has been producing this general informational document since 2009, with the majority of the statistical data drawn from each year's completed valuation report.

This document provides all stakeholders, no matter their point of view as to public pensions, with data-based facts regarding the OCERS plan. The concept being that while individuals may hold varying points of view, there can only be one set of facts to help guide informed discussion.

## Submitted by:

Steve Delaney
Chief Executive Officer

# 2017
# OCERS by the Numbers
(*As of December 31, 2016 actuarial valuation*)

# Table of Contents

# OCERS by the Numbers

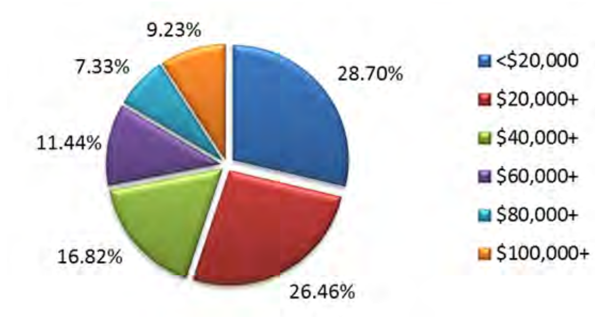
## OCERS Pension Quick Facts

As of December 31, 2016

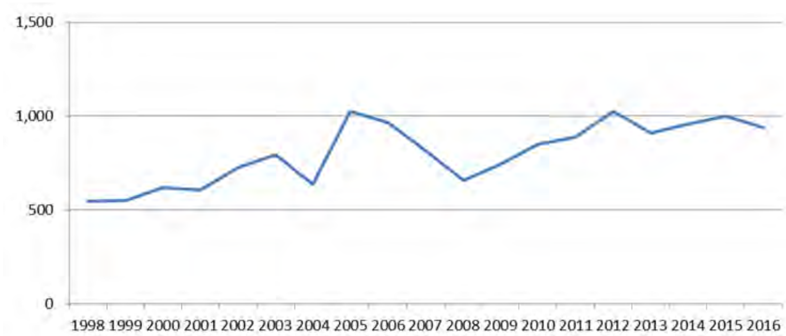
**Quick Facts**
**(For more details on retirees see pages 15–30)**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Members & Employers** | **27,116** active & inactive members | | **16,369** retirees, beneficiaries & survivors | | **20** plan sponsors | **43,485** total membership |
| **Pension Averages** | **$3,142** monthly allowance for all general members and payees | **$5,917** monthly allowance for all safety members and payees | **21** average years of service for general members who retired in 2016 | **23** average years of service for safety members who retired in 2016 | **61 years old** average age at retirement for general members who retired in 2016 | **54 years old** average age at retirement for safety members who retired in 2016 |

Annual Pensions for Service Retirees




Retirement Trend
Retirees per year




**FUNDING STATUS:**

As of December 31, 2016 OCERS is approximately 73.06% funded based on the valuation value of assets of $13.1 billion in trust fund assets. The unfunded liability is estimated at $4.83 billion. (Segal Consulting)

**CONTRIBUTION SOURCES:**

Every dollar paid to OCERS pensioners comes from three sources:*

OCERS active members – 16¢

Employers – 34¢

Investment Earnings – 50¢

* Source: OCERS income to trust fund over last 19 years

# Demographics

# Orange County Employees Retirement System
**As of December 31, 2016**

## Demographics

### OCERS Active Plan Sponsors

City of San Juan Capistrano

County of Orange

Orange County Cemetery District

Orange County Children and Families Commission

Orange County Employees Retirement System

Orange County Fire Authority

Orange County In-Home Supportive Services Public Authority

Orange County Local Agency Formation Commission

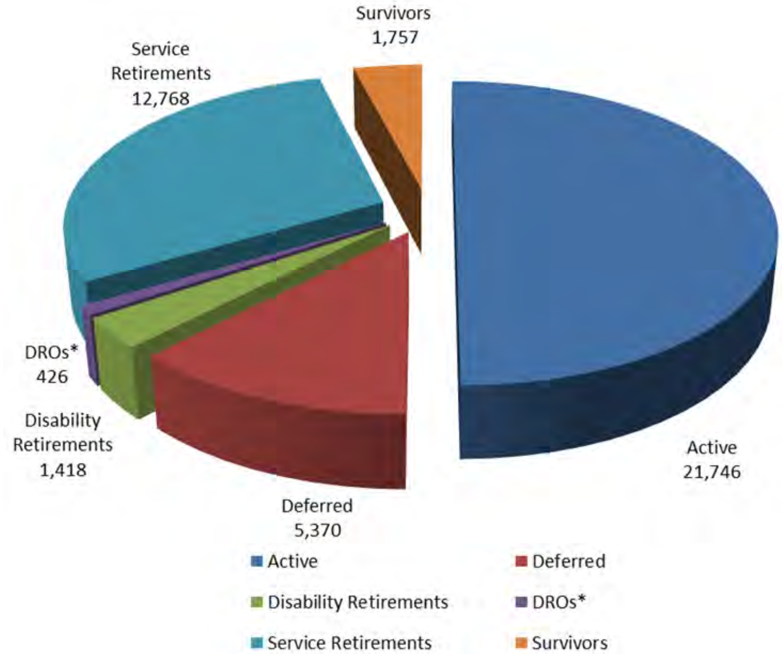
Orange County Public Law Library

Orange County Sanitation District

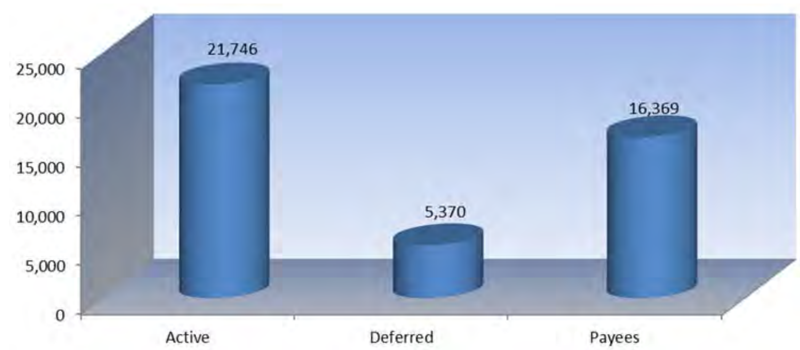
Orange County Superior Court

Orange County Transportation Authority

Transportation Corridor Agencies




* DRO: A court order dividing a pension benefit due to a divorce or legal separation.




### OCERS Inactive Plan Sponsors

Capistrano Beach Sanitary District

City of Rancho Santa Margarita

Cypress Parks and Recreation District

Orange County Department of Education

Orange County Mosquito and Vector Control District

University of California, Irvine Medical Center

University of California, Irvine Campus

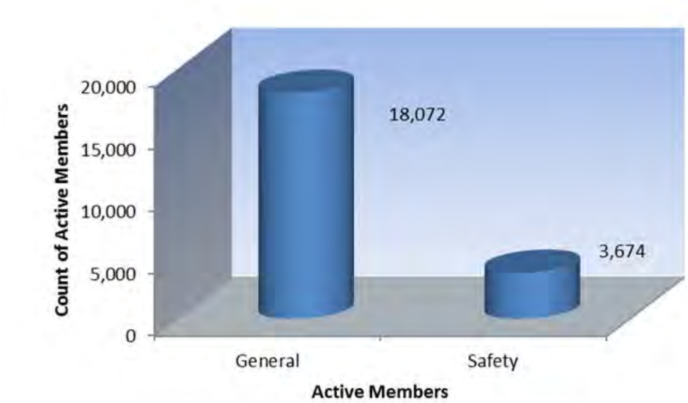
**Count of Active, Deferred and Payee by Status**
**As of December 31, 2016**

| | General | Safety | Total |
|---|---|---|---|
| Active | 18,072 | 3,674 | 21,746 |
| Deferred | 4,940 | 430 | 5,370 |
| Payee | 13,434 | 2,935 | 16,369 |
| Total | 36,446 | 7,039 | 43,485 |

# *Active Member Demographics*

## Count of Active Members by Status
### As of December 31, 2016

| | General | Safety | Total Count |
|---|---|---|---|
| Active | 18,072 | 3,674 | 21,746 |

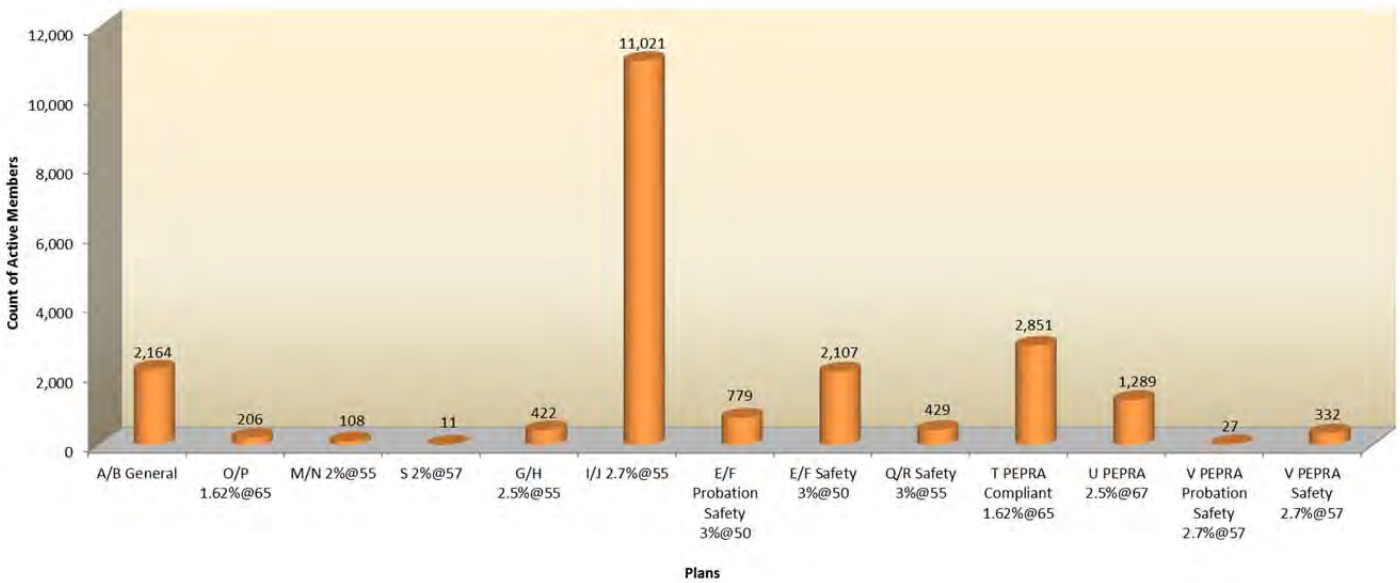



## Count of Active Members by Plans and by Employers
### As of December 31, 2016

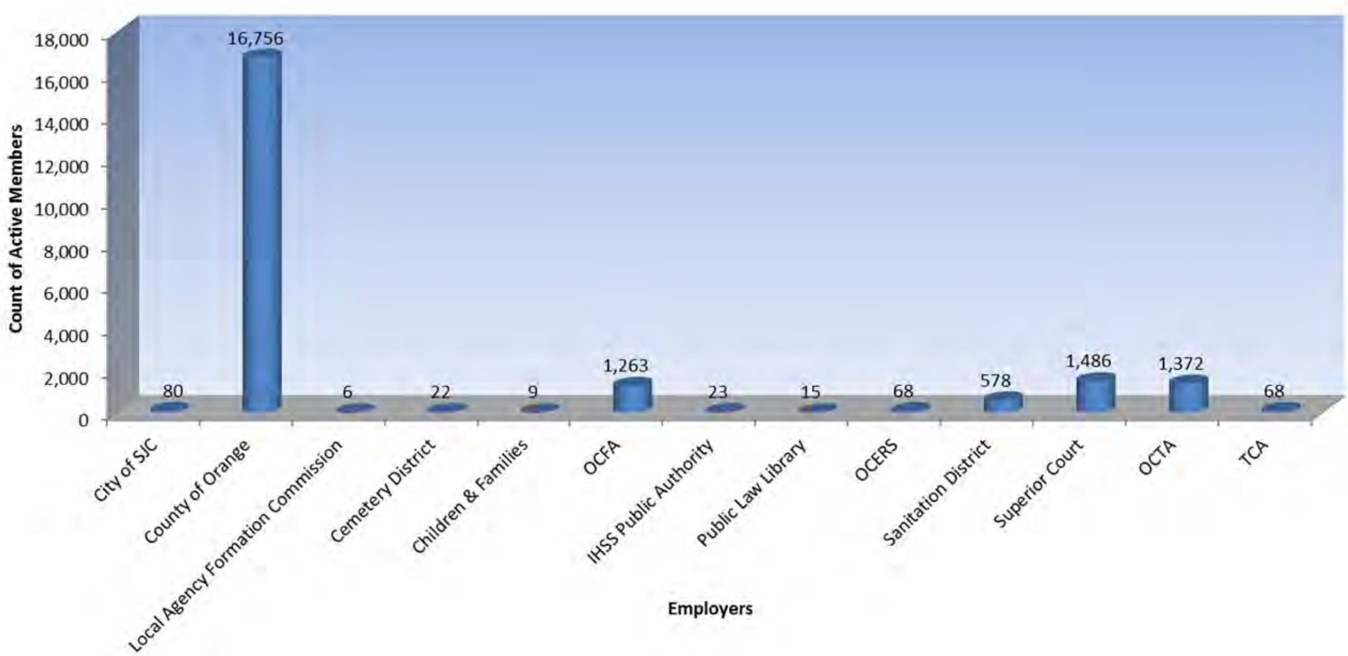
**Retirement Plans**

| Employers | A/B General | O/P 1.62%@65 | M/N 2%@55 | S 2%@57 | G/H 2.5%@55 | I/J 2.7%@55 | E/F Probation Safety 3%@50 | E/F Safety 3%@50 | Q/R Safety 3%@55 | T PEPRA Compliant 1.62%@65 | U PEPRA 2.5%@67 | V PEPRA Probation Safety 2.7%@57 | V PEPRA Safety 2.7%@57 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City of SJC | | | | 11 | | 37 | | | | | 32 | | | **80** |
| County of Orange | 861 | 178 | | | | 9,571 | 779 | 1,310 | 377 | 2,571 | 862 | 27 | 220 | **16,756** |
| Local Agency Formation Commission | | | | | | 2 | | | | 4 | | | | **6** |
| Cemetery District | | | 18 | | | | | | | | 4 | | | **22** |
| Children & Families | | | | | | 6 | | | | | 3 | | | **9** |
| OCFA | | | 43 | | | 159 | | 797 | 52 | | 100 | | 112 | **1,263** |
| IHSS Public Authority | 8 | | | | | | | | | | 15 | | | **23** |
| Public Law Library | | | | | 14 | | | | | | 1 | | | **15** |
| OCERS | | | | | | 48 | | | | 16 | 4 | | | **68** |
| Sanitation District | 54 | | | | 408 | | | | | | 116 | | | **578** |
| Superior Court | | 28 | | | | 1,198 | | | | 260 | | | | **1,486** |
| OCTA | 1,241 | | | | | | | | | | 131 | | | **1,372** |
| TCA | | | 47 | | | | | | | | 21 | | | **68** |
| **Total** | **2,164** | **206** | **108** | **11** | **422** | **11,021** | **779** | **2,107** | **429** | **2,851** | **1,289** | **27** | **332** | **21,746** |

**Count of Active Members by Plans**
**As of December 31, 2016**

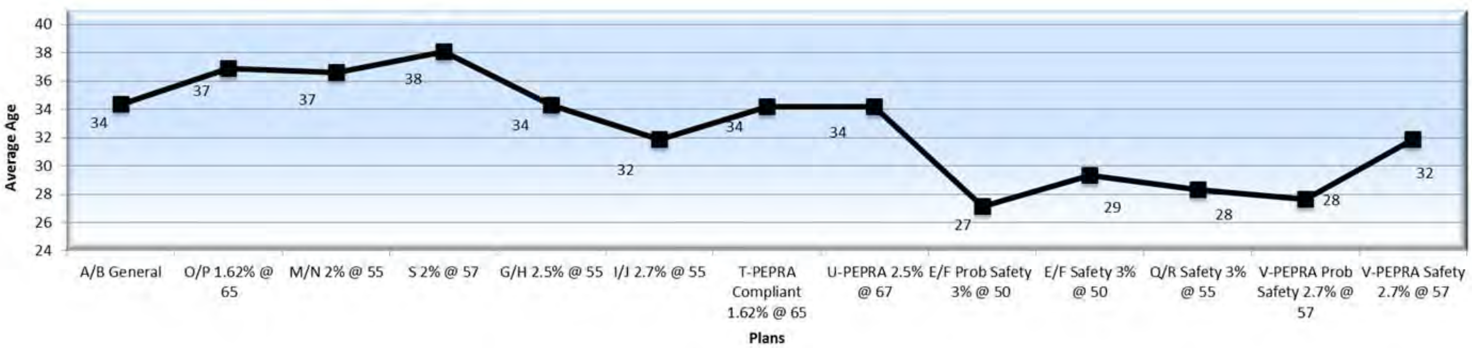



**Count of Active Members by Employers**
**As of December 31, 2016**



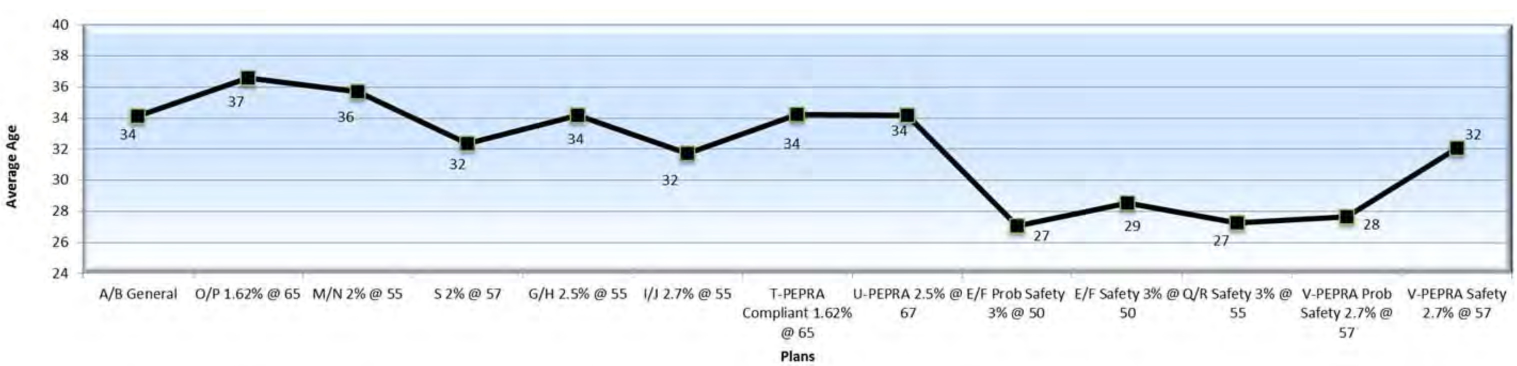
## Average Entry Age of Active Members including Reciprocity by Plan
### As of December 31, 2016

| | A/B General | O/P 1.62% @ 65 | M/N 2% @ 55 | S 2% @ 57 | G/H 2.5% @ 55 | I/J 2.7% @ 55 | T PEPRA-Compliant 1.62% @ 65 | U PEPRA 2.5% @67 | E/F Probation Safety 3% @ 50 | E/F Safety 3% @ 50 | Q/R Safety 3% @ 55 | V PEPRA Prob Safety 2.7% @ 57 | V PEPRA Safety 2.7% @ 57 | Average Entry Age |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Entry Age by Plan | 34 | 37 | 37 | 38 | 34 | 32 | 34 | 34 | 27 | 29 | 28 | 28 | 32 | 32 |




## Average Entry Age of Active Members without including Reciprocity by Plan
### As of December 31, 2016

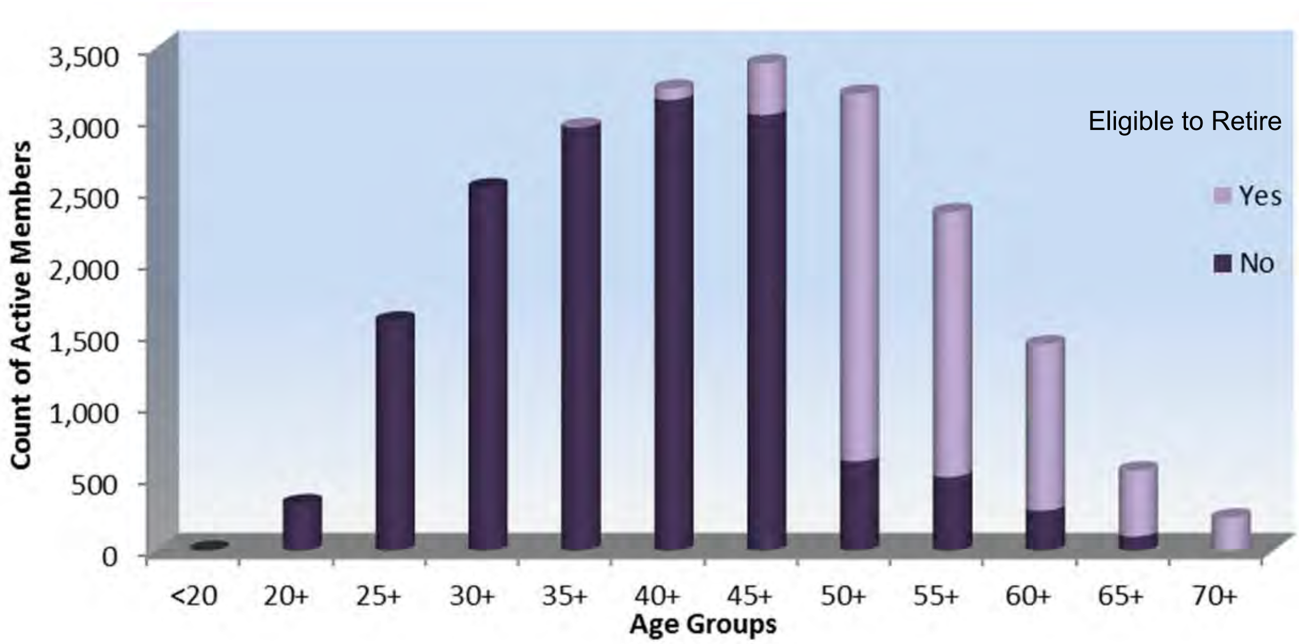
| | A/B General | O/P 1.62% @ 65 | M/N 2% @ 55 | S 2% @ 57 | G/H 2.5% @ 55 | I/J 2.7% @ 55 | T PEPRA-Compliant 1.62% @ 65 | U PEPRA 2.5% @67 | E/F Probation Safety 3% @ 50 | E/F Safety 3% @ 50 | Q/R Safety 3% @ 55 | V PEPRA Prob Safety 2.7% @ 57 | V PEPRA Safety 2.7% @ 57 | Average Entry Age |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Entry Age by Plan | 34 | 37 | 36 | 32 | 34 | 32 | 34 | 34 | 27 | 29 | 27 | 28 | 32 | 32 |



## Count of Active Members Eligible to Retire by Age Groups
### As of December 31, 2016

**Age Groups**

| Eligible to Retire | <20 | 20+ | 25+ | 30+ | 35+ | 40+ | 45+ | 50+ | 55+ | 60+ | 65+ | 70+ | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **No** | 5 | 328 | 1,599 | 2,525 | 2,942 | 3,134 | 3,028 | 621 | 512 | 278 | 98 | | 15,070 |
| **Yes** | | | | | 2 | 77 | 359 | 2,555 | 1,840 | 1,155 | 459 | 229 | 6,676 |
| | | | | | | | | | | | | | 21,746 |



# Active Members – Eligible to Retire by Employers
## As of December 2016

New employees are defaulted into PEPRA plans pending any claim to reciprocity

| Plans | A & B General | O & P 1.62%@65 | M & N 2%@55 | S 2%@57 | G & H 2.5%@55 | I & J 2.7%@55 | E & F Prob Safety 3%@50 | E & F Safety 3%@50 | Q & R Safety 3%@55 | T PEPRA 1.62%@65 | U PEPRA 2.5%@67 | V PEPRA Safety 2.7%@57 | Total Eligible to Retire | % Eligible by Employer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Of SJC | | | | 2 | | 14 | | | | | 1 | | **17** | **21%** |
| OCTA | 603 | | | | | | | | | | | | **603** | **44%** |
| Cemetery District | | | 10 | | | | | | | | | | **10** | **45%** |
| Children & Families Comm | | | | | | 2 | | | | | | | **2** | **22%** |
| OCFA | | | 4 | | | 82 | | 298 | 1 | | | | **385** | **30%** |
| IHSS Public Authority | 2 | | | | | | | | | | | | **2** | **9%** |
| Public Law Library | | | | | 10 | | | | | | | | **10** | **67%** |
| OCERS | | | | | | 13 | | | | | | | **13** | **19%** |
| Sanitation District | 6 | | | | 205 | | | | | | | | **211** | **37%** |
| Superior Court | | 1 | | | | 481 | | | | 1 | | | **483** | **33%** |
| County of Orange | 295 | 5 | | | | 3,785 | 241 | 571 | 5 | 12 | 1 | 1 | **4,916** | **29%** |
| TCA | | | 24 | | | | | | | | | | **24** | **35%** |
| **Total Eligible to Retire** | **906** | **6** | **38** | **2** | **215** | **4,377** | **241** | **869** | **6** | **13** | **2** | **1** | **6,676** | **31%** |
| **% Eligible By Plan** | **42%** | **3%** | **35%** | **18%** | **51%** | **40%** | **31%** | **41%** | **1%** | **0%** | **0%** | **0%** | | |

**(Percentages rounded)**

**Eligible to retire for plans A – S (Legacy plans for public employees hired before Jan 1, 2013 including reciprocity) if:**

- 70 years old
- 50 years old and has 10 or more years of ***eligible service***
- Safety Member has 20 years or more of ***eligible service at any age***
- General Member has 30 years or more of ***eligible service at any age***

**Eligible to retire for PEPRA compliant/alternative plans T and W if:**

- 50 years old and has 10 or more years of ***eligible service***
- 70 years old

**Eligible to retire for PEPRA plan U if:**

- 52 years old and has 5 or more years of ***eligible service***
- 70 years old

**Eligible to retire for PEPRA Safety plan V if:**

- 50 years old and has 5 or more years of ***eligible service***
- 70 years old

**Eligible Service =** current service + $_{\text{incoming}}$ reciprocal service

| | **Tier 1**<br>12 month measuring period | **Tier 2 (hired on or after Sep 21, 1979)**<br>36 month measuring period | |
|---|---|---|---|
| **General** | **G** | **H** | 2.5% @ 55 |
| | **I** | **J** | 2.7% @ 55 |
| | **M** | **N** | 2% @ 55 |
| | **O** | **P** | 1.62% @ 65 |
| | | **S** | 2% @ 57 |
| | **A** | **B** | Other General Members |
| **Safety** | **C** | **D** | 2% @ 50 |
| | **E** | **F** | 3% @ 50 |
| | **Q** | **R** | 3% @ 55 |

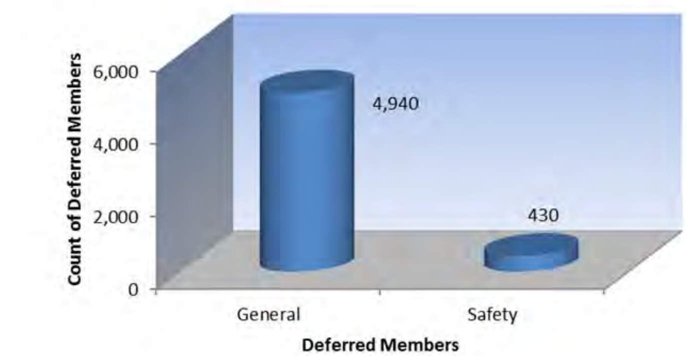
**New Public Employees hired on or after Jan 1, 2013**

| | | |
|---|---|---|
| **General** | **T & W** | 1.62% @ 65 |
| | **U** | 2.5% @ 67 |
| **Safety** | **V** | 2.7% @ 57 |

# *Deferred Member Demographics*

## Count of Deferred Members by Status
### As of December 31, 2016

| | General | Safety | Total Count |
|---|---|---|---|
| Deferred | 4,940 | 430 | 5,370 |

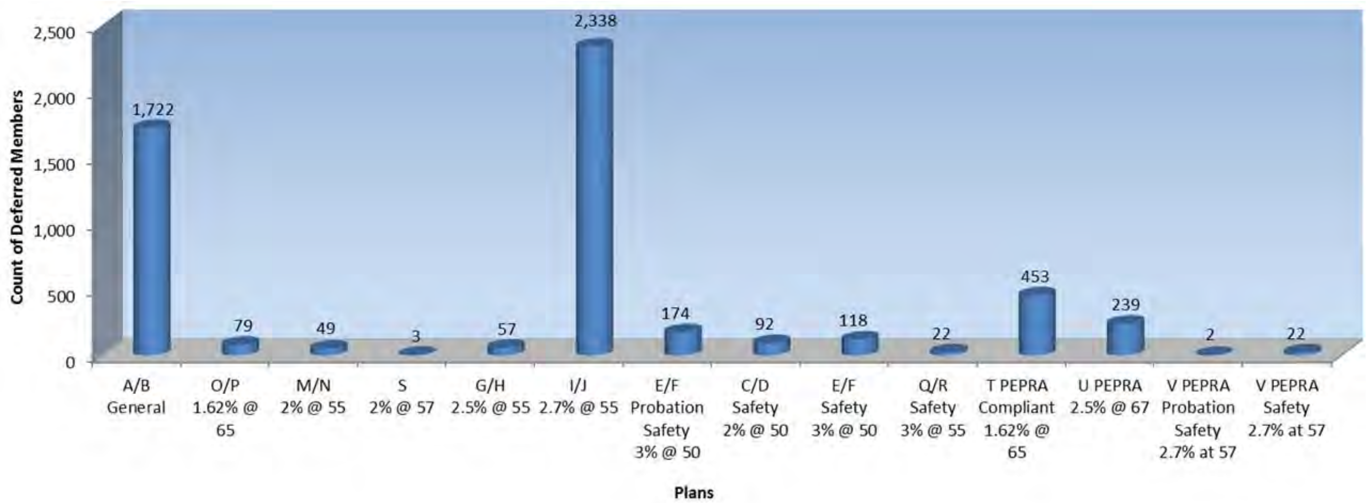



## Count of Deferred Members by Plans and by Employers
### As of December 31, 2016

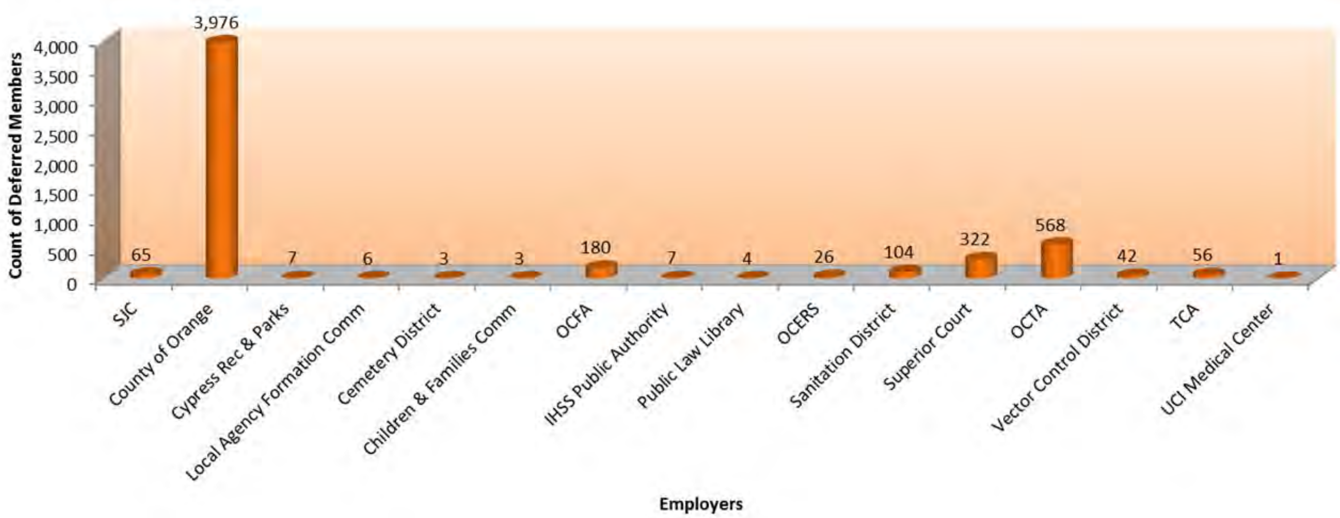
Retirement Plans

| Employers | A/B General | O/P 1.62% @ 65 | M/N 2% @ 55 | S 2% @ 57 | G/H 2.5% @ 55 | I/J 2.7% @ 55 | E/F Probation Safety 3% @ 50 | C/D Safety 2% @ 50 | E/F Safety 3% @ 50 | Q/R Safety 3% @ 55 | T PEPRA Compliant 1.62% @ 65 | U PEPRA 2.5% @ 67 | V PEPRA Probation Safety 2.7% at 57 | V PEPRA Safety 2.7% at 57 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SJC | 8 | | | 3 | | 45 | | | | | | 9 | | | **65** |
| County of Orange | 1,039 | 68 | | | | 1,932 | 174 | 86 | 87 | 20 | 407 | 149 | 2 | 12 | **3,976** |
| Cypress Rec & Parks | 7 | | | | | | | | | | | | | | **7** |
| Local Agency Formation Comm | | 2 | | | | 4 | | | | | | | | | **6** |
| Cemetery District | | | 3 | | | | | | | | | | | | **3** |
| Children & Families Comm | | | | | | 3 | | | | | | | | | **3** |
| OCFA | 11 | | 6 | | | 81 | | 6 | 31 | 2 | | 33 | | 10 | **180** |
| IHSS Public Authority | 5 | | | | | | | | | | | 2 | | | **7** |
| Public Law Library | 2 | | | | 2 | | | | | | | | | | **4** |
| OCERS | 1 | | | | | 20 | | | | | 3 | 2 | | | **26** |
| Sanitation District | 39 | | | | 55 | | | | | | | 10 | | | **104** |
| Superior Court | 17 | 9 | | | | 253 | | | | | 43 | | | | **322** |
| OCTA | 538 | | | | | | | | | | | 30 | | | **568** |
| Vector Control District | 42 | | | | | | | | | | | | | | **42** |
| TCA | 12 | | 40 | | | | | | | | | 4 | | | **56** |
| UCI Medical Center | 1 | | | | | | | | | | | | | | **1** |
| **Total** | **1,722** | **79** | **49** | **3** | **57** | **2,338** | **174** | **92** | **118** | **22** | **453** | **239** | **2** | **22** | **5,370** |

## Count of Deferred Members by Plans
### As of December 31, 2016



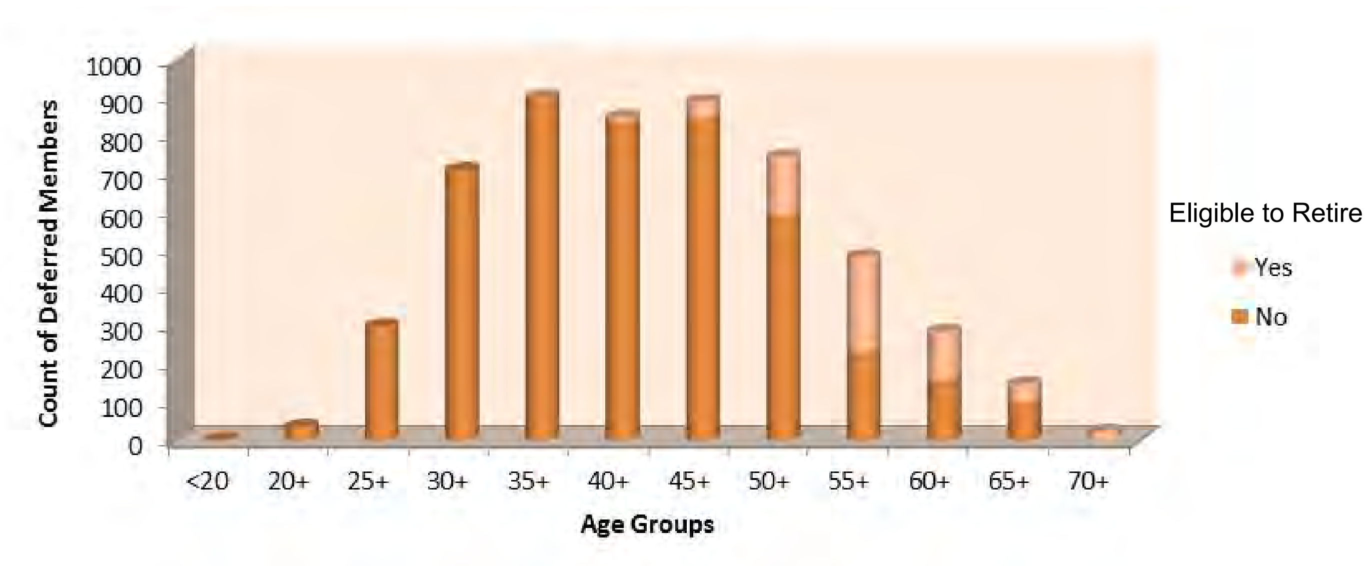

## Count of Deferred Members by Employers
### As of December 31, 2016



## Count of Deferred Members Eligible to Retire by Age Groups
### As of December 31, 2016

**Age Groups**

| Eligible to Retire | <20 | 20+ | 25+ | 30+ | 35+ | 40+ | 45+ | 50+ | 55+ | 60+ | 65+ | 70+ | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **No** | 1 | 37 | 300 | 710 | 900 | 838 | 844 | 591 | 233 | 160 | 100 | | 4,714 |
| **Yes** | | | | | 1 | 10 | 45 | 153 | 249 | 126 | 48 | 24 | 656 |
| | | | | | | | | | | | | | 5,370 |



## Count of Deferred Members - Eligible to Retire by Employers
## As of December 2016

| Plans | A/B | M/N 2%@55 | G/H 2.5%@55 | I/J 2.7%@55 | C/ D Safety 2%@50 | E/F Prob Safety 3%@50 | E/F Safety 3%@50 | Eligible to Retire | % Eligible by Employer |
|---|---|---|---|---|---|---|---|---|---|
| City of SJC | 3 | | | 7 | | | | 10 | 15% |
| Cypress Rec & Parks | 3 | | | | | | | 3 | 43% |
| LAFCO | | | | 1 | | | | 1 | 17% |
| OCTA | 84 | | | | | | | 84 | 15% |
| OCFA | 5 | | | 4 | 5 | | 1 | 15 | 8% |
| IHSS Public Authority | 1 | | | | | | | 1 | 14.29 |
| Public Law Library | 1 | | 1 | | | | | 2 | 50% |
| OCERS | 1 | | | 2 | | | | 3 | 12% |
| Sanitation District | 11 | | 3 | | | | | 14 | 13% |
| Superior Court | 2 | | | 17 | | | | 19 | 6% |
| Vector Control | 22 | | | | | | | 22 | 52% |
| County of Orange | 304 | | | 97 | 45 | 16 | 15 | 477 | 12% |
| TCA | | 4 | | | | | | 4 | 7% |
| UCI Medical Center | 1 | | | | | | | 1 | 100% |
| **Total Eligible to Retire** | **438** | **4** | **4** | **128** | **50** | **16** | **16** | **656** | **12%** |
| **% Eligible by Plan** | **25%** | **8%** | **7%** | **5%** | **54%** | **9%** | **14%** | | |

**Eligible to retire for plans A – S (Legacy plans for public employees hired before Jan 1, 2013 including reciprocity) if:**
- 70 years old

- 50 years old and has 10 or more years of ***eligible service***

- Safety Member has 20 years or more of ***eligible service at any age***

- General Member has 30 years or more of ***eligible service at any age***

**Eligible to retire for PEPRA compliant/alternative plans T & W if:**
- 50 years old and has 10 or more years of ***eligible service***
- 70 years old

**Eligible to retire for PEPRA plan U if:**
- 52 years old and has 5 or more years of ***eligible service***
- 70 years old

**Eligible to retire for PEPRA Safety plan V if:**
- 50 years old and has 5 or more years of ***eligible service***
- 70 years old

**Eligible Service =** current service + incoming reciprocal service

| | **Tier 1**<br>12 month measuring period | **Tier 2 (hired on or after Sep 21, 1979)**<br>36 month measuring period | |
|---|---|---|---|
| **General** | **G** | **H** | 2.5% @ 55 |
| | **I** | **J** | 2.7% @ 55 |
| | **M** | **N** | 2% @ 55 |
| | **O** | **P** | 1.62% @ 65 |
| | | **S** | 2% @ 57 |
| | **A** | **B** | Other General Members |
| **Safety** | **C** | **D** | 2% @ 50 |
| | **E** | **F** | 3% @ 50 |
| | **Q** | **R** | 3% @ 55 |

**New Public Employees hired on or after Jan 1, 2013**

| | | |
|---|---|---|
| **General** | **T & W** | 1.62% @ 65 |
| | **U** | 2.5% @ 67 |
| **Safety** | **V** | 2.7% @ 57 |

# *Retiree & Beneficiary Demographics (Payees)*

## Retiree & Beneficiary Demographics

**All benefit recipients as of December 31, 2016**

- For General Members and other payees: 13,434
- For Safety Members and other payees: 2,935
- Total Benefit Recipients: 16,369

**Average years of service for all General and Safety members who retired with service and disability retirements:** 20.05 years of service

**Average age at retirement for members who retired with a service retirement in 2016**

- For General Members: 62.23 years old
- For Safety Members: 55.04 years old

**Average years of service for members who retired with a service retirement in 2016**

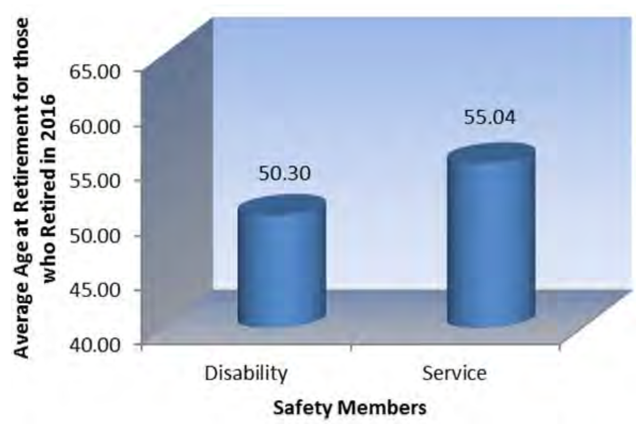
- Average years of service at retirement for General Members: 18.87
- Average years of service at retirement for Safety Members: 24.52

**Average Years *into* Retirement of Currently Retired Members**
**As of December 31, 2016**

| | Service | | | Disability | | | Total |
|---|---|---|---|---|---|---|---|
| | General | Safety 2% | Safety 3% | General | Safety 2% | Safety 3% | |
| Capistrano Beach Sanitary District | 3<br>7.13 | | | | | | 3<br>7.13 |
| City of San Juan Capistrano | 106<br>9.39 | | | 7<br>13.88 | | | 113<br>11.64 |
| County of Orange | 8,184<br>11.67 | 470<br>17.46 | 1,093<br>6.62 | 569<br>17.76 | 224<br>25.03 | 152<br>7.44 | 10,692<br>14.33 |
| Cypress Recreation & Parks | 16<br>11.34 | | | | | | 16<br>11.34 |
| Local Agency Formation Comm. | 4<br>4.58 | | | | | | 4<br>4.58 |
| Cemetery District | 5<br>11.39 | | | | | | 5<br>11.39 |
| Children & Families Comm. | 9<br>4.06 | | | | | | 9<br>4.06 |
| Department of Education | 19<br>18.31 | | | | | | 19<br>18.31 |
| OCFA | 141<br>7.03 | 49<br>15.68 | 348<br>6.81 | 10<br>12.54 | 33<br>17.51 | 122<br>7.49 | 703<br>11.18 |
| IHSS Public Authority | 1<br>2.10 | | | | | | 1<br>2.10 |
| Public Law Library | 10<br>8.02 | | | | | | 10<br>8.02 |
| OCERS | 31<br>8.56 | | | 3<br>16.82 | | | 34<br>12.69 |
| Sanitation District | 354<br>8.77 | | | 13<br>17.74 | | | 367<br>13.26 |
| Superior Court | 755<br>7.42 | | | 11<br>10.08 | | | 766<br>8.75 |
| OCTA | 861<br>8.81 | | | 256<br>16.49 | | | 1,117<br>12.65 |
| Vector Control District | 31<br>11.15 | | | | | | 31<br>11.15 |
| Rancho Santa Margarita | 1<br>0.36 | | | | | | 1<br>0.36 |
| TCA | 40<br>6.56 | | | | | | 40<br>6.56 |
| UCI Medical Center | 198<br>20.45 | | | 12<br>22.06 | | | 210<br>21.26 |
| UCI Campus | 15<br>13.82 | | | 1<br>12.10 | | | 16<br>12.96 |
| Average | 10,784<br>9.05 | 519<br>16.57 | 1,441<br>6.72 | 882<br>15.50 | 257<br>21.27 | 274<br>7.47 | 14,157<br>10.19 |

## Average Age at Retirement by Employer and Benefit Type
## For Those That Retired With An Effective Retirement Date in 2016

| | General | | | Safety | | |
|---|---|---|---|---|---|---|
| | Disability | Service | Total | Disability | Service | Total |
| **City of San Juan Capistrano** | | 56.82 | **56.82** | | | |
| **County of Orange** | 57.39 | 61.22 | **59.31** | 47.30 | 53.88 | **50.59** |
| **OCFA** | | 57.21 | **57.21** | 56.20 | 56.20 | **54.76** |
| **OCERS** | | 61.79 | **61.79** | | | |
| **Sanitation District** | | 60.16 | **60.16** | | | |
| **Superior Court** | | 59.73 | **59.73** | | | |
| **OCTA** | | 61.83 | **61.83** | | | |
| **Vector Control District** | | 66.43 | **66.43** | | | |
| **Rancho Santa Margarita** | | 71.59 | **71.59** | | | |
| **TCA** | | 67.27 | **67.27** | | | |
| **UCI Medical Center** | | 60.52 | **60.52** | | | |
| **Average** | **57.39** | **62.23** | **61.04** | **50.30** | **55.04** | **54.24** |

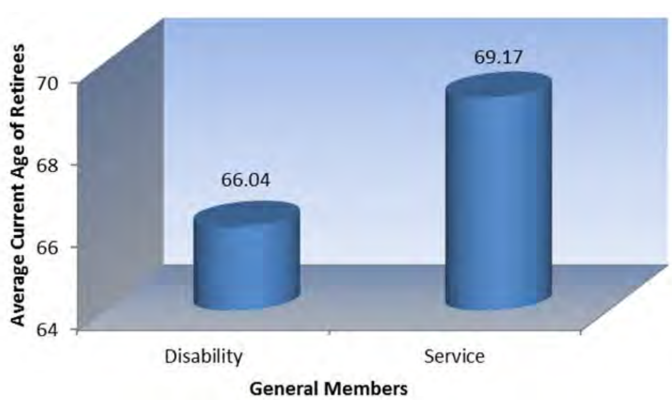



## Average Years of Service at Retirement by Employer and Benefit Type For Those That Retired With an Effective Retirement Date in 2016

| | General | | | Safety | | |
|---|---|---|---|---|---|---|
| | Disability | Service | Total | Disability | Service | Total |
| **City of San Juan Capistrano** | | 21.05 | **21.05** | | | |
| **County of Orange** | 14.89 | 21.45 | **18.17** | 22.72 | 22.87 | **22.79** |
| **OCFA** | | 24.51 | **24.51** | 3.72 | 26.17 | **14.95** |
| **OCERS** | | 10.97 | **10.97** | | | |
| **Sanitation District** | | 22.55 | **22.55** | | | |
| **Superior Court** | | 22.17 | **22.17** | | | |
| **OCTA** | | 21.24 | **21.24** | | | |
| **Vector Control District** | | 10.09 | **10.09** | | | |
| **Rancho Santa Margarita** | | 3.21 | **3.21** | | | |
| **Transportation Corridor Agency** | | 8.31 | **8.31** | | | |
| **UCI Medical Center** | | 41.98 | **41.98** | | | |
| **Average** | **14.89** | **18.87** | **21.49** | **13.22** | **24.52** | **23.39** |


## Average Age of All Retirees by Employer and Benefit Type
### As of December 31, 2016

| | General | | | Safety | | |
|---|---|---|---|---|---|---|
| | Disability | Service | Total | Disability | Service | Total |
| Capistrano Beach Sanitary District | | 70.44 | **70.44** | | | |
| City of San Juan Capistrano | 61.62 | 67.4 | **64.51** | | | |
| County of Orange | 66.6 | 71.23 | **68.91** | 62.19 | 64.08 | **63.14** |
| Cypress Recreation & Parks | | 68.07 | **68.07** | | | |
| Local Agency Formation Comm. | | 59.96 | **59.96** | | | |
| Cemetery District | | 74.79 | **74.79** | | | |
| Children & Families Comm. | | 64.14 | **64.14** | | | |
| Department of Education | | 79.71 | **79.71** | | | |
| OCFA | 60.44 | 65.39 | **62.91** | 64.61 | 63.89 | **64.25** |
| IHSS Public Authority | | 54.18 | **54.18** | | | |
| Public Law Library | | 71.28 | **71.28** | | | |
| OCERS | 68.69 | 69.44 | **69.07** | | | |
| Sanitation District | 66.36 | 67.58 | **66.97** | | | |
| Superior Court | 62.28 | 67.26 | **64.77** | | | |
| OCTA | 65.43 | 69.53 | **67.48** | | | |
| Rancho Santa Margarita | | 72.05 | **72.05** | | | |
| Vector Control District | | 71.95 | **71.95** | | | |
| Transportation Corridor Agency | | 68.54 | **68.54** | | | |
| UCI Medical Center | 77.35 | 78.64 | **77.99** | | | |
| UCI Campus | 65.62 | 71.89 | **68.76** | | | |
| **Average** | **66.04** | **69.17** | **68.32** | **63.40** | **63.99** | **63.69** |



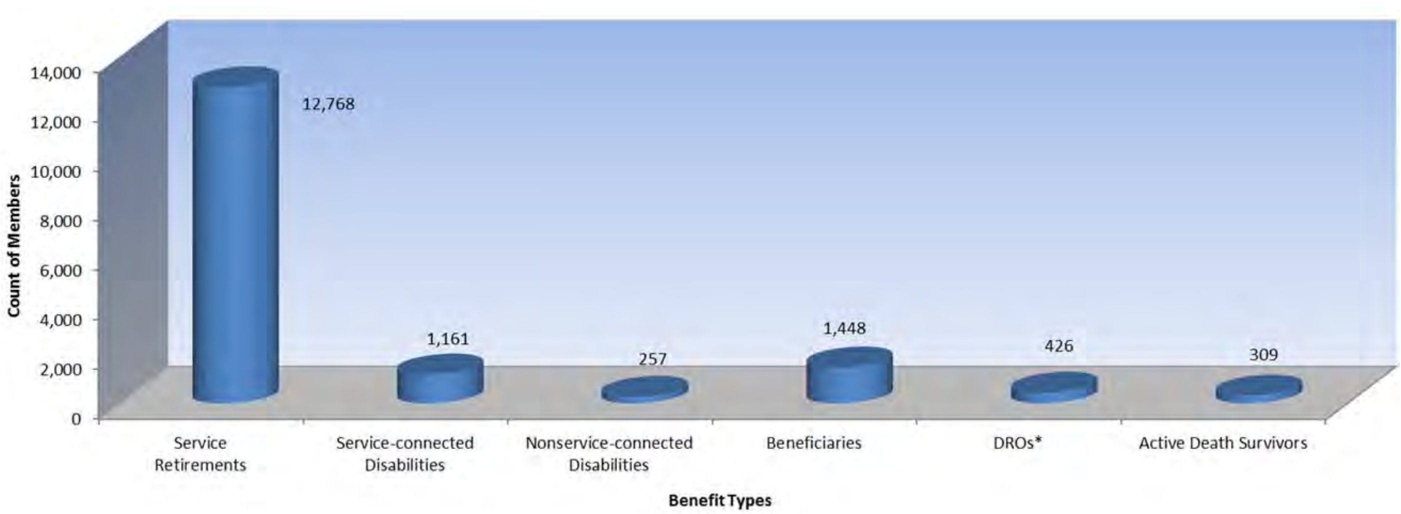

## Benefit Recipients by Employers and Plans
## As of December 31, 2016

| | A & B General | O & P 1.62% @ 65 | M & N 2% @ 55 | G & H 2.5% @ 55 | I & J 2.7% @ 55 | E & F Probation Safety 3% @ 50 | C & D Safety 2% @ 50 | E & F Safety 3% @ 50 | Q & R safety 3% @ 50 | T PEPRA - Compliant 1.62% @ 65 | U PEPRA 2.5% @ 67 | Total Payees |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capistrano Beach Sanitary District | 4 | | | | | | | | | | | **4** |
| City of San Juan Capistrano | 66 | | | | 59 | | | | | | | **125** |
| County of Orange | 5,467 | 2 | | | 4694 | 202 | 880 | 1,206 | 2 | 2 | | **12,455** |
| Cypress Recreation & Parks | 21 | | | | | | | | | | | **21** |
| Local Agency Formation Comm. | 1 | | | | 3 | | | | | | | **4** |
| Cemetery District | 7 | | 2 | | | | | | | | | **9** |
| Children & Families Comm. | 1 | | | | 9 | | | | | | | **10** |
| Department of Education | 20 | | | | | | | | | | | **20** |
| OCFA | 44 | | | | 117 | | 99 | 546 | | | | **806** |
| IHSS Public Authority | 1 | | | | | | | | | | | **1** |
| Public Law Library | 5 | | | 5 | | | | | | | | **10** |
| OCERS | 15 | | | | 23 | | | | | | | **38** |
| Sanitation District | 157 | | | 282 | | | | | | | | **439** |
| Superior Court | 138 | | | | 663 | | | | | | | **801** |
| OCTA | 1,285 | | | | | | | | | | | **1,285** |
| Vector Control District | 34 | | | | | | | | | | | **34** |
| Rancho Santa Margarita | | | | 1 | | | | | | | | **1** |
| Transportation Corridor Agency | 14 | | 28 | | | | | | | | 1 | **43** |
| UCI Medical Center | 247 | | | | | | | | | | | **247** |
| UCI Campus | 16 | | | | | | | | | | | **16** |
| **Total** | **7,543** | **2** | **30** | **288** | **5,568** | **202** | **979** | **1,752** | **2** | **2** | **1** | **16,369** |

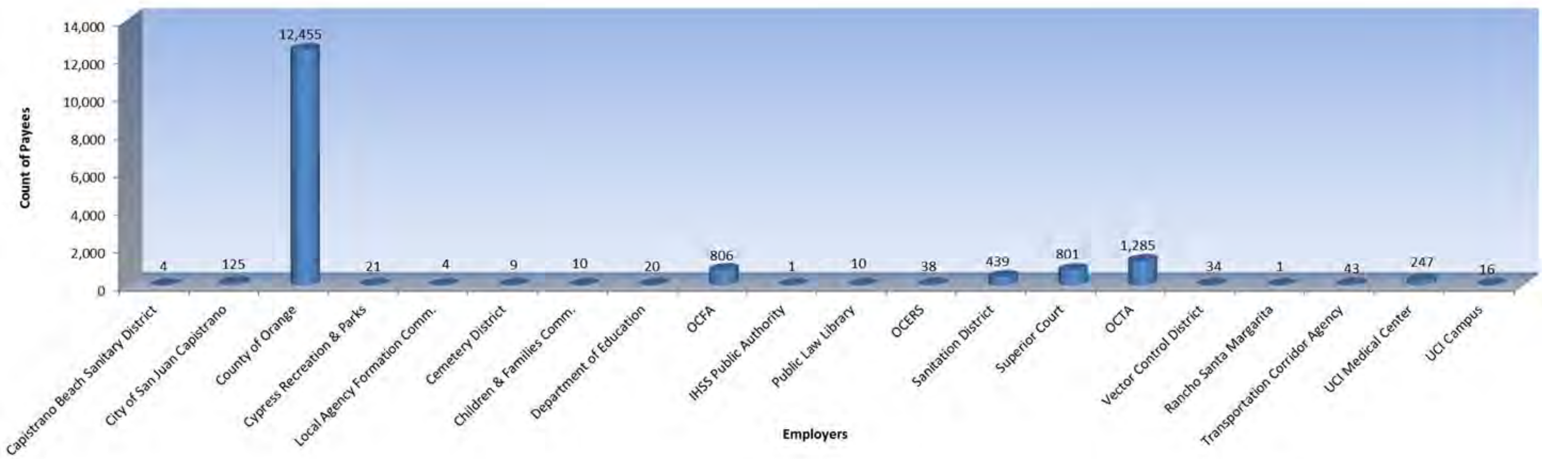
## Benefit Recipients by Benefit Types
## As of December 31, 2016

| Service Retirements | Service-connected Disabilities | Nonservice-connected Disabilities | Beneficiaries | DROs* | Active Death Survivors | Total Payees |
|---|---|---|---|---|---|---|
| 12,768 | 1,161 | 257 | 1,448 | 426 | 309 | 16,369 |

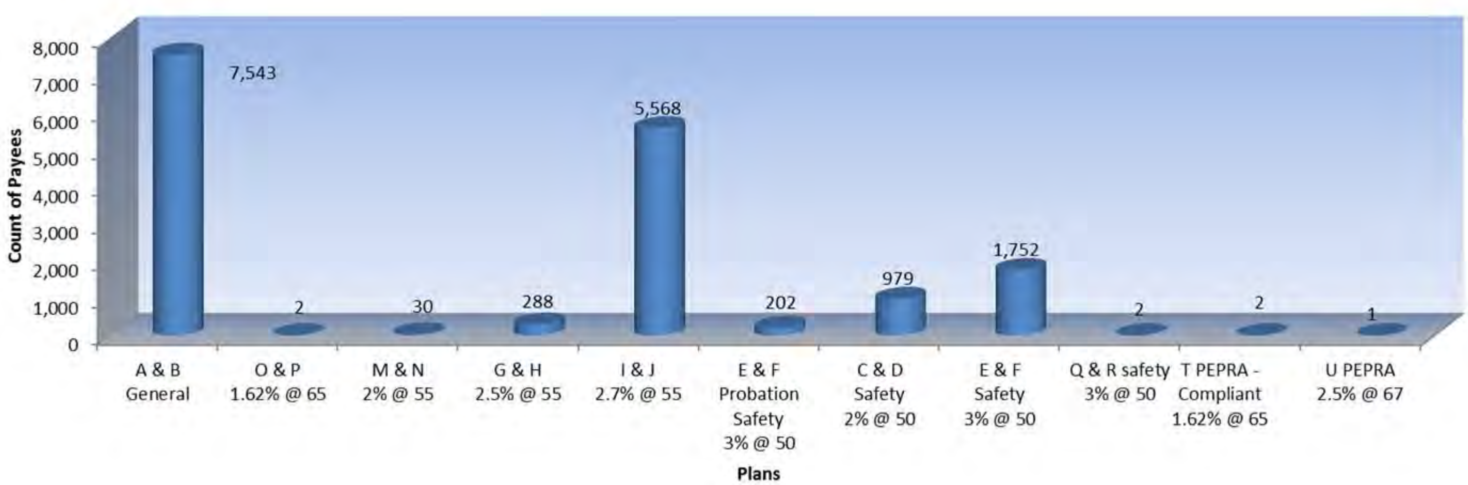
* DRO: A court order dividing a pension benefit due to a divorce or legal separation.



**Benefit Recipients by Employers**
**As of December 31, 2016**




**Benefit Recipients by Plans**
**As of December 31, 2016**



## Benefit Recipients by Payment Options
## December 31, 2016

| Monthly Benefit | Unmodified | Option1 | Option2 | Option3 | Option4 | DRO Benefit | Annuity Only | Total Payees |
|---|---|---|---|---|---|---|---|---|
| $001-500 | 715 | 1 | 29 | 2 | 2 | 71 | 8 | 828 |
| $501-1,000 | 1,463 | 1 | 48 | 1 | 1 | 88 | 0 | 1,602 |
| $1,001-1,500 | 1,704 | 1 | 44 | 3 | 1 | 86 | 0 | 1,839 |
| 1,501-2,000 | 1,454 | 1 | 34 | 5 | 2 | 55 | 0 | 1,551 |
| $2,001-2,500 | 1,528 | 0 | 27 | 1 | 4 | 44 | 0 | 1,604 |
| $2,501-3,000 | 1,311 | 0 | 17 | 4 | 2 | 34 | 0 | 1,368 |
| $3,001-3,500 | 996 | 1 | 18 | 2 | 3 | 22 | 0 | 1,042 |
| $3,501-4,000 | 893 | 1 | 11 | 3 | 7 | 9 | 0 | 924 |
| $4,001-4,500 | 766 | 0 | 16 | 4 | 3 | 5 | 0 | 794 |
| $4,501-5,000 | 690 | 0 | 22 | 0 | 4 | 7 | 0 | 723 |
| $5,001-5,500 | 550 | 0 | 10 | 1 | 3 | 3 | 0 | 567 |
| $5,501-6,000 | 511 | 1 | 7 | 0 | 5 | 2 | 0 | 526 |
| $6,001-6,500 | 426 | 0 | 8 | 0 | 5 | 0 | 0 | 439 |
| $6,501-7,000 | 401 | 1 | 4 | 0 | 2 | 0 | 0 | 408 |
| Over $7,000 | 2,120 | 1 | 20 | 2 | 11 | 0 | 0 | 2,154 |
| Total | **15,528** | **9** | **315** | **28** | **55** | **426** | **8** | **16,369** |
| Percentage | **94.87%** | **0.05%** | **1.92%** | **0.17%** | **0.34%** | **2.60%** | **0.05%** | **100%** |

**Definition of Payment Options**

Unmodified: This option provides the maximum lifetime retirement allowance with a 60 percent continuance to an eligible spouse, qualified domestic partner or eligible child for service retirement and 100 percent for service-connected disability retirement.

Option 1: Cash refund annuity. This option provides a reduced lifetime monthly allowance and a refund of any of the remaining member's contributions to the designated beneficiary.

Option 2: A 100 percent joint and survivor annuity. This option provides a reduced lifetime monthly allowance with the same monthly allowance to the designated beneficiary for the remainder of his or her lifetime.

Option 3: A 50 percent joint and survivor annuity. This option provides a reduced lifetime monthly allowance with 50 percent of the monthly allowance to the designated beneficiary for the remainder of his or her lifetime.

Option 4: This option allows multiple lifetime monthly allowances to designated beneficiaries and varying payment percentages if approved in advance by the Retirement Board.

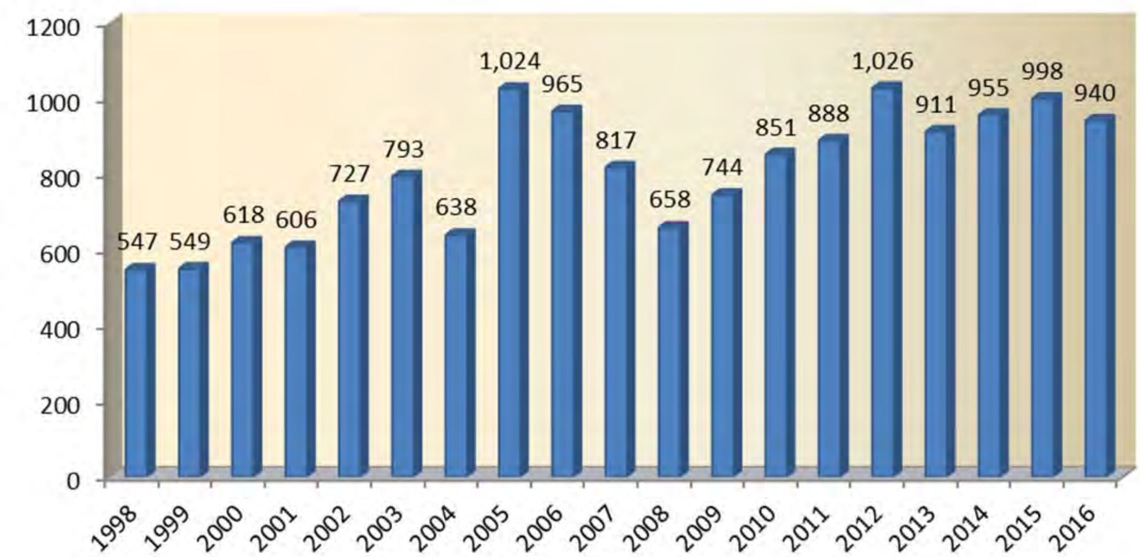
DRO Benefit: Domestic Relations Order Benefit. This is a court order allocating a portion of a retired member's pension to an ex-spouse or domestic partner.

Annuity Only: This payment option provides the actuarial equivalent of the member's accumulated contributions at the time of retirement and is used for very specific situations usually related to disability retirement payments and reciprocity.

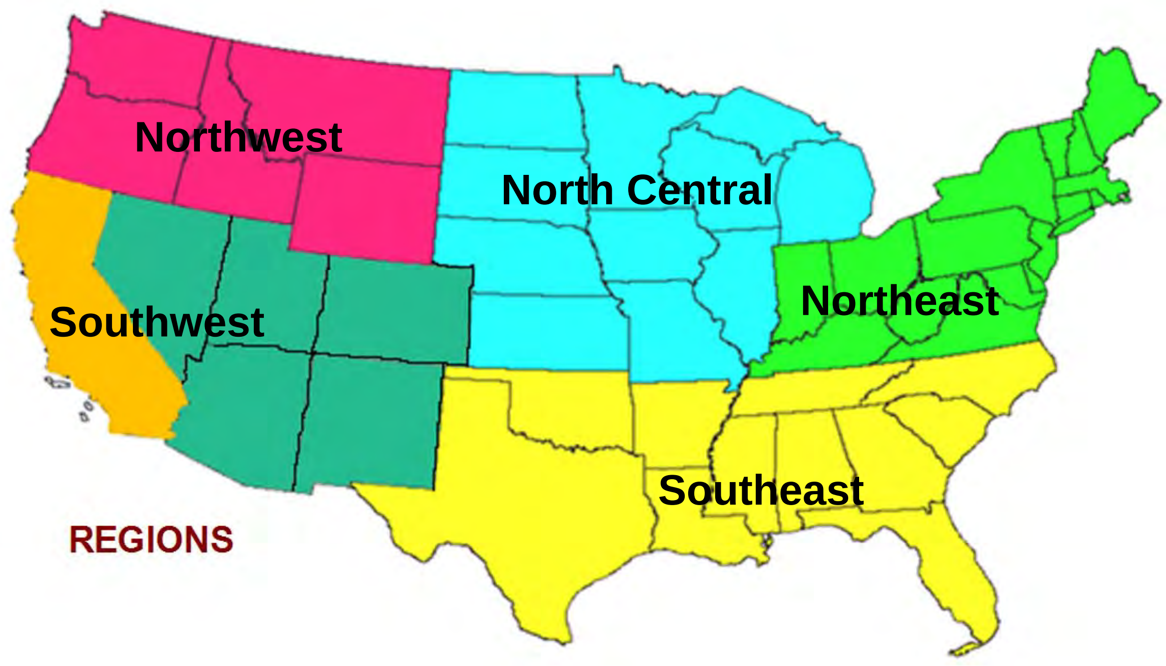
## Number of New Payees by Calendar Year

| 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|
| 547 | 549 | 618 | 606 | 727 | 793 | 638 | 1,024 | 965 |

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| 817 | 658 | 744 | 851 | 888 | 1,026 | 911 | 995 | 998 | 940 |



**Payees Residences by Region & State**
**As of December 31, 2016**




| | |
|---|---|
| Foreign Countries & US Territories | 26 |
| North Central | 240 |
| Northeast | 204 |
| Northwest | 701 |
| Southeast | 749 |
| Southwest | 14,231 |
| **Total Count of Payees** | **16,151 *** |

* Payees with multiple benefits are counted only once.

| | | |
|---|---|---|
| Total Annual Benefits Paid in California | $577,545,940 | 13,170 |
| Total Annual Benefits Paid in Orange County | $412,731,756 | 8,896 |

# Benefits

# Benefits as of December 31, 2016

**Average benefit for all General and Safety retirees and payees**

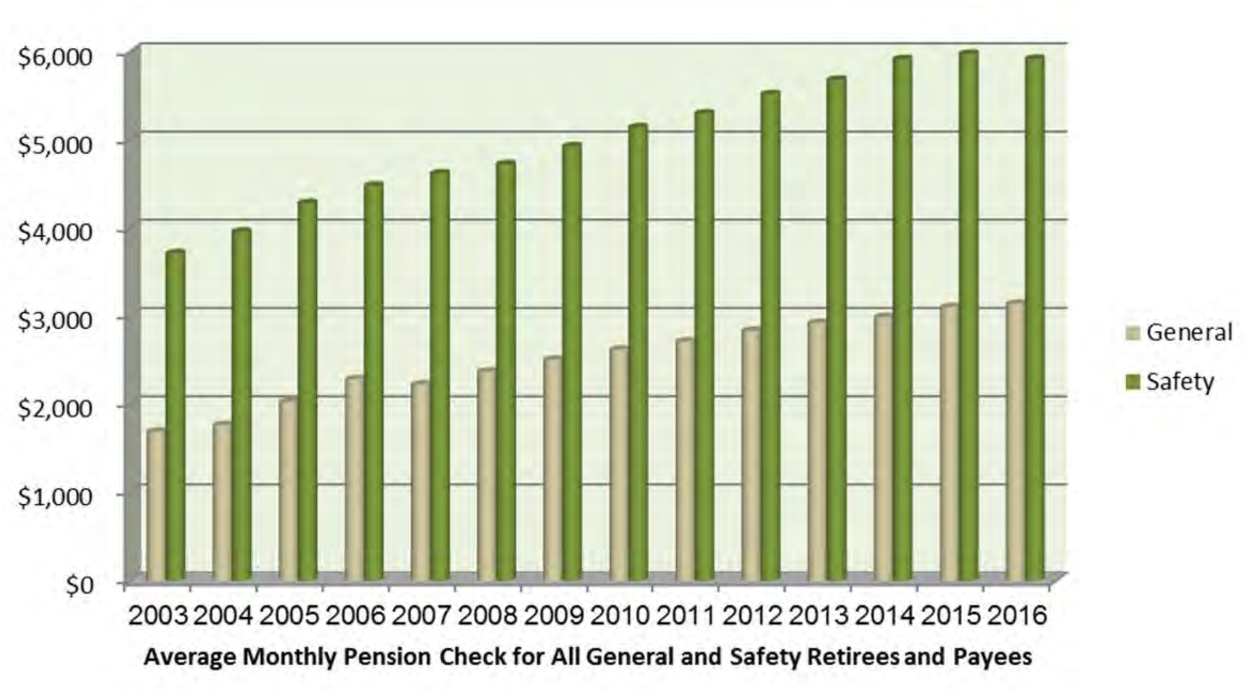
- For all General Member Retirees and other payees $3,142 monthly; $37,704 annually
- For all Safety Member Retirees and other payees $5,917 monthly; $71,004 annually

**Average benefit for all General and Safety Retirees combined**: $3,830 monthly; $44,396 annually

## Average monthly pension check for all General and Safety retirees and payees

| Years Ended December 31 | 2003 | 2004 | 2005 | 2006* | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General | $1,691 | $1,766 | $2,031 | $2,286 | $2,228 | $2,373 | $2,508 | $2,621 | $2,714 | $2,836 | $2,924 | $2,991 | $3,103 | $3,142 |
| Safety | $3,713 | $3,959 | $4,283 | $4,479 | $4,618 | $4,724 | $4,926 | $5,141 | $5,297 | $5,516 | $5,679 | $5,914 | $5,974 | $5,917 |
| Total Payees | 9,079 | 9,433 | 10,488 | 11,182 | 11,420 | 11,778 | 12,243 | 12,762 | 13,289 | 13,947 | 14,505 | 15,169 | 15,810 | 16,369 |

* Year 2006 includes health grant

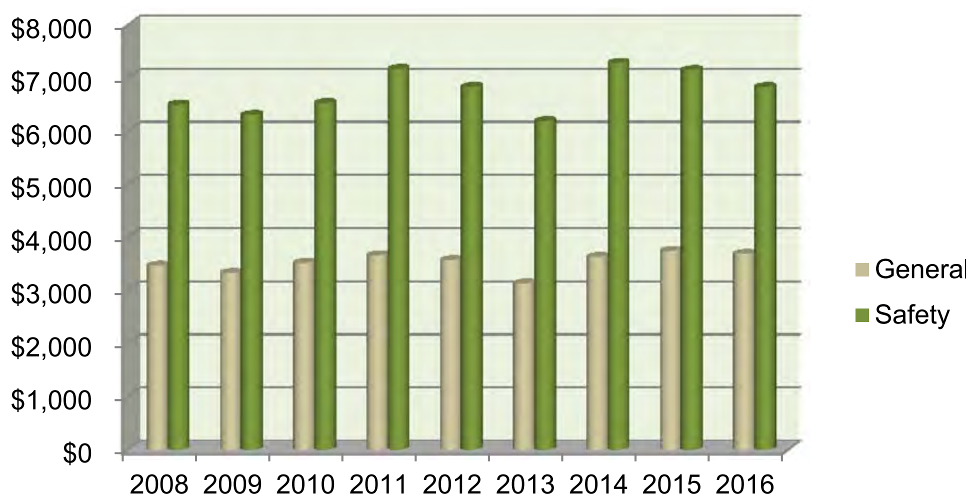


**Average benefit for General and Safety members with a service retirement (no disabilities) that retired in 2016**

- For General Members $3,689 monthly; $44,268 annually
- For Safety Members $6,827 monthly; $81,924 annually

## Average monthly pension check for those who retired in each calendar year with service retirements only

| Years Ended December 31 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| **General** | $3,466 | $3,329 | $3,518 | $3,660 | $3,570 | $3,132 | $3,632 | $3,744 | $3,689 |
| **Safety** | $6,497 | $6,302 | $6,528 | $7,169 | $6,832 | $6,187 | $7,281 | $7,146 | $6,827 |




**Average Monthly Pension Check for Those Who Retired in Each Calendar Year with Service Retirements Only**

### History of OCERS' Cost-of-Living Adjustments

OCERS annually adjusts the benefit allowances relative to the increase or decrease in the Consumer Price Index (CPI).* This adjustment, known as a Cost-of-Living Adjustment (COLA), is effective April 1st of each year. To determine the change in CPI, OCERS' actuary compares the Bureau of Labor Statistics' annual average CPI for all urban consumers for the Los Angeles-Riverside-Orange County area for each of the past two years and derives the percentage change between the two. The increase or decrease in the CPI is rounded to the nearest one-half of one percent. The maximum COLA of 3% shall be granted on every retirement allowance, optional death allowance, or annual death allowance payable to or on account of any member of the system.

For years in which the CPI exceeds 3%, the excess amount is banked and drawn from for future years when the CPI is less than 3%.

| Date Granted | Actual CPI Rate | CPI Rounded | Max COLA Rate | COLA Granted |
|---|---|---|---|---|
| 4/1/2016 | 0.91 | 1 | 3 | 1 |
| 4/1/2015 | 1.35 | 1.5 | 3 | 1.5 |
| 4/1/2014 | 1.08 | 1 | 3 | 1 |
| 4/1/2013 | 2.04 | 2 | 3 | 2 |
| 4/1/2012 | 2.67 | 2.5 | 3 | 2.5 |
| 4/1/2011 | 1.20 | 1 | 3 | 1 |
| 4/1/2010 | -0.80 | -1 | 3 | -1 |
| 4/1/2009 | 3.53 | 3.5 | 3 | 3 |
| 4/1/2008 | 3.30 | 3.5 | 3 | 3 |
| 4/1/2007 | 4.26 | 4.5 | 3 | 3 |
| 4/1/2006 | 4.45 | 4.5 | 3 | 3 |
| 4/1/2005 | 3.31 | 3.5 | 3 | 3 |
| 4/1/2004 | 2.63 | 2.5 | 3 | 2.5 |
| 4/1/2003 | 2.76 | 3 | 3 | 3 |
| 4/1/2002 | 3.32 | 3.5 | 3 | 3 |
| 4/1/2001 | 3.31 | 3.5 | 3 | 3 |
| 4/1/2000 | 2.34 | 2.5 | 3 | 2.5 |
| 4/1/1999 | 1.44 | 1.5 | 3 | 1.5 |
| 4/1/1998 | 1.58 | 1.5 | 3 | 1.5 |

* Per Government Code Section 318780.1

## Schedule of Average Monthly Pension Benefit Payments for Service Retirements by Years of Service

**2006 – 2016**

**Years of Service**

| Retirement Effective Dates | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30 & Over |
|---|---|---|---|---|---|---|---|
| PERIOD 1/1/06 –12/31/06 | | | | | | | |
| Average Monthly Pension Benefits | $448 | $788 | $1,608 | $2,389 | $3,368 | $4,898 | $6,112 |
| Average Monthly "Final Average Salary" | $3,770 | $4,031 | $4,952 | $5,198 | $5,668 | $6,474 | $6,789 |
| Number of Retired Members | 15 | 46 | 129 | 167 | 129 | 174 | 155 |
| PERIOD 1/1/07 –12/31/07 | | | | | | | |
| Average Monthly Pension Benefits | $368 | $817 | $1,593 | $2,407 | $3,366 | $5,626 | $6,401 |
| Average Monthly "Final Average Salary" | $2,213 | $4,206 | $5,065 | $5,239 | $5,714 | $7,219 | $7,223 |
| Number of Retired Members | 16 | 45 | 110 | 111 | 100 | 145 | 104 |
| PERIOD 1/1/08 –12/31/08 | | | | | | | |
| Average Monthly Pension Benefits | $321 | $876 | $1,784 | $2,451 | $3,793 | $5,323 | $7,687 |
| Average Monthly "Final Average Salary" | $2,539 | $4,166 | $5,512 | $5,330 | $6,484 | $6,864 | $8,424 |
| Number of Retired Members | 19 | 31 | 83 | 90 | 78 | 91 | 97 |
| PERIOD 1/1/09 –12/31/09 | | | | | | | |
| Average Monthly Pension Benefits | $381 | $950 | $1,821 | $2,716 | $3,711 | $5,852 | $7,467 |
| Average Monthly "Final Average Salary" | $3,766 | $4,228 | $5,564 | $6,006 | $6,417 | $7,669 | $8,378 |
| Number of Retired Members | 26 | 45 | 102 | 87 | 110 | 106 | 124 |
| PERIOD 1/1/10 –12/31/10 | | | | | | | |
| Average Monthly Pension Benefits | $587 | $986 | $1,855 | $2,929 | $4,046 | $5,922 | $6,856 |
| Average Monthly "Final Average Salary" | $3,666 | $4,800 | $5,537 | $6,291 | $6,962 | $7,764 | $7,741 |
| Number of Retired Members | 23 | 45 | 108 | 106 | 130 | 127 | 129 |
| PERIOD 1/1/11 –12/31/11 | | | | | | | |
| Average Monthly Pension Benefits | $678 | $1,057 | $1,689 | $3,054 | $4,257 | $5,910 | $6,766 |
| Average Monthly "Final Average Salary" | $4,843 | $5,825 | $5,475 | $6,497 | $7,314 | $7,874 | $7,650 |
| Number of Retired Members | 16 | 55 | 111 | 86 | 120 | 123 | 155 |
| PERIOD 1/1/12 –12/31/12 | | | | | | | |
| Average Monthly Pension Benefits | $647 | $1,142 | $1,701 | $2,957 | $4,058 | $5,802 | $7,015 |
| Average Monthly "Final Average Salary" | $5,988 | $5,398 | $5,672 | $6,347 | $6,759 | $7,702 | $7,750 |
| Number of Retired Members | 20 | 71 | 128 | 88 | 187 | 145 | 172 |
| PERIOD 1/1/13 –12/31/13 | | | | | | | |
| Average Monthly Pension Benefits | $435 | $1,166 | $2,039 | $2,946 | $3,794 | $6,409 | $7,732 |
| Average Monthly "Final Average Salary" | $8,199 | $6,347 | $6,458 | $6,492 | $6,431 | $8,432 | $8,482 |
| Number of Retired Members | 29 | 55 | 139 | 82 | 161 | 147 | 131 |
| PERIOD 1/1/14 –12/31/14 | | | | | | | |
| Average Monthly Pension Benefits | $421 | $1,152 | $1,925 | $3,188 | $4,117 | $6,444 | $6,719 |
| Average Monthly "Final Average Salary" | $8,176 | $6,955 | $6,301 | $6,961 | $7,003 | $8,463 | $7,349 |
| Number of Retired Members | 23 | 45 | 146 | 96 | 143 | 192 | 138 |
| PERIOD 1/1/15 –12/31/15 | | | | | | | |
| Average Monthly Pension Benefits | $582 | $1,263 | $1,755 | $2,850 | $3,895 | $5,679 | $7,235 |
| Average Monthly "Final Average Salary" | $8,802 | $6,889 | $5,970 | $6,673 | $6,800 | $7,893 | $8,352 |
| Number of Retired Members | 22 | 63 | 128 | 119 | 110 | 200 | 182 |
| PERIOD 1/1/16 –12/31/16 | | | | | | | |
| Average Monthly Pension Benefits | $427 | $1,244 | $2,135 | $2,886 | $4,272 | $5,549 | $6,782 |
| Average Monthly "Final Average Salary" | $8,298 | $6,907 | $6,911 | $6,580 | $7,383 | $7,651 | $7,762 |
| Number of Retired Members | 24 | 56 | 121 | 120 | 113 | 195 | 163 |

# Schedule of Median Monthly Pension Benefit Payments for Service Retirements by Years of Service

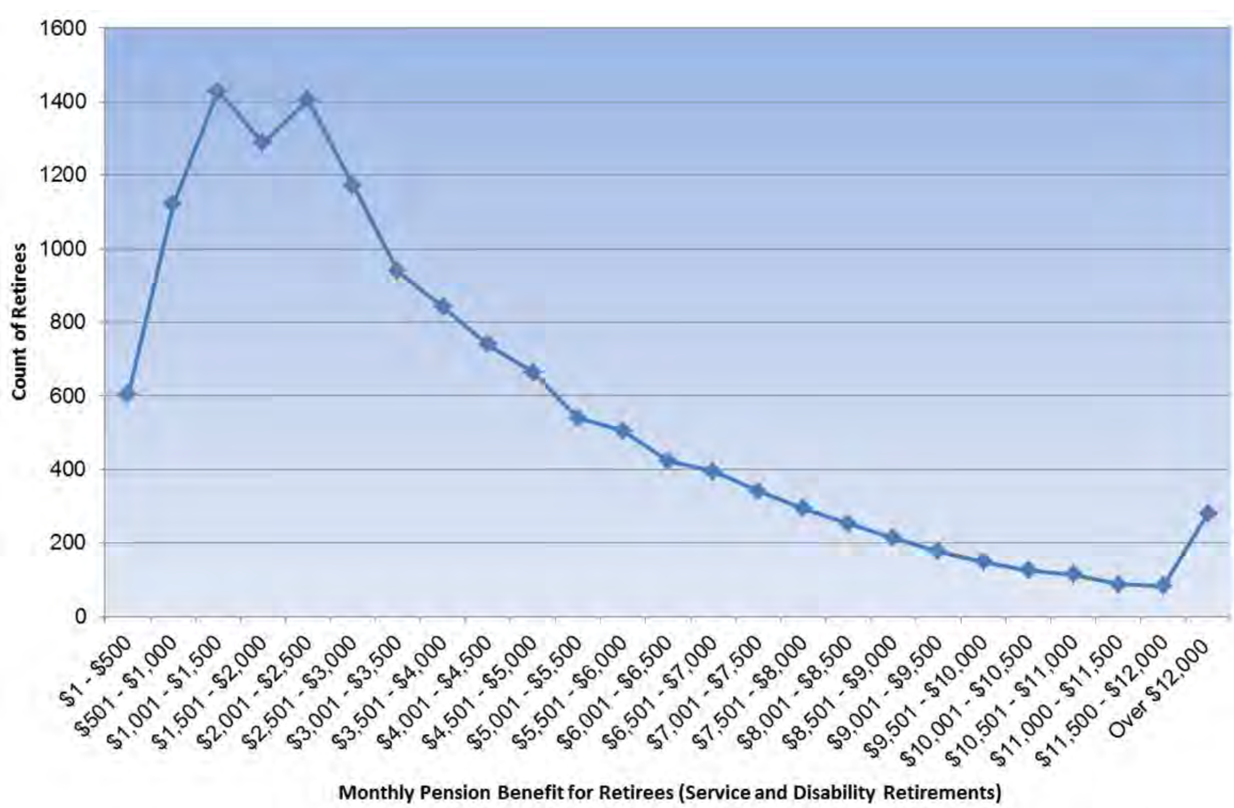
## 2010 – 2016

### Years of Service

| Retirement Effective Dates | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30 & Over |
|---|---|---|---|---|---|---|---|
| PERIOD 1/1/10 –12/31/10 | | | | | | | |
| Median Monthly Pension Benefits | $590 | $887 | $1,610 | $2,438 | $3,721 | $5,396 | $6,501 |
| Median "Final Average Salary" | $2,109 | $3,750 | $4,688 | $5,638 | $6,826 | $7,152 | $7,451 |
| Number of Retired Members | 23 | 45 | 108 | 106 | 130 | 127 | 129 |
| PERIOD 1/1/11 –12/31/11 | | | | | | | |
| Median Monthly Pension Benefits | $557 | $889 | $1,456 | $2,567 | $3,994 | $5,762 | $5,691 |
| Median "Final Average Salary" | $2,825 | $4,698 | $4,987 | $5,501 | $6,856 | $7,807 | $6,409 |
| Number of Retired Members | 16 | 55 | 111 | 86 | 120 | 123 | 155 |
| PERIOD 1/1/12 –12/31/12 | | | | | | | |
| Median Monthly Pension Benefits | $542 | $992 | $1,427 | $2,568 | $3,659 | $5,830 | $5,801 |
| Median "Final Average Salary" | $3,431 | $4,742 | $4,730 | $5,747 | $6,166 | $7,783 | $6,831 |
| Number of Retired Members | 20 | 71 | 128 | 88 | 187 | 145 | 172 |
| PERIOD 1/1/13 –12/31/13 | | | | | | | |
| Median Monthly Pension Benefits | $280 | $989 | $1,767 | $2,545 | $3,225 | $6,246 | $6,570 |
| Median "Final Average Salary" | $6,334 | $5,582 | $5,783 | $5,959 | $7,036 | $8,477 | $7,742 |
| Number of Retired Members | 29 | 55 | 139 | 82 | 161 | 147 | 131 |
| PERIOD 1/1/14 –12/31/14 | | | | | | | |
| Median Monthly Pension Benefits | $289 | $830 | $1,448 | $2,627 | $3,721 | $6,451 | $5,720 |
| Median "Final Average Salary" | $8,646 | $4,876 | $5,188 | $5,990 | $6,265 | $8,561 | $6,319 |
| Number of Retired Members | 23 | 45 | 146 | 96 | 143 | 192 | 138 |
| PERIOD 1/1/15 –12/31/15 | | | | | | | |
| Median Monthly Pension Benefits | $426 | $914 | $1,640 | $2,514 | $3,511 | $5,241 | $5,965 |
| Median "Final Average Salary" | $7,350 | $4,979 | $4,926 | $5,999 | $5,924 | $7,379 | $6,869 |
| Number of Retired Members | 22 | 63 | 128 | 119 | 110 | 200 | 182 |
| PERIOD 1/1/16 –12/31/16 | | | | | | | |
| Median Monthly Pension Benefits | $339 | $980 | $1,878 | $2,563 | $3,933 | $5,080 | $6,198 |
| Median "Final Average Salary" | $9,412 | $5,885 | $6,015 | $5,707 | $6,714 | $7,314 | $7,020 |
| Number of Retired Members | 24 | 56 | 121 | 120 | 113 | 195 | 163 |

**Schedule of Monthly Pension Benefit for Retirees (Service and Disability Retirements)**
**As of December 31, 2016**

| Monthly Benefit | Number of retirees |
|---|---|
| $1 – 500 | 604 |
| $501 – 1,000 | 1,120 |
| $1,001 – 1,500 | 1,429 |
| $1,501 – 2,000 | 1,288 |
| $2,001 – 2,500 | 1,404 |
| $2,501 – 3,000 | 1,173 |
| $3,001 – 3,500 | 939 |
| $3,501 – 4,000 | 842 |
| $4,001 – 4,500 | 740 |
| $4,501 – 5,000 | 664 |
| $5,001 – 5,500 | 539 |
| $5,501 – 6,000 | 506 |
| $6,001 – 6,500 | 423 |
| $6,501 – 7,000 | 394 |
| $7,001 – 7,500 | 341 |
| $7,501 – 8,000 | 294 |
| $8,001 – 8,500 | 252 |
| $8,501 – 9,000 | 214 |
| $9,001 – 9,500 | 177 |
| $9,501 – 10,000 | 149 |
| $10,001 – 10,500 | 126 |
| $10,501 – 11,000 | 115 |
| $11,001 – 11,500 | 88 |
| $11,501 – 12,000 | 84 |
| Over $12,000 | 281 |
| **Total** | 14,186 |



# The OCERS Fund

## *Funding Sources*

**Funding Sources for Benefits**
**(OCERS' net additions for the period 1998 – 2016)**


An often stated error with regard to public pension retirement funds is that they are funded solely from the taxpayers' back pocket.

That is not true.

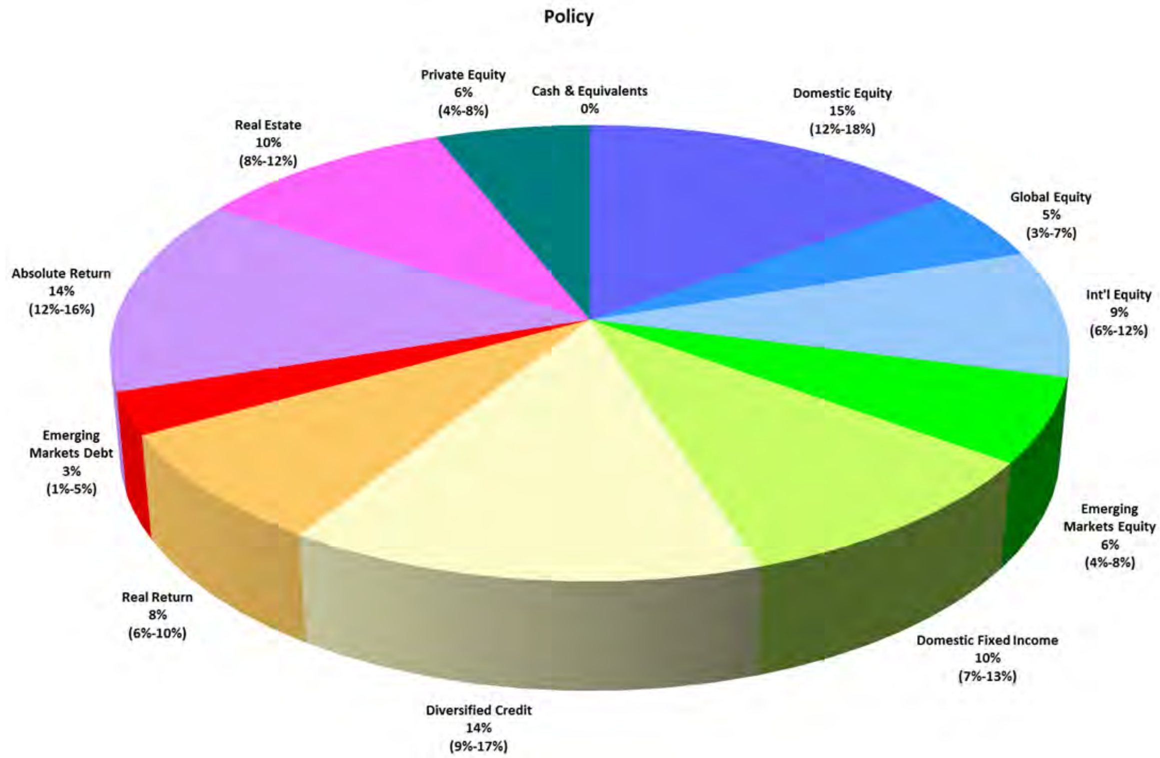
We have illustrated here a dollar going out the door in a benefit payment from OCERS to one of our retirees. What were the source funds for that dollar?

The first portion of the dollar, at 50 cents, is purely earnings from the OCERS investment portfolio. The OCERS Board of Trustees takes the contributions OCERS receives and invests those contributions on behalf of our 43,000 members. OCERS grows those "seed" contributions through careful investments to an amount likely larger than an individual employee might have done solely on his or her own.

The next largest portion of that benefit dollar, at 34 cents, comes from employer contributions, such as the County of Orange, the City of San Juan Capistrano, the Public Law Library, and other public employers within Orange County. You might ask if those aren't local taxpayer dollars then, but the answer would be no. Many of those 34 cents do come from Orange County taxpayers, without a doubt, but some might just as well be sourced from various federal government grant programs. Interestingly, as noted in the following paragraph, that figure of 34 cents paid by the employer or other plan sponsor would be even larger were it not for the fact that some OCERS employees are assisting in paying the employer obligation. The point is, appearances can be deceiving.

The final portion of the benefit dollar in the amount of 16 cents is taken directly from the regular paychecks of OCERS' members. Despite what is sometimes reported in the press, the hard working employees of the County of Orange and our other plan sponsors are contributing their own dollars to their retirement plan. In addition, as noted above, several employee groups pay a portion of the employer contribution out of their own pockets. The County of Orange several years ago contracted with labor groups to have the employees pay a portion of the employer contribution in what is commonly termed a "reverse pick up."

# *Asset Allocation Policy for 2016*




**Absolute Return –** Absolute return strategies are concerned with the return of a particular asset and do not compare it to any other measure or benchmark. Absolute return investments include investments in equities, bonds, currencies, inflation linked bonds and emerging markets and use techniques such as short selling, arbitrage, leverage and the use of derivatives and unconventional assets. It is more commonly referred to as a hedge fund.

**Diversified Credit –** The fixed income-related strategies are diversified by region, by credit quality, and by sources of risk. The general shared characteristics of these strategies are a degree of illiquidity, and a focus on current yield as a principal source of expected return.

**Equity –** A stock or any other security representing an ownership interest. (Domestic – U.S.; Global – U.S. and developed countries outside the U.S.; International – developed countries outside of the U.S.; Emerging Markets – countries that are less economically developed).

**Fixed Income –** A debt investment in which an investor loans money to an entity (corporate or governmental) that borrows the funds for a defined period of time at a fixed interest rate.

**Real Return –** Investments whose returns adjust for changes in prices due to inflation and therefore act as an inflation hedge.

**Real Estate –** Investments relating to land and anything permanently fixed to the land. Real estate investments consist of both private holdings and public securities. The real estate investments include equity investments and debt-oriented investments.

**Private Equity –** Private equity includes investments in venture capital, buyouts, secondaries and special situations including distressed debt. These assets are illiquid and valuations are not marked to market on a daily basis. Valuations for private equity investments are based on estimates of fair value in accordance with industry standards.

# Fund Performance

OCERS' investment program returned 8.52% net of fees in 2016. As of year-end 2016, the total fund market value was $13.24 billion, an increase of $1.15 billion from a year ago. The one-year return underperformed the policy index of 8.93%, but exceeded the 7.25% assumption rate. The three, five, seven and ten year returns as of December 31, 2016 lagged the actuarial assumption rate, challenged by a period of low interest rates and sluggish economic growth in all markets.

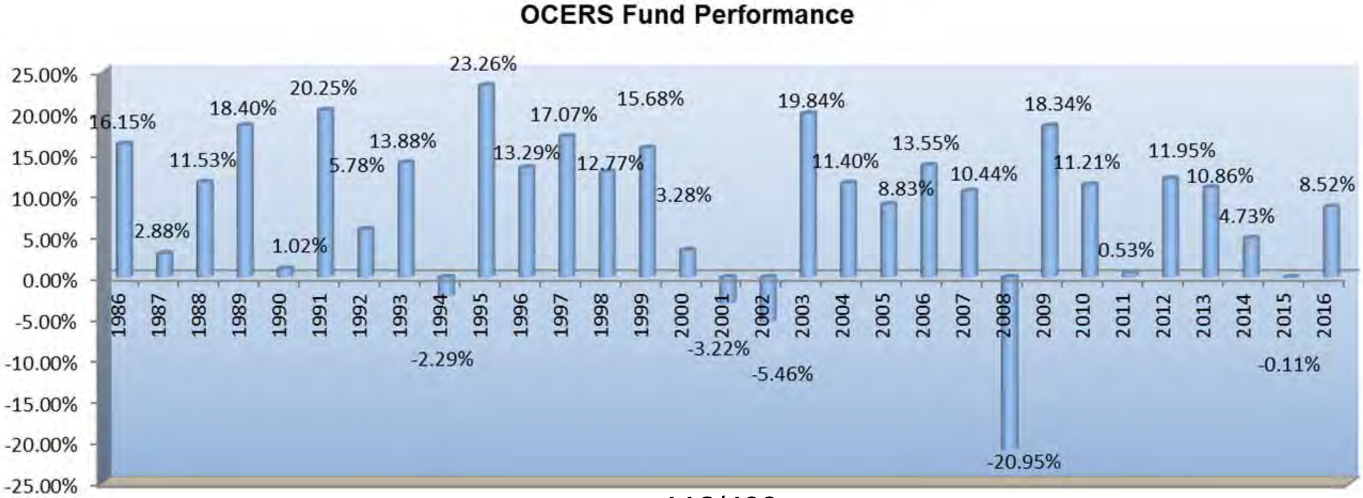
During the year, the portfolio benefitted from strong returns in U.S. and emerging markets equities, high yield bonds, diversified credit, emerging market debt, real return, and real estate. The U.S. equity market as represented by the S&P 500 index was up 11.96%, while the MSCI World index (a proxy for developed international equity markets) posted a 7.51% gain. High yield markets saw a sharp rebound in 2016 as energy prices stabilized. The fixed income market experienced some volatility in the latter half of 2016 as the Federal Reserve approached its second interest rate hike in nearly a decade, while more risky assets, such as high yield bonds continued to rally post the presidential election. The investment program remains well diversified across many asset classes.

**OCERS' Fund Performance by Calendar Years 1986 – 2016**

| As of Dec. 31 | Return | Assumed Rate of Return |
|---|---|---|
| **1986** | 16.15% | 7.25% |
| **1987** | 2.88% | 7.25% |
| **1988** | 11.53% | 7.25% |
| **1989** | 18.40% | 7.50% |
| **1990** | 1.02% | 7.50% |
| **1991** | 20.25% | 8.00% |
| **1992** | 5.78% | 8.00% |
| **1993** | 13.88% | 8.00% |
| **1994** | -2.29% | 8.00% |
| **1995** | 23.26% | 8.00% |
| **1996** | 13.29% | 8.00% |
| **1997** | 17.07% | 8.00% |
| **1998** | 12.77% | 8.00% |
| **1999** | 15.68% | 8.00% |
| **2000** | 3.28% | 8.00% |
| **2001** | -3.22% | 8.00% |

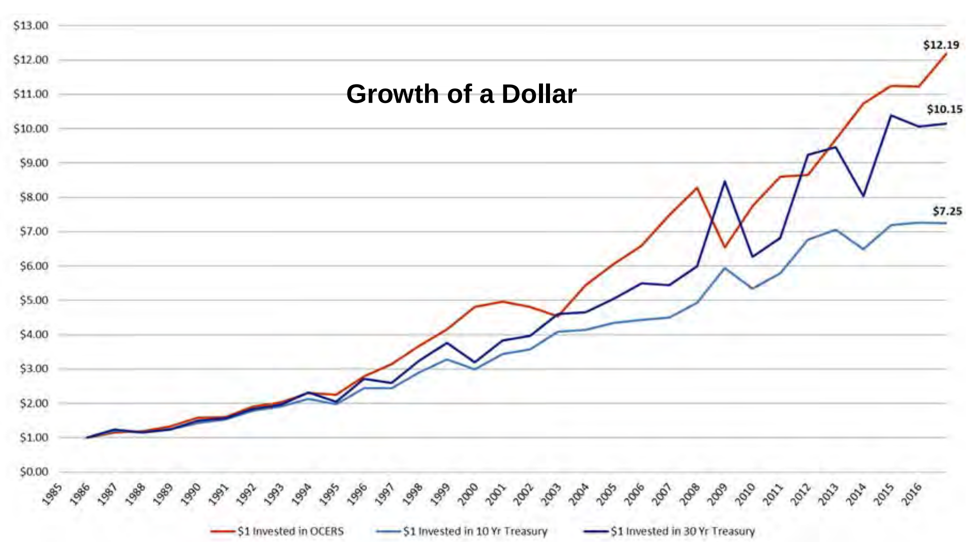
| As of Dec. 31 | Return | Assumed Rate of Return |
|---|---|---|
| **2002** | -5.46% | 8.00% |
| **2003** | 19.84% | 7.50% |
| **2004** | 11.40% | 7.75% |
| **2005** | 8.83% | 7.75% |
| **2006** | 13.55% | 7.75% |
| **2007*** | 10.44% | 7.75% |
| **2008** | -20.95% | 7.75% |
| **2009** | 18.34% | 7.75% |
| **2010** | 11.21% | 7.75% |
| **2011** | .53% | 7.75% |
| **2012** | 11.95% | 7.25% |
| **2013** | 10.86% | 7.25% |
| **2014** | 4.73% | 7.25% |
| **2015** | -0.11% | 7.25% |
| **2016** | 8.52% | 7.25% |

***As of 2007, returns are presented net of fees.**



**Growth of a Dollar in OCERS Compared to Treasury Bonds**
**1985 – 2016**

| | $1 Invested in OCERS | $1 Invested in 10 Yr Treasury | $1 Invested in 30 Yr Treasury |
|---|---|---|---|
| 1985 | $1.00 | $1.00 | $1.00 |
| 1986 | $1.16 | $1.20 | $1.25 |
| 1987 | $1.19 | $1.16 | $1.15 |
| 1988 | $1.33 | $1.23 | $1.24 |
| 1989 | $1.58 | $1.44 | $1.49 |
| 1990 | $1.59 | $1.53 | $1.56 |
| 1991 | $1.91 | $1.80 | $1.84 |
| 1992 | $2.03 | $1.91 | $1.96 |
| 1993 | $2.31 | $2.14 | $2.32 |
| 1994 | $2.25 | $1.97 | $2.04 |
| 1995 | $2.78 | $2.44 | $2.72 |
| 1996 | $3.15 | $2.44 | $2.60 |
| 1997 | $3.68 | $2.90 | $3.24 |
| 1998 | $4.16 | $3.27 | $3.76 |
| 1999 | $4.81 | $3.00 | $3.20 |
| 2000 | $4.96 | $3.43 | $3.84 |
| 2001 | $4.80 | $3.57 | $3.97 |
| 2002 | $4.54 | $4.09 | $4.61 |
| 2003 | $5.44 | $4.15 | $4.65 |
| 2004 | $6.06 | $4.35 | $5.06 |
| 2005 | $6.60 | $4.44 | $5.50 |
| 2006 | $7.49 | $4.50 | $5.44 |
| 2007 | $8.30 | $4.94 | $5.99 |
| 2008 | $6.58 | $5.94 | $8.47 |
| 2009 | $7.80 | $5.35 | $6.27 |
| 2010 | $8.71 | $5.78 | $6.82 |
| 2011 | $8.77 | $6.76 | $9.24 |
| 2012 | $9.85 | $7.05 | $9.46 |
| 2013 | $10.95 | $6.50 | $8.04 |
| 2014 | $11.49 | $7.19 | $10.40 |
| 2015 | $11.50 | $7.26 | $10.07 |
| 2016 | $12.19 | $7.25 | $10.15 |



# Revenue

## Member and Employer Contributions and Investment Income and Losses to Pension Trust

| Year | Member Contributions | Employer Contributions (Cash Payments Only to Pension Trust) | Employer Contributions from POB Funds* | Investment Income (Losses) |
|---|---|---|---|---|
| 1998 | $50,557,000 | $17,977,000 | $42,020,000 | $493,491,000 |
| 1999 | $55,693,000 | $17,591,000 | $47,129,000 | $685,178,000 |
| 2000 | $61,179,000 | $15,561,000 | $48,555,000 | $45,284,000 |
| 2001 | $68,635,000 | $12,060,000 | $41,319,000 | ($149,858,000) |
| 2002 | $77,917,000 | $13,289,000 | $65,180,000 | ($269,188,000) |
| 2003 | $81,581,000 | $124,243,000 | $26,209,000 | $789,086,000 |
| 2004 | $81,931,000 | $194,430,000 | $3,579,000 | $569,000,000 |
| 2005 | $107,544,000 | $226,130,000 | $9,675,000 | $461,980,000 |
| 2006 | $137,582,000 | $277,368,000 | $11,000,000 | $830,200,000 |
| 2007 | $159,476,000 | $326,736,000 | $11,000,000 | $784,961,000 |
| 2008 | $172,291,000 | $360,209,000 | $12,600,000 | ($1,596,776,000) |
| 2009 | $171,928,000 | $338,387,000 | $34,900,000 | $1,064,855,000 |
| 2010 | $177,929,000 | $372,437,000 | $11,000,000 | $888,542,000 |
| 2011 | $183,820,000 | $387,585,000 | $11,000,000 | $50,456,000 |
| 2012 | $191,215,000 | $406,805,000 | $5,500,000 | $1,004,770,000 |
| 2013 | $209,301,000 | $427,095,000 | $5,000,000 | $1,155,967,000 |
| 2014 | $232,656,000 | $625,520,000 | $5,000,000 | $499,195,000 |
| 2015 | $249,271,000 | $571,298,000 | $0 | ($10,873,000) |
| 2016 | $258,297,000 | $567,196,000 | $0 | $1,061,243,000 |

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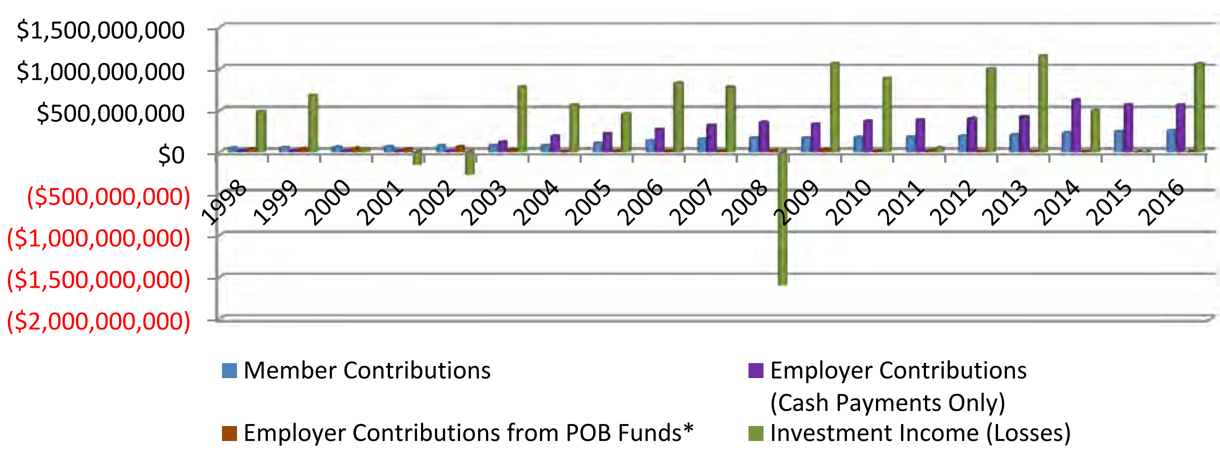



* In September 1994, the County of Orange issued $320 million in Pension Obligation Bonds (POB's) of which $318.3 million in proceeds were paid to OCERS to fund the County's portion of the Unfunded Actuarial Accrued Liability (UAAL). For accounting purposes, OCERS maintains the proceeds for the POB's in the County Investment Account. OCERS and the County of Orange, a single participating district, entered into an agreement which provided an offsetting credit based upon an amount actuarially determined to deplete the County Investment Account over the then remaining UAAL amortization period. The County determines annually how the account will be applied to contribution requirements.

# Fund Status

OCERS' independent actuary, Segal Consulting, performed an actuarial valuation as of December 31, 2016 and determined that OCERS' funding ratio of actuarial assets to the actuarial accrued liability is 73.06%, which increased from the prior's year's funded status of 71.72%.

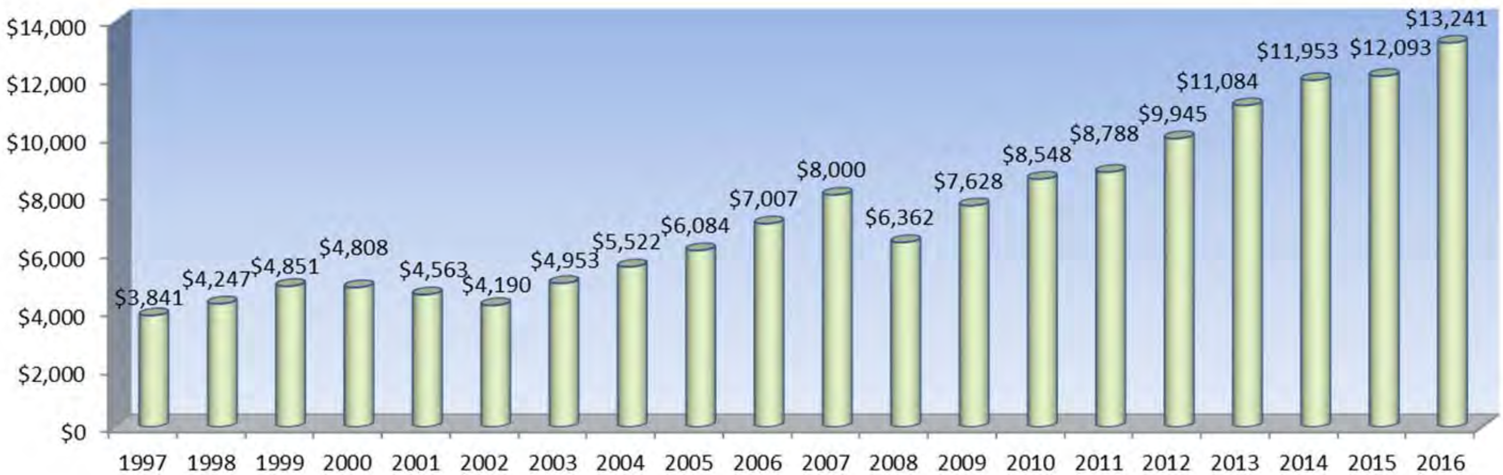
**OCERS' Funded Status by Calendar Years 1986 – 2016**
**(Dollars in thousands)**

| Actuarial Valuation Date Dec. 31 | Valuation Value of Assets (VVA) (a) | Actuarial Accrued Liability (AAL) (b) | Total Unfunded Actuarial Accrued Liability (UAAL) (b) - (a) | Funded Ratio (a) / (b) | Investment Returns |
|---|---|---|---|---|---|
| 2016 | $13,102,978 | $17,933,461 | $4,830,483 | 73.06% | 8.52% |
| 2015 | $12,228,009 | $17,050,357 | $4,822,348 | 71.72% | -0.11% |
| 2014 | $11,449,911 | $16,413,124 | $4,963,213 | 69.76% | 4.73% |
| 2013 | $10,417,125 | $15,785,042 | $5,367,917 | 65.99% | 10.86% |
| 2012 | $9,469,208 | $15,144,888 | $5,675,680 | 62.52% | 11.95% |
| 2011 | $9,064,355 | $13,522,978 | $4,458,623 | 67.03% | 0.53% |
| 2010 | $8,672,592 | $12,425,873 | $3,753,281 | 69.79% | 11.21% |
| 2009 | $8,154,687 | $11,858,578 | $3,703,891 | 68.77% | 18.34% |
| 2008 | $7,748,380 | $10,860,715 | $3,112,335 | 71.34% | -20.95% |
| 2007* | $7,288,900 | $9,838,686 | $2,549,786 | 74.08% | 10.44% |
| 2006 | $6,466,085 | $8,765,045 | $2,298,960 | 73.77% | 13.55% |
| 2005 | $5,786,617 | $8,089,627 | $2,303,010 | 71.53% | 8.83% |
| 2004 | $5,245,821 | $7,403,972 | $2,158,151 | 70.85% | 11.40% |
| 2003 | $4,790,099 | $6,099,433 | $1,309,334 | 78.53% | 19.84% |
| 2002 | $4,695,675 | $5,673,754 | $978,079 | 82.76% | -5.46% |
| 2001 | $4,586,844 | $4,843,899 | $257,055 | 94.69% | -3.22% |
| 2000 | $4,497,362 | $4,335,025 | ($162,337) | 103.74% | 3.28% |
| 1999 | $3,931,744 | $4,017,279 | $85,535 | 97.87% | 15.70% |
| 1998 | $3,504,708 | $3,682,686 | $177,978 | 95.17% | 12.77% |
| 1997 | $3,128,132 | $3,332,967 | $204,835 | 93.85% | 17.07% |
| 1996 | $2,675,632 | $2,851,894 | $176,262 | 93.82% | 13.29% |
| 1995 | $2,434,406 | $2,633,884 | $199,478 | 92.43% | 23.26% |
| 1994 | $2,177,673 | $2,550,059 | $372,386 | 85.40% | -2.29% |
| 1993 | $2,024,447 | $2,305,019 | $280,572 | 87.83% | 13.88% |
| 1992 | $1,807,319 | $2,140,081 | $332,763 | 84.45% | 5.78% |
| 1991 | $1,567,131 | $1,763,894 | $196,763 | 88.84% | 20.25% |
| 1990 | $1,297,575 | $1,840,915 | $543,340 | 70.49% | 1.02% |
| 1989 | $1,136,210 | $1,651,988 | $515,778 | 68.78% | 18.40% |
| 1988 | $985,030 | $1,453,858 | $468,828 | 67.75% | 11.53% |
| 1987 | $821,884 | $1,343,982 | $522,098 | 61.16% | 2.88% |
| 1986 | $713,506 | $1,220,915 | $507,409 | 58.44% | 16.15% |

*As of 2007, returns are presented net of fees

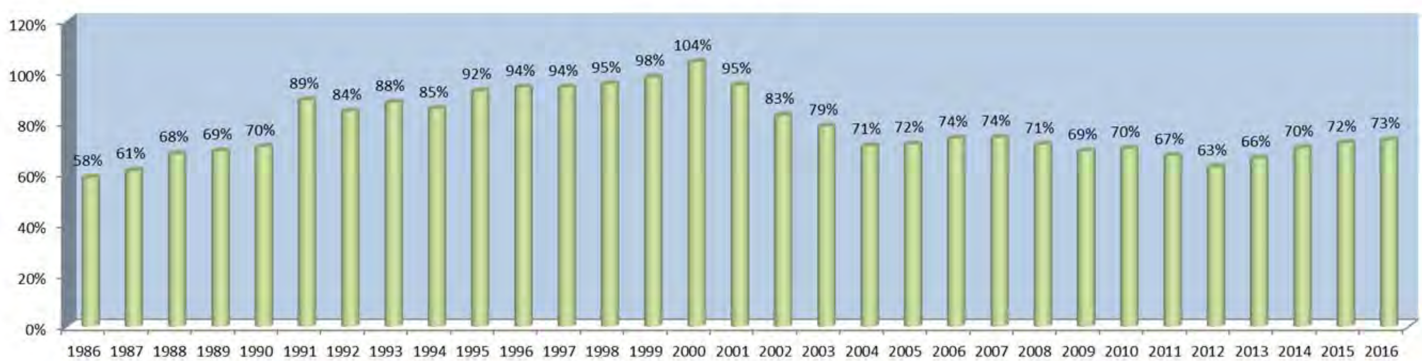
## OCERS by the Numbers

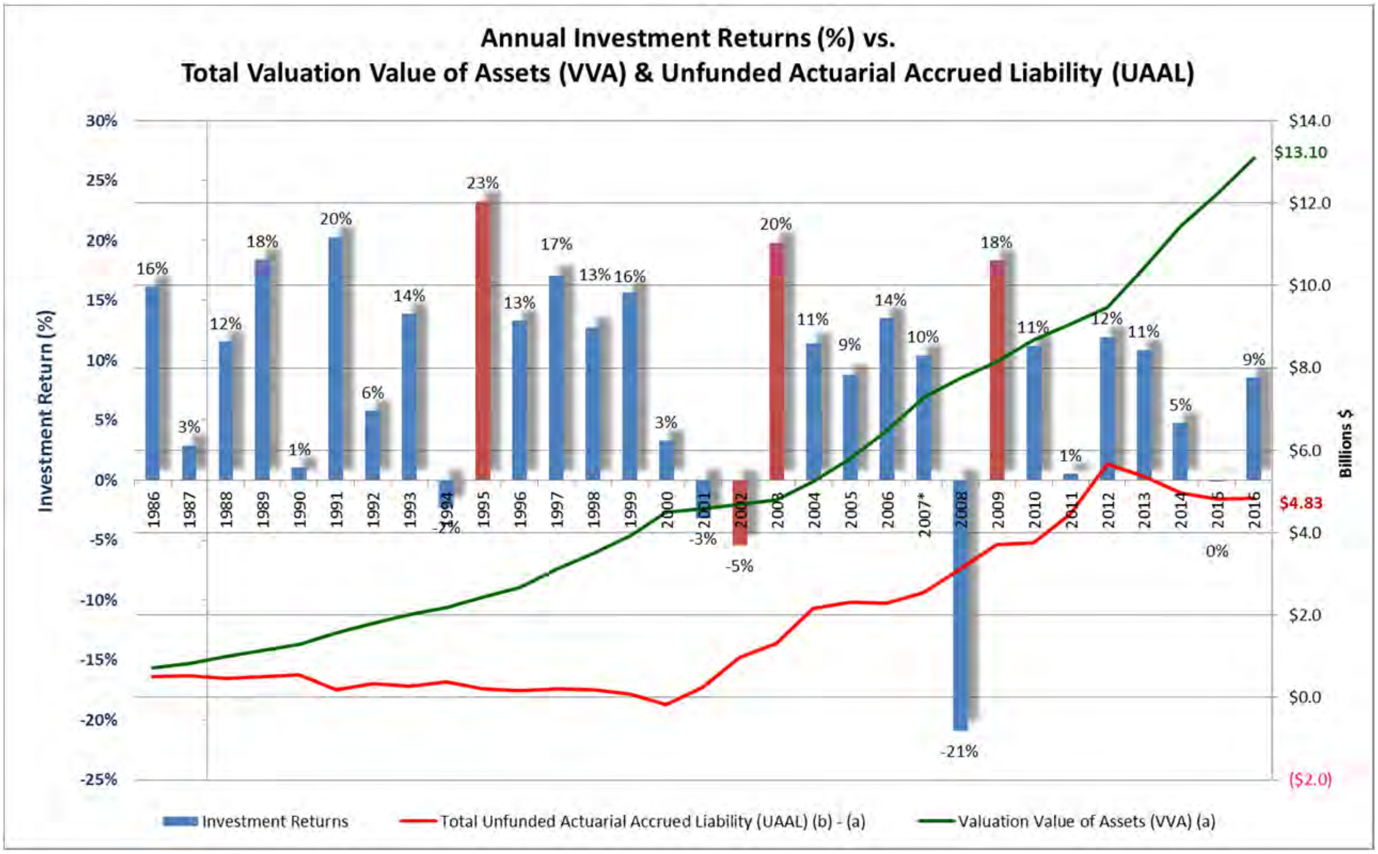
**Growth of System Net Investments at Fair Value**
**(Dollars in Millions)**




**Unfunded Actuarial Accrued Liabilities (UAAL)**
**(Dollars in Millions)**


**Funded Ratio by Calendar Years**
**(Rounded)**






This chart demonstrates how positive earnings in most years will cause the UAAL to decrease. Interestingly this chart also illustrates how the UAAL can grow larger even when the pension fund's investment portfolio returns are positive.

First we need a definition for the UAAL. It simply means that the value of the retirement benefits promised by employers is larger than the actual dollars the retirement system has on hand. The difference between the two is called the UAAL. Having a UAAL is not a bad thing, a retirement system does not need to have in the bank today every benefit dollar that will ever be paid out in the coming 10, 20, 30 years or more. It is much like a parent saving for his or her child's college education. All the dollars required to pay that future obligation do not need to be in the parent's bank account today. In fact the parent is planning on including the returns from sound investments to help meet those future obligations.

OCERS has a plan in place to pay off the System's UAAL in 20 year increments. That plan includes an expectation that the OCERS portfolio will earn on average 7.25% each calendar year, while each plan sponsor and individual member in turn continues to pay the monthly contribution required of them by OCERS' actuary. It's good to note here that no Orange County public plan sponsor or individual OCERS member has ever failed to make the annual minimum required contribution to the OCERS retirement system.

While it is fairly easy to understand that when the plan does not earn its expected 7.25% in a year, that will cause the UAAL to grow, how is it possible for the UAAL to grow even in years where we meet our earnings expectations? Note the chart above. The blue bars indicate how much OCERS earned on its investment portfolio each calendar year. The green line measuring total assets held by the fund is doing well and growing strongly because of those many good years. The red line tracks the rise and fall of the UAAL. The few red bars indicate when the fund actually lost money. In those years with the red bars, as you would expect, you can see an uptick in the red line. But back to our basic question, how is it that even in some good years you can see a rise in that same red line?

Two basic reasons – in some years, such as 2011, even though the earnings bar is blue, it is barely blue, that is, even though the portfolio had positive returns, it didn't make the amount of money that was expected. Positive returns yes, but since it was not enough to meet the earnings expectation in that year, there will be an uptick in the UAAL. The other cause can occur when there is a change made to a basic assumption. 2012 is a good example of that – a strong blue bar representing a 12% return, easily beating our then expected 7.75%. However, in that same year of 2012 we lowered what we assumed could be earned in future years from 7.75% to 7.25% the UAAL rose. If a parent saving for their child's college education is expecting to earn 7.75% on their passbook account suddenly learns the bank is only crediting 7.25% in the future, the parent won't have enough dollars in that account when the child finally reaches the big day. So too with OCERS, by lowering its assumed earnings rate for future years in 2012 the red line had to tick upward despite the good earnings in that year in order to account for the fact that OCERS had to anticipate fewer future dollars would be gained from investment earnings.

# C-10

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# Memorandum

**DATE**: August 5, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **EVOLUTION OF THE UAAL (2017 EDITION)**

## Recommendation

Receive and File.

## Background/Discussion

The Evolution of the UAAL document has been produced annually since 2009 to help better understand how unfunded liabilities can develop over time, and how pension systems such as OCERS manage the long term plan to pay for those liabilities.

Revised in August of each year following release of the annual actuarial valuation, this edition is based on the actuarial valuation material through December 31, 2016.

## Submitted by:

Steve Delaney

Chief Executive Officer

# The Evolution of OCERS Unfunded Actuarial Accrued Liability

Steve Delaney, CEO

December 31, 2016 Valuation

# The Evolution of OCERS Unfunded Actuarial Accrued Liability

The Orange County Employees Retirement System (OCERS) is a public pension plan providing a defined benefit lifetime pension to many of Orange County's diverse community of public servants - from firefighters and police officers to bus drivers and court clerks.

OCERS conducts an annual valuation of the OCERS Trust Fund to determine its current economic status. In the most recent valuation, for the period ending December 31, 2016, the system's professional actuary (The Segal Group) calculated the Unfunded Actuarial Accrued Liability (UAAL) of the fund to be approximately $4,830 billion. At the start of the millennium, as of December 31, 2000, there was no UAAL at all, the system being more than 100% funded. The drivers and components that contributed to the evolution of OCERS' current UAAL are the subjects of this paper.

## WHAT IS AN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)?

UAAL is the difference between the actuarial accrued liability and the actuarial value of assets accumulated to finance a public pension. In simpler terms, if you compare the cost of OCERS' pension promises with the actuarial value of OCERS' assets, the promises currently exceed the assets. That shortfall is OCERS' Unfunded Actuarial Accrued Liability.

A fully funded pension system with no UAAL (as was the case for OCERS in 2000), generally means that all of the actuary's assumptions as to the cost of the fund and growth of liabilities have been met, and the present value of the system's accumulated assets are sufficient to pay out all the pension promises to plan members.

But how does a public pension plan accrue the necessary funds for paying out benefits, and how can that process lead to a gap between the amount of assets held, and the present value of those future benefits?

A pension system's approach to building its assets in order to pay future benefits is not unlike the approach taken by many families in saving for their children's college education. If you expect your child's education is going to cost $100,000 eighteen years from now, you have three basic options:

(1) You could deposit a single lump sum amount representing the present value of that future cost into a savings account, similar to an endowment or trust, calculated to grow with sufficient earnings to total $100,000.

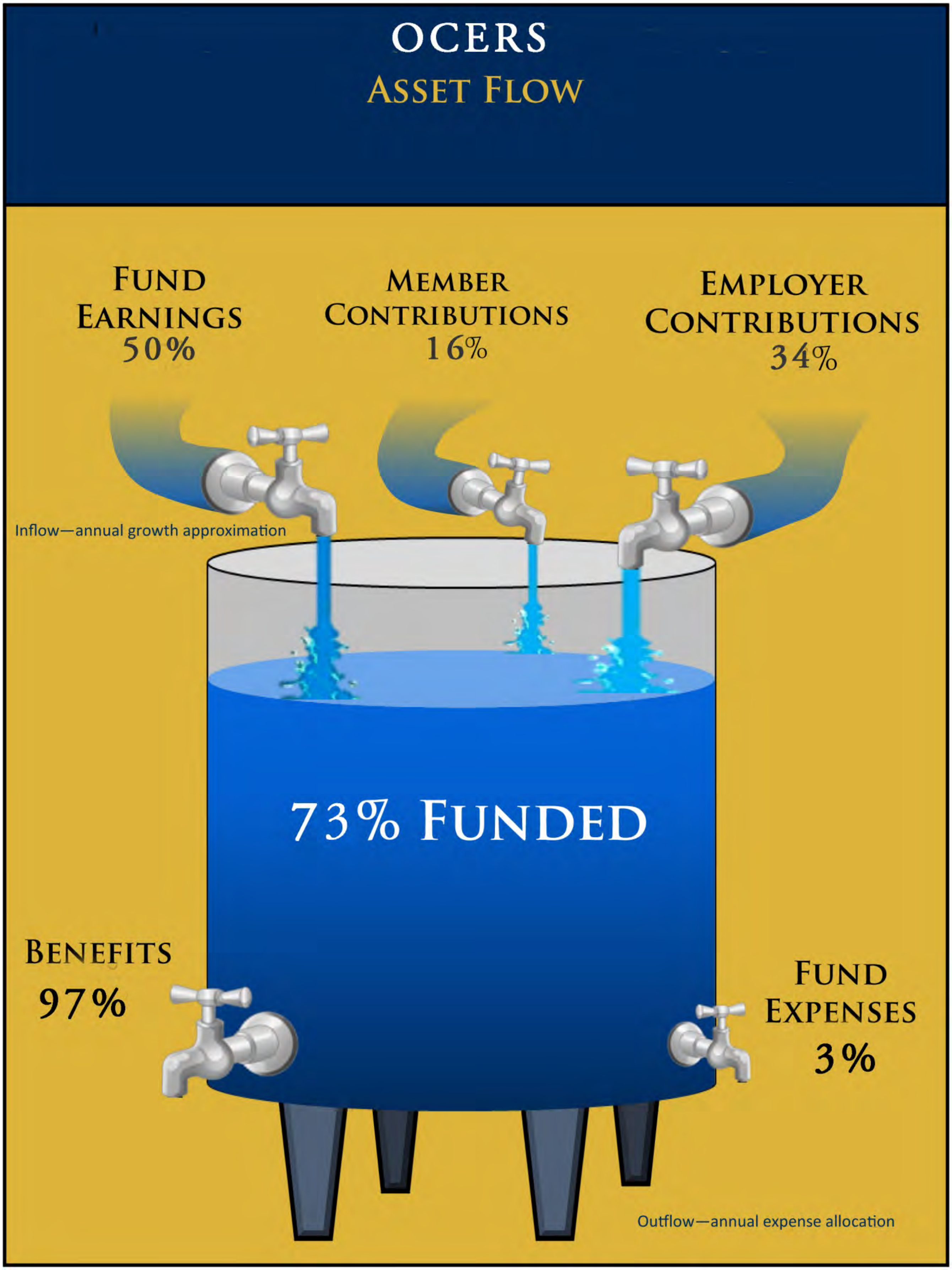
(2) You could save over time, depositing an equal amount year after year into an account and again assume that sufficient interest earnings will accrue to fully fund the cost when the big day arrives.

(3) You could wait until the child turns 18 and pull from your available resources at that time to pay the entire $100,000 in a single payment.

Public pension plans face similar choices in determining the best method for accruing sufficient resources to fund a member's benefit at retirement. Like most American families, the majority of public pension plan systems choose to pay a level percent of salary each year, in order to gradually grow the amount needed to fund future retirements.

Determining how much to contribute each year is a primary challenge for any public pension system. For that reason public pension plans use the expertise of a professional actuary to assist in planning the funding of those retirement benefits over the long term, allowing investment earnings on the contributions to fund the majority of the pension costs. In Orange County those investment earnings provide the largest portion of retirement benefits being paid, greatly reducing the cost to Orange County's employees and taxpayers in providing public services to our community.

The job of a pension plan actuary includes estimating (or assuming) how much money should be contributed each year so the plan will have enough funds to pay the benefits promised by the plan throughout the lifetime of the member. The year-to-year stream of contributions should be as smooth and consistent as possible to avoid wreaking havoc on the budget of the employer.




The graphic above shows a snapshot of OCERS funded status as of December 31, 2016, while the representation of cash inflows and outflows reflect the period of 1998 through 2016.

## HOW DID OCERS' CURRENT UAAL DEVELOP?

The long-term cost of retiree benefits are based on a host of variables, the future values of which are unknown. There are many different events that can both cause a UAAL to develop or even disappear. While actuaries try to pin down these variables through the use of best or at least reasonable assumptions and professional methodologies, the unexpected should be expected to occur.

There are six assumptions in particular that have the greatest impact on the actuary's estimates of plan funding:

1. The assumed rate of return on investments
2. The rate of increase in salaries
3. Member mortality
4. The age at which members choose to retire
5. How many members become disabled
6. How many members terminate their service earlier than anticipated

Finally, there are two other events that can have great impact on plan funding, events the actuaries can't anticipate:

(1) plan changes, that is, when a benefit formula is changed in some unanticipated manner by the plan sponsor, and

(2) differing actual experience, that is, when actual experience indicates that previous assumptions must be modified to reflect a more current reality. A key example here is life expectancy, which with the continued advances in medicine challenges actuaries in being able to accurately project average life expectancies in the coming decades.

Either will generally have an "unfunded" impact on the cost of the system, though savings can occur as well, as in fact has happened in the period of 2009 through 2012 with a slowing in projected salary increases due to the challenging economic times.

First, a summary history of OCERS UAAL as well as the plan's funded status:

(In 000's)

| Actuarial Valuation Date December 31 | Valuation Value of Plan Assets | Total Unfunded Actuarial Accrued Liability (UAAL) | Funded Ratio |
|---|---|---|---|
| **1985** | $613,863 | $462,121 | 57.05% |
| **1986** | $713,506 | $507,409 | 58.44% |
| **1987** | $821,884 | $522,098 | 61.16% |
| **1988** | $985,030 | $468,828 | 67.75% |
| **1989** | $1,136,210 | $515,778 | 68.78% |
| **1990** | $1,297,575 | $543,340 | 70.49% |
| **1991** | $1,576,131 | $196,763 | 88.84% |
| **1992** | $1,807,319 | $332,763 | 84.45% |
| **1993** | $2,024,447 | $280,572 | 87.83% |
| **1994** | $2,177,673 | $372,386 | 85.40% |
| **1995** | $2,434,406 | $199,478 | 92.43% |
| **1996** | $2,675,632 | $176,262 | 93.82% |
| **1997** | $3,128,132 | $204,835 | 93.85% |
| **1998** | $3,504,708 | $177,978 | 95.17% |
| **1999** | $3,931,744 | $85,535 | 97.87% |
| **2000** | $4,497,362 | ($162,337) | 103.74% |
| **2002** | $4,695,675 | $978,079 | 82.76% |
| **2003** | $4,790,099 | $1,309,334 | 78.53% |
| **2004** | $5,245,821 | $2,158,151 | 70.85% |
| **2005** | $5,786,617 | $2,303,010 | 71.53% |
| | | | |

| Actuarial Valuation Date December 31 | Valuation Value of Plan Assets | Total Unfunded Actuarial Accrued Liability (UAAL) | Funded Ratio |
|---|---|---|---|
| **2007** | $7,288,900 | $2,549,786 | 74.08% |
| **2008** | $7,748,380 | $3,112,335 | 71.34% |
| **2009** | $8,154,687 | $3,703,891 | 68.77% |
| **2010** | $8,672,592 | $3,753,281 | 69.79% |
| **2011** | $9,064,355 | $4,458,623 | 67.03% |
| **2012** | $9,469,208 | $5,675,680 | 62.52% |
| **2013** | $10,417,125 | $5,367,917 | 65.99% |
| **2014** | $11,449,911 | $4,963,213 | 69.76% |
| **2015** | $12,228,009 | $4,822,348 | 71.72% |
| **2016** | $13,102,978 | $4,830,483 | 73.06% |

As shown in the table above, the annual calculation of OCERS' UAAL can swing dramatically from year to year, such as **1990-91** when the UAAL shrank from $543 million to $196 million, a reduction of nearly 40% in a single year due primarily to the remarkable earnings of that year (1991: 20.25%); or **2002-03** when the UAAL grew from $978 million to $1.3 billion, an increase of approximately 30% reflecting both assumption and benefit changes the year before, as well as the delayed recognition of some heavy investment losses incurred in the three prior years. While the trajectory of the UAAL was an accelerated increase in recent years due to the unprecedented 2008 market losses and a reduction in the expected investment return assumption used effective with the 2012 valuation, the direction has returned to a generally slow downward slope during the 2013-2015 period, and just a slight $8 million uptake in this past year as overall plan funding improves.

While this document tracks the evolution of the OCERS UAAL as it has developed especially since the year 2000, keep in mind that the actuary can only show from one year to the next what the initial impact a given event may have on future liability projections using the assumptions adopted by the OCERS Board as of that measurement date. It cannot show what specific long term impact of that same event may be in later years should the initial assumption prove different from actual experience. An example of this was the increase in benefits that occurred in 2004, when a number of key benefit formulas were changed by the plan sponsor, leading to a change in the projection regarding future liabilities to be paid out, and creating an increase in the UAAL of $365 million. Will the ultimate cost of that benefit adjustment be $365 million? Not likely, it was an estimate developed using the best assumptions available at the time to prepare that projection. Can we track that specific change in plan design to see what the ultimate cost might truly be? Not really. The OCERS plan is large and complex, with more than 42,000 members making individual life choices that will impact the ultimate cost, either positively or negatively, over a very long period of time. Once the initial event is priced into the cost of the plan, then it is the plan as a whole that gets valued in future years, composed of the many smaller decisions made year after year, and determining the course of the UAAL.

## YEAR BY YEAR REVIEW:

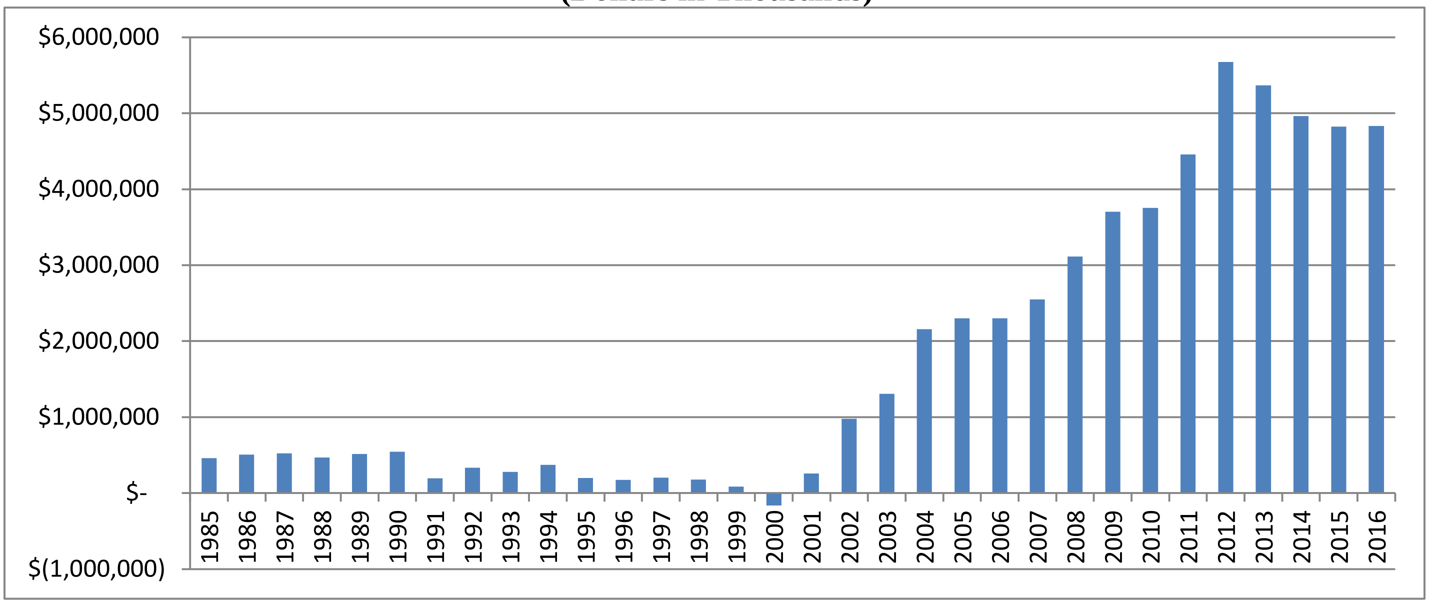
It is current history that has raised the most questions from both employers, members and the public in wanting to better understand how the current UAAL has evolved over the past decade and a half. In the following pages the data used in calculating the UAAL from calendar year 2000 when OCERS last had a surplus, through 2016, is presented in table format, with commentary on the events of each year that had primary impact on determining if the UAAL rose or fell for that given year.

[See the annual reviews for the OCERS UAAL as it develops from calendar year 2000 through 2016, beginning with Page 8.]

## A VISUAL REVIEW OF THE UAAL HISTORY

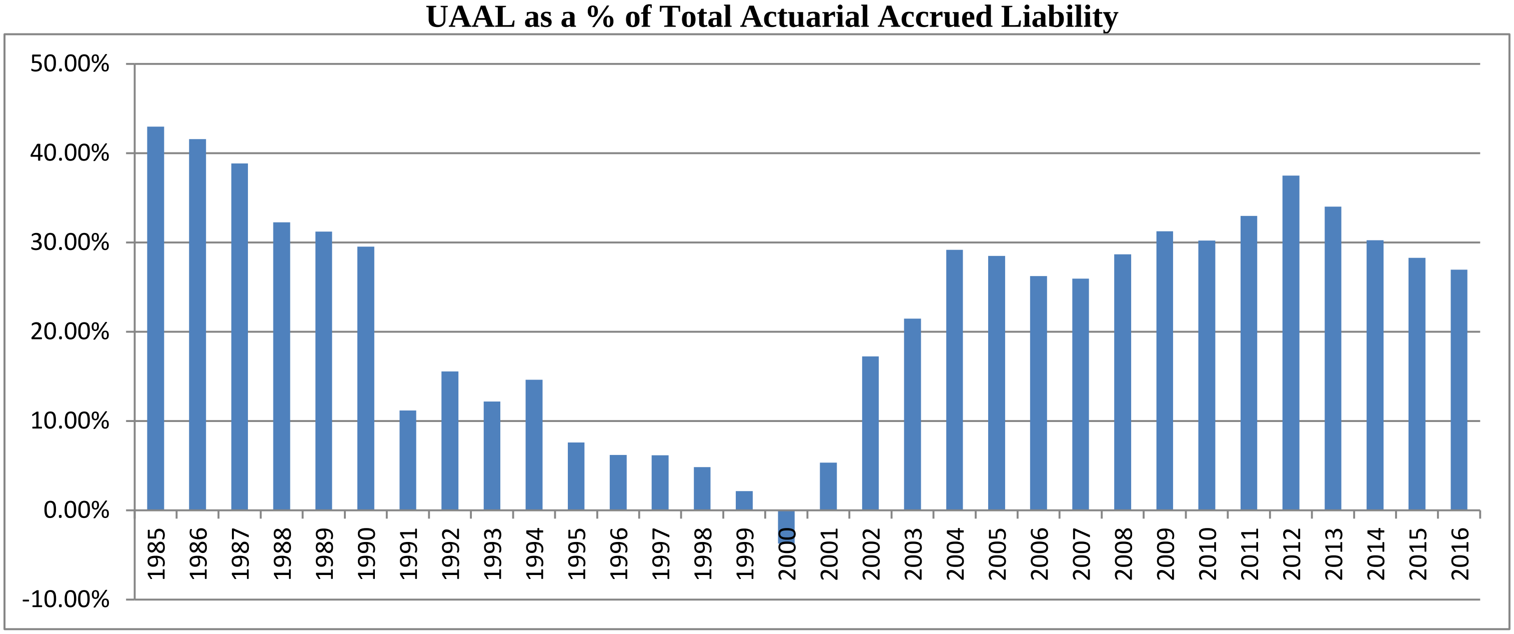
Two different approaches to viewing the UAAL in context of the OCERS Fund as a whole are displayed in the following tables. In the first table a trend line is displayed, reflecting the growth of the UAAL in total dollars. Identifying trends, and determining how best to address the cautionary tale being shared is an important task of any decision maker when it comes to pension design.

**OCERS Total UAAL**
**(Dollars in Thousands)**




In the following table, the UAAL is now reflected as a percentage of the total pension liability, both funded and unfunded, to put it into perspective. This is an important point to keep in mind as the OCERS plan continues to mature over time. Note for example that while the total UAAL increased in 2010 by approximately $50 million dollars, the funded ratio of the plan actually improved, as the total assets available to pay the plan's liabilities increased at an even faster rate.

**OCERS HISTORY**
**UAAL as a % of Total Actuarial Accrued Liability**



## CONCLUSION:

As this review has shown, both past experience and assumptions (that try to predict the future using that past experience) often change, and have a major impact on the system's future costs. Actuaries use long economic cycles to make their assumptions. They do not often adjust their assumptions in response to year-to-year fluctuations in actual experience. Rather, actuarial assumptions are typically changed only following careful assessment of ongoing and durable trends in experience. Because public pension plans such as OCERS take a very long view of the time horizon, recognizing that in 2015 our average general and safety member retired with approximately 19 and 24 years of service, respectively. OCERS is designed specifically to allow time to exercise its smoothing effect on the costs associated with the variability of life and its vagaries.

No matter how one looks at the UAAL, it's important to keep these points in mind - The UAAL is only an estimate based on many different inputs and assumptions that are all subject to refinement. The UAAL is not an absolute number such as the fixed amount of your home mortgage, but is rather a fluid estimate that will both rise and fall as it is revised annually based upon actual experience. Under a well-structured plan with conservative assumptions, the deviations will be both positive (as was the case most recently in 2010) and negative (such as in 2008) in the short run, but tend to smooth to the actuaries assumed rates over time. The causes of transitory shortfalls and surpluses will be captured in improved assumptions and appropriate contribution rates over time, ensuring a secure financial foundation for the promises made to Orange County's public servants.

# 2000

**Development of UAAL/(Surplus) for Year Ended December 31, 2000**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $ 85,534,716 |
| 2. | Total normal cost at middle of year | | |
| 3. | Amortization Payment | | (6,752,601) |
| 4. | Interest | | 11,403,640 |
| 5. | Expected UAAL | | $ 90,185,755 |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Gain on investment | $(286,267,436) | |
| | b. Loss on salary increases | 24,584,670 | |
| | c. Loss on new retirees | 29,186,796 | |
| | d. Gain on mortality | (28,835,682) | |
| | e. Other experience (gain)/loss | 8,809,049 | |
| | f. Benefit improvements | | |
| | g. Change in actuarial assumptions | | |
| | h. Total changes | | (252,522,603) |
| 7. | **(Surplus) at the end of the year** | | $ (162,336,848) |

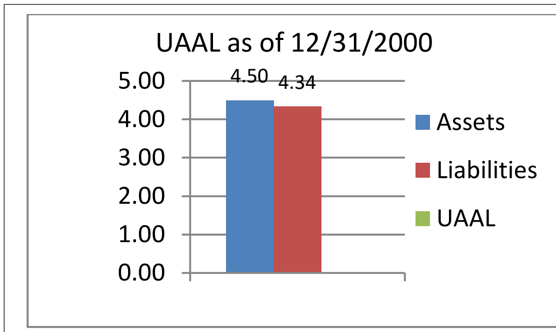
**IMPACTING EVENTS**

Calendar year 2000 is a key year, and emblematic of how public pension systems are designed to smooth out the highs and lows of plan costs over time, OCERS moves from a UAAL of $85 million at the start of the year to a surplus of $162 million as the year comes to a close.

There were no significant changes in Plan provisions in calendar year 2000.

Though total fund returns for 2000 were only 3.28% that exceeded the policy benchmark and ranked OCERS in the top quartile of the Callan Public Plan Sponsor Database. Altogether the recognition of past and current smoothed earnings lowered the UAAL by over $286 million.

The actuarial value of assets passed the actuarial value of liabilities in 2000, and the Plan was 103.7% funded at the end of the calendar year.




In billions

# 2001

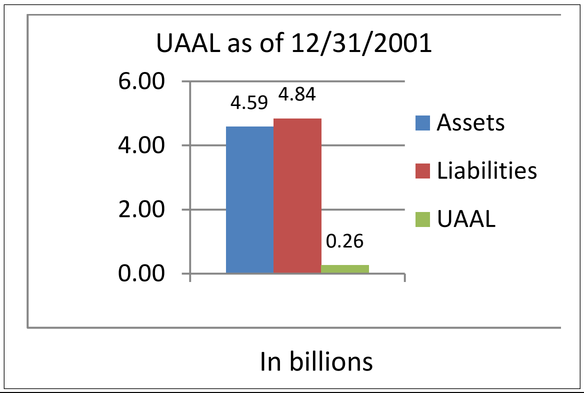
| | | | |
|---|---|---|---|
| **Development of UAAL/(Surplus) for Year Ended December 31, 2001** | | | |
| 1. | **(Surplus) at beginning of year** | | $(162,336,848) |
| 2. | Total normal cost at middle of year | | |
| 3. | Amortization Payment | | (11,193,795) |
| 4. | Interest | | 7,117,033 |
| 5. | Expected UAAL | | $(158,260,086) |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | $221,191,812 | |
| | b. Loss on salary increases | 40,447,786 | |
| | c. Loss on new retirees | 48,490,180 | |
| | d. Other experience (gain)/loss | 19,791,339 | |
| | e. Change in actuarial assumptions | (34,094,126) | |
| | f. Impact of 3%@50 for Law Enforcement (Safety) | 119,488,767 | |
| | g. Total changes | | 415,315,758 |
| 7. | **UAAL at the end of the year** | | $ 257,055,672 |

## IMPACTING EVENTS

While not significant, changes to the assumed withdrawal rates, the assumed termination rates, the assumed service-connected disability rates and the assumed retirement rates taken together actually lowered future liabilities by approximately $34 million.

The change in the retirement benefit for Law Enforcement (safety) members to a 3% per year of service benefit payable at age 50 increased future liability by approximately $119 million.

The OCERS portfolio experienced a loss of -3.24% in calendar year 2001, with an earnings assumption of 8%. That loss, though smoothed led to an increase of the UAAL by $221 million.



## 2002

**Development of UAAL for Year Ended December 31, 2002**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $ 257,055,672 |
| 2. | Total normal cost at middle of year | | |
| 3. | Amortization Payment | | 12,123,329 |
| 4. | Interest | | 27,502,107 |
| 5. | Expected UAAL | | $ 296,681,108 |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | $ 220,329,452 | |
| | b. Loss on salary increases | 91,886,000 | |
| | c. Loss on new retirees | 82,392,000 | |
| | d. Other experience (gain)/loss | 48,763,0690 | |
| | e. Change in actuarial assumptions | 148,339,453 | |
| | f. Impact of 3%@50 for Firefighters; Probation become Safety under the 2%@50 formula retro; 3%@50 fwd. | 89,688,449 | |
| | g. Total changes | | 681,398,423 |

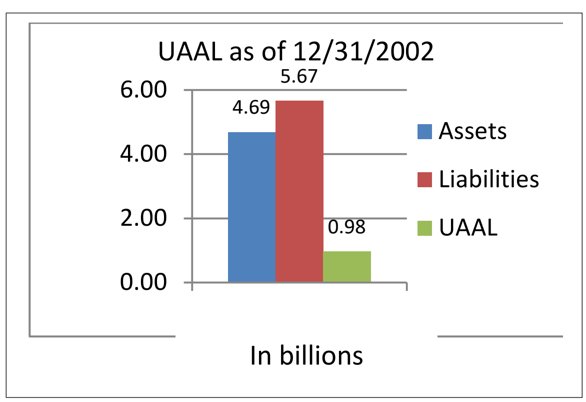
**IMPACTING EVENTS**

OCERS experienced negative returns in 2002 as did much of the market. A loss of -5.46%, when the assumption was for earnings of 8% led to an effective hit of -13.46% on the funding position of the plan. Even with smoothing in place, more than $220 million in losses were applied to the UAAL.

With the market having been down for a couple of years in a row, the OCERS Board revisited its earnings assumption and lowered the portfolio's assumed rate of return from 8% annual to 7.5%. That change in earnings assumption indicated there would be lower investment earnings to offset plan costs. Taken together with a lowering of the assumption for future salary increases (when salaries don't grow as fast as anticipated, fewer contributions than anticipated will be flowing to the system) from 5.5% to 4.5% annually, led to a $148 million increase in the UAAL.

On the benefit side, the formula for firefighters was improved to 3% of final average salary at age 50.

Effective June 28, 2002 Probation Services Unit employees became safety members and started accruing benefits in the 2%@50 retirement plan formula. Tier 1 employees hired prior to July 15, 1977 and who remained continuously employed thru June 28, 2002, had their general member service retroactively upgraded to the safety plan formula. Tier 2 employees with seven (7) or more years of service, had 90% of their general member service upgraded to the safety plan formula. Tier 2 employees with less than seven (7) years of service, had 80% of their general member service upgraded to the safety plan formula. The County of Orange Probation department paid for the plan upgrade of service as did the employees by paying a 2% share of employer cost. Additionally, all of the Tier 2 employees were given an opportunity to pay the employee and employer contributions necessary to upgrade the remainder of their general service into the safety plan formula.



## 2003

**Development of UAAL for Year Ended December 31, 2003**

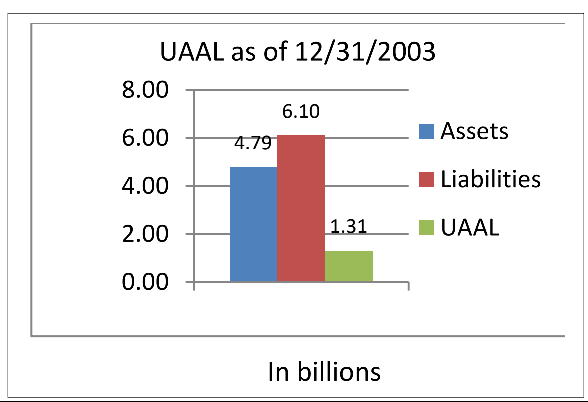
| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $ 978,079,531 |
| 3. | Total normal cost at middle of year | | |
| 4. | Amortization Payment | | (58,355,527) |
| 5. | Interest (7.5%) | | 78,359,367 |
| 6. | Expected UAAL | | $ 998,083,371 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | $ 287,828,001 | |
| | b. Gain on salary increases | (103,234,000) | |
| | c. Loss on new retirees | 119,420,000 | |
| | d. Other experience (gain)/loss | 4,898,374 | |
| | e. Change in actuarial assumptions | | |
| | f. Impact of new formula for City of San Juan Capistrano, and City of Rancho Santa Margarita | 2,337,899 | |
| | g. Total changes | | 311,250,274 |
| 8. | **UAAL at the end of the year** | | $1,309,333,645 |

**IMPACTING EVENTS**

Despite a great year for the market, with the OCERS portfolio returning 19.84% in 2003, that wasn't enough to offset the smoothed losses of prior years continuing to be recognized in the valuation, with the UAAL growing by over $287 million on that basis alone.

Even with the lower salary growth assumption adopted in the previous year, member salaries did not grow as fast as anticipated, so while fewer contributions came in, that was offset by lower growth in pension liabilities, leading to a reduction in the UAAL of $103 million.

The cities of San Juan Capistrano and Rancho Santa Margarita adopted improved benefit formulas for their general service members, 2.7%@55 for San Juan Capistrano, and 2.5%@55 for Rancho Santa Margarita.



# 2004

**Development of UAAL for Year Ended December 31, 2004**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $1,309,334,000 |
| 2. | Changes in methods and procedures | | 106,630,000 |
| 3. | Total normal cost at middle of year | | 188,163,000 |
| 4. | Actual employer/member contributions | | (279,940,000) |
| 5. | Interest | | 102,756,000 |
| 6. | Expected UAAL | | $1,426,943,000 |
| 7. | Actual (gain)/loss and other changes | | |
| | a. Gain on investment | $(50,536,000) | |
| | b. Other experience (gain)/loss | 19,372,000 | |
| | c. Benefit improvements | 365,409,000 | |
| | d. Change in actuarial assumptions | 579,681,000 | |
| | e. Change to 3.5% inflation assumption and Entry Age Normal funding method | 33,129,000 | |
| | f. Change in investment return | (215,487,000) | |
| | g. Total changes | | 731,208,000 |
| 8. | **UAAL at the end of the year** | | $2,158,151,000 |

**IMPACTING EVENTS**

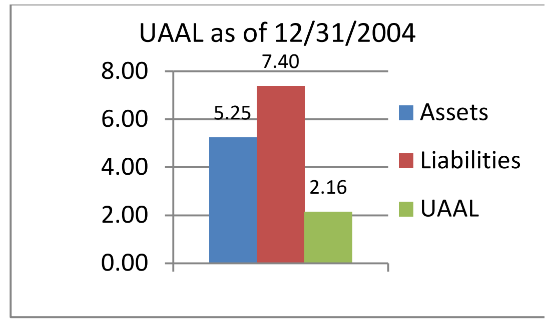
Two major events occurred in 2004, a change in actuarial services from Towers Perrin to The Segal Group led to a review and change in actuarial methods, procedures, and assumptions. There were also several retirement benefit formula improvements

Moving from one actuary to another is an uncommon event The change in valuation methods and procedures between Towers Perrin and The Segal Group led to an increase in the UAAL of $107 million. 2004 is the only year you will find the "Changes in Methods and Procedures" line entry capturing the impact of that change in this document.

In addition to reflecting a change in methods and procedures, the 2004 valuation also includes a number of basic actuarial assumption changes regarding future salary increases, rates of withdrawal at termination, and rates of retirement. Those changes added an additional $580 million to the UAAL.

An improvement in benefits as Probation members adopted the 3%@50 formula, Orange County Transportation Authority adopted 2.5%@55, and The County of Orange general members adopted 2.7%@55, increased the UAAL by $365 million.

A gain for the fund was the recognition that the current portfolio composition would earn an assumed rate of return of 7.75%, an increase over the previous 7.5%. That assumption that greater earnings would assist in offsetting costs lowered the UAAL by $215 million.




In billions

# 2005

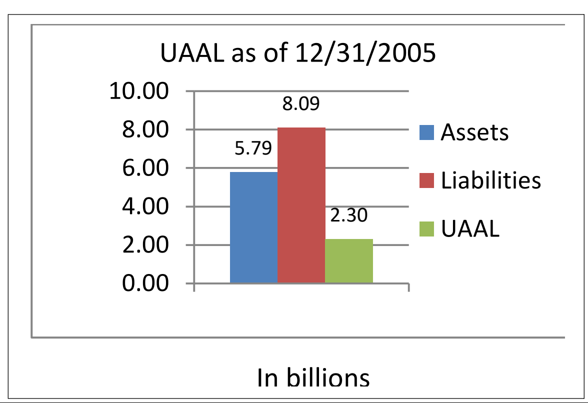
| Development of UAAL for Year Ended December 31, 2005 | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $2,158,151,000 |
| 2. | Total normal cost at middle of year | | 297,420,000 |
| 3. | Actual employer/member contributions | | (345,111,000) |
| 4. | Interest | | 165,409,000 |
| 5. | Expected UAAL | | $2,275,869,000 |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Gain on investment | $(39,536,000) | |
| | b. Loss on salary increases | 16,544,000 | |
| | c. Change in methodology used to calculate benefits for deferred vested members | (15,335,000) | |
| | d. Other experience (gain)/loss | 65,468,000 | |
| | e. Benefit improvements | | |
| | f. Change in actuarial assumptions | | |
| | g. Total changes | | 27,141,000 |
| 7. | **UAAL at the end of the year** | | $2,303,010,000 |

## IMPACTING EVENTS

2005 is an example of how over the long term a defined benefit plan experiencing a period of rising costs can correct itself and move to a more stable norm. Though the UAAL rose just over $27 million in 2005, which was smaller as a percentage than the positive rise in the overall size of the portfolio, causing the funded status of the plan to improve from 70.85% at the start of the year, to 71.53% by the end of the year.

A positive return on the OCERS portfolio of 8.83%, exceeding the assumed earnings rate of 7.75%, allowed for application of a portion (after smoothing) of those investment gains to offset some larger losses where the economic and demographic experience through 2005 was negatively different from the actuarial assumptions.

A change in actuarial methodology used in calculating benefits for deferred vested members with reciprocal service led to a reduction in the UAAL of $15 million.



# 2006

**Development of UAAL for Year Ended December 31, 2006**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $2,303,010,000 |
| 2. | Total normal cost at middle of year | | 300,072,000 |
| 3. | Actual employer/member contributions | | (425,950,000) |
| 4. | Interest | | 173,606,000 |
| 5. | Expected UAAL | | $2,350,738,000 |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Gain on investment | $(112,612,000) | |
| | b. Loss on salary increases | 21,679,000 | |
| | c. Other experience (gain)/loss | 39,155,000 | |
| | d. Benefit improvements | | |
| | e. Change in actuarial assumptions | | |
| | f. Total changes | | (51,778,000) |
| 7. | **UAAL at the end of the year** | | $2,298,960,000 |

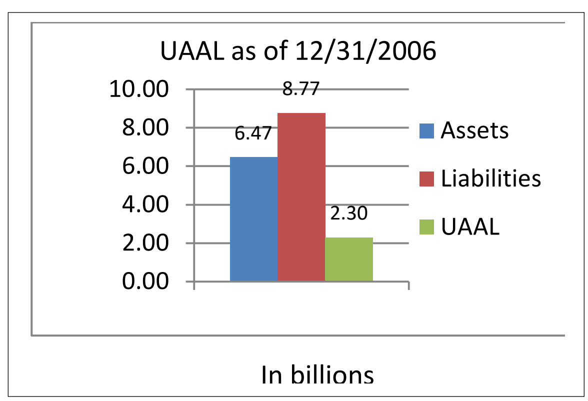
## IMPACTING EVENTS

2006 is another example, like that of 2005, of how over the long term a defined benefit plan can correct itself and move to a more stable norm. In 2006 the UAAL dropped in relatively modest terms, by approximately $5 million. Overall however the funded status of the plan again improved, moving from 71.53% at the start of the year, to 73.77% by the end of the year. At the same time the aggregate employer contribution rate (the average of the County of Orange and all special districts combined) decreased from 24.27% of payroll to 24.01%. In turn, the aggregate employee's contribution rate similarly decreased from 10.39% of payroll to 10.36%.

Much of the positive movement in 2006 can be attributed to the 13.55% positive portfolio returns, exceeding the assumed earnings rate of 7.75%, allowing for application of a portion (after smoothing) of those investment gains towards the existing UAAL.

There were no benefit plan changes or any actuarial assumption changes in 2006.

The City of Rancho Santa Margarita did withdraw from OCERS in 2006 in order to move to CalPERS. There were no retirees with service earned with the City of Rancho Santa Margarita, so no long term pension liabilities were left behind with the OCERS plan upon the City's departure.



# 2007

**Development of UAAL for Year Ended December 31, 2007**

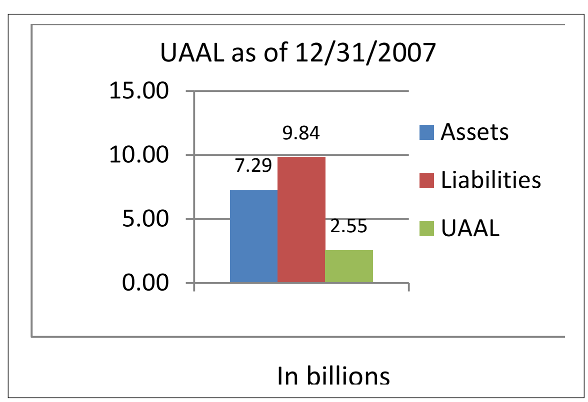
| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $2,298,960,000 |
| 2. | Total normal cost at middle of year | | 324,706,000 |
| 3. | Actual employer/member contributions | | (486,212,000) |
| 4. | Interest | | 171,911,000 |
| 5. | Expected UAAL | | $2,309,365,000 |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Gain on investment | $(176,681,000) | |
| | b. Loss on salary increases | 136,417,000 | |
| | c. Other experience (gain)/loss | 43,538,000 | |
| | d. Benefit improvements | | |
| | e. Change in actuarial assumptions | 237,147,000 | |
| | f. Total changes | | 240,421,000 |
| 7. | **UAAL at the end of the year** | | $2,549,786,000 |

## IMPACTING EVENTS

2007 saw a positive return on the OCERS portfolio of 10.75%, exceeding the assumed earnings rate of 7.75%, allowing for application of a portion (after smoothing) of those investment gains to offset some large changes in the actuarial assumptions.

Coming out of a triennial Actuarial Experience Study, analyzing the period of January 1, 2005 through December 31, 2007, a number of actuarial assumptions were changed in the areas of mortality, termination of membership, rates of retirement, salary growth, and annual payoffs, leading to an increase in the UAAL of approximately $237 million.

A benefit change for the Cemetery District, moving to a 2% of final average salary at age 55 for future service only, was too negligible to have an impact on plan funding.



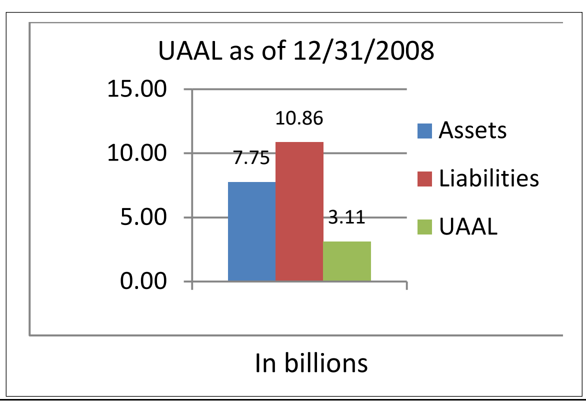
# 2008

| | | | |
|---|---|---|---|
| **Development of UAAL for Year Ended December 31, 2008** | | | |
| 1. | **UAAL at beginning of year** | | $2,549,786,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 361,097,000 |
| 4. | Actual employer/member contributions | | (532,656,000) |
| 5. | Interest | | 190,961,000 |
| 6. | Expected UAAL | | $2,569,188,000 |
| 7. | Actual (gain)/loss and other changes | | |
| | a. Loss on investment | $257,752,000 | |
| | b. Loss on salary increases | 97,561,000 | |
| | c. Loss on new retirements | 54,911,000 | |
| | d. Other experience (gain)/loss | 17,159,000 | |
| | e. Benefit improvements | | |
| | f. Change in actuarial assumptions | 115,764,000 | |
| | g. Total changes | | 543,147,000 |
| 8. | **UAAL at the end of the year** | | $3,112,335,000 |

**IMPACTING EVENTS**

2008 saw massive losses in the market by public pension systems across the country, with the Dow Jones Industrial Average (DJIA) down by -33.8%, the worst single year decline since the Great Depression. OCERS did remarkably well, declining by only -20.71%. Yet, even with smoothing of gains and losses in place, that decline led to a loss of $257.7 million that had to be recognized in the calculation of the 2008 UAAL.

Changes in service retirement rates for General members under improved benefit formulas required a change in actuarial assumptions, leading to an increase in the UAAL of $115.7 million.



# 2009

**Development of UAAL for Year Ended December 31, 2009**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $3,112,335,000 |
| 2. | **Inclusion of Additional Premium Pay Items** | | 228,051,000 |
| 3 | **ADJUSTED UAAL for beginning of year** | | $3,340,386,000 |
| 4. | Changes in methods and procedures | | |
| 5. | Total normal cost at middle of year | | 396,025,000 |
| 6. | Actual employer/member contributions | | (545,215,000) |
| 7. | Interest | | 253,099,000 |
| 8. | Expected UAAL | | $3,444,295,000 |
| 9. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | 322,523,000 | |
| | b. Gain on lower than expected salary increases | (77,858,000) | |
| | c. Other experience (gain)/loss | 14,931,000 | |
| | d. Benefit improvements | | |
| | e. Change in actuarial assumptions | | |
| | f. Total changes | | 259,596,000 |
| 8. | **UAAL at the end of the year** | | $3,703,891,000 |

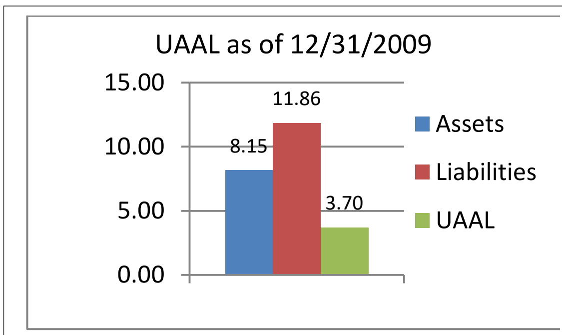
**IMPACTING EVENTS**

A major challenge for the 2009 valuation was the discovery, and inclusion of a pre-existing liability. The impact of "premium pay" [uniform allowance, bilingual requirements, etc.] on final compensation earnable had been underreported to the actuary since 2004. With proper reporting, the recognition of a liability that had been present, but unvalued, added an additional $228 million to the adjusted beginning UAAL figure for the year.

Despite increasing assets (on a market value) by over $1 billion in calendar year 2009, an 18.54% return, OCERS actually takes a loss on investments in 2009, in the amount of $322,523,000. Because OCERS smooths both gains and losses, only $120,722,000 of the gains in 2009 were recognized, while $444,350,000 of deferred losses had to be recognized in turn flowing out of the prior year 2008. Because there were some remaining gains to be recognized from prior years still being smoothed in as well, the actual calculation for the Loss on Investment in 2009 looked like this:

| | |
|---|---|
| 2005 | $ 3,887,000 |
| 2006 | 64,826,000 |
| 2007 | 47,222,000 |
| 2008 | (444,350,000) |
| 2009 | 120,722,000 |
| TOTAL | $(207,693,000) |

The difference between the loss of $207.7 million from smoothing and the actual loss of $322.5 million recognized in the valuation was due to investment income that was not generated as the value of assets used in the valuation at the start of the year was actually more than the market value by about $1.5 billion.



In billions

# 2010

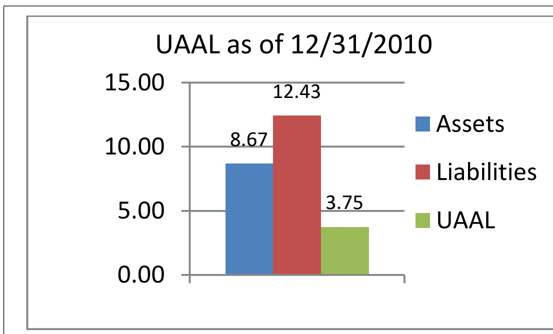
**Development of UAAL for Year Ended December 31, 2010**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $3,703,891,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 389,458,000 |
| 4. | Actual employer/member contributions | | (565,242,000) |
| 5. | Interest | | 280,240,000 |
| 6. | Expected UAAL | | $3,808,347,000 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | $224,044,000 | |
| | b. Gain on lower than expected salary increases | (215,936,000) | |
| | c. Loss on new retirements | | |
| | d. Other experience (gain)/loss | (63,174,000) | |
| | e. Benefit improvements | | |
| | f. Change in actuarial assumptions | | |
| | g. Total changes | | (55,066,000) |
| 8. | **UAAL at the end of the year** | | $3,753,281,000 |

## IMPACTING EVENTS

With continued economic stress, many of OCERS plan sponsors delayed filling vacancies, did not provide any cost-of-living adjustments to current salaries, and some even experienced wage reductions, combining to provide a large gain of more than $215 million in savings as future liabilities did not rise as quickly as the actuary assumed would be the case under normal market conditions.

Overall the system UAAL did increase by approximately $50 million, primarily due to lower than expected investment returns. While the system actually earned 11.74%, more than the assumed rate, due to smoothing, the ongoing recognition of losses coming out of 2008 continued to hold down any possible gain on investments. Still, this was an interesting year as even with a smoothed loss of $224 million, the funded ratio of the plan, that is total assets compared to total liabilities actually improved, moving from 68.77% the year prior to 69.79% at the end of 2010.




In billions

# 2011

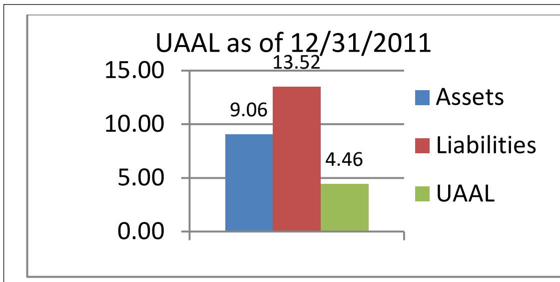
**Development of UAAL for Year Ended December 31, 2011**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $3,753,281,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 385,008,000 |
| 4. | Actual employer/member contributions | | (598,271,000) |
| 5. | Interest | | 282,615,000 |
| 6. | Expected UAAL | | $3,822,633,000 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | $388,935,000 | |
| | b. Gain on lower than expected salary increases | (174,558,000) | |
| | c. Full-Time equivalent salary reporting adjustment for part time employees | 73,448,000 | |
| | d. Retiree continuance form code change | 42,619,000 | |
| | e. Reclassify some active members as deferred | (6,295,000) | |
| | f. Loss on new retirements | | |
| | g. Other experience (gain)/loss | (52,001,000) | |
| | h. Benefit improvements | | |
| | i. Change in actuarial assumptions | 363,842,000 | |
| | j. Total changes | | 635,990,000 |
| 8. | **UAAL at the end of the year** | | $4,458,623,000 |

## IMPACTING EVENTS

Every three years OCERS performs an experience study to determine how closely the actuary's assumptions are hewing to actual experience. The 2011 valuation was impacted by a number of assumption changes that flowed from the December 31, 2010 experience study, increasing the UAAL by $363,842,000. Those changes included (1) higher liability from recognition that General service retirees and all General and Safety beneficiaries were living longer than assumed, and (2) slightly higher individual salary increases, (3) offset to some degree by expectation of later service retirements, (4) fewer disability retirements, (5) more terminations and (6) slightly lower annual payoffs.

A very important change in an economic assumption also occurred, with the introduction of a 0.25% across the Board salary increase assumption. Though in the short term many OCERS plan sponsors have continued with layoffs, delayed hires, and reductions in overall salary payroll, the long term projection by the actuary is that salaries will increase. With the addition of this assumption, there is now a consideration that over long periods of time wage inflation will be higher than price inflation by 0.25% per year.




A major IT software conversion project also led OCERS to further refine the data reported to the actuary. Three of those data refinements had an impact on this year's UAAL as well:

Determining that full-time equivalent salaries (calculated by adjusting actual pensionable salaries with earnable salaries during those pay periods when the member is not working full-time) would more accurately reflect likely final compensation used to determine retirement benefits. That clarification added $73,448,000.

Confirming those retirees who have spouses eligible for a continued benefit following the member's death added $42,619,000.

Confirming that some members who had been classified as active and therefore still accruing a liability, were in fact deferred and had reduced the UAAL by $6,295,000.

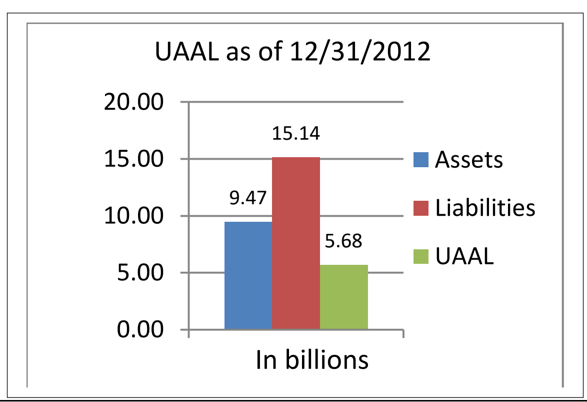
# 2012

**Development of UAAL for Year Ended December 31, 2012**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $4,458,623,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 410,258,000 |
| 4. | Actual employer/member contributions | | (627,964,000) |
| 5. | Interest | | 337,107,000 |
| 6. | Expected UAAL | | $4,578,024,000 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Loss on investment | $387,808,000 | |
| | b. Gain on lower than expected salary increases | (244,750,000) | |
| | c. Loss on new retirements | | |
| | d. Other experience (gain)/loss | 19,979,000 | |
| | e. Benefit improvements | | |
| | f. Change in actuarial assumptions | 934,619,000 | |
| | g. Total changes | | 1,097,656,000 |
| 8. | **UAAL at the end of the year** | | $5,675,680,000 |

**IMPACTING EVENTS**

The 2012 valuation was impacted by economic assumption changes that flowed from the December 31, 2012 Review of Economic Actuarial Assumptions, increasing the UAAL by $934,619,000. Those changes included (1) decreasing the net investment return assumption from 7.75% per annum to 7.25% per annum, (2) decreasing the inflation assumption from 3.50% per annum to 3.25% per annum, and (3) increasing the current real “across the board” salary increase assumption from 0.25% to 0.50%. The $934,619,000 fully represents the effect of the change in earnings assumptions, as the cost impact of the other two (decrease inflation, increase salary assumptions) had a canceling effect on one another.



# 2013

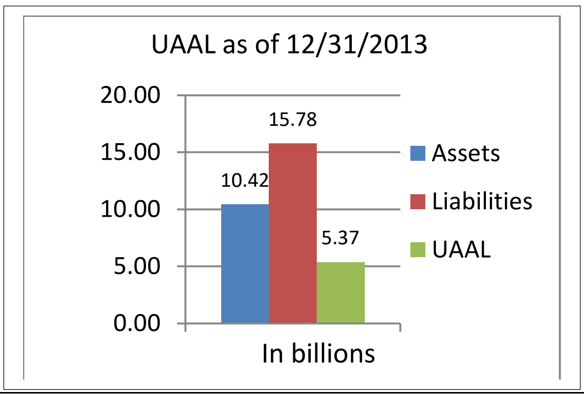
| | | | |
|---|---|---|---|
| **Development of UAAL for Year Ended December 31, 2013** | | | |
| 1. | **UAAL at beginning of year** | | $5,675,680,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 457,762,000 |
| 4. | Actual employer/member contributions | | (667,788,000) |
| 5. | Interest | | 403,873,000 |
| 6. | Expected UAAL | | $5,869,527,000 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Gain on investment | $(176,930,000) | |
| | b. Gain on lower than expected salary increases | (294,326,000) | |
| | c. Loss on new retirements | | |
| | d. Other experience (gain)/loss | (30,354,000) | |
| | e. Benefit improvements | | |
| | f. Change in actuarial assumptions | | |
| | g. Total changes | | (501,610,000) |
| 8. | **UAAL at the end of the year** | | $5,367,917,000 |

## IMPACTING EVENTS

The UAAL decreased in 2013 to $5,367,917,000. The decrease in unfunded liability is mainly due to higher than expected investment returns of $176 million (after smoothing), and lower than expected salary increases saving another $294 million. When salary growth is less than anticipated there is less payroll as a basis for spreading cost, but more importantly, for the UAAL, that lower salary growth means lower future earned benefit liabilities.

Through the end of 2017, there is an additional $262 million in deferred investment gains still to be recognized, which represents about 2% of the market value of assets. As noted in the introduction to this study, delaying the full recognition of such gains (or losses) allows for more stability in contribution rates. Were the full $262 million in deferred gains to be immediately recognized, OCERS funded ratio would rise from 65.99% to 67.65%.

Beginning with the December 31, 2013 valuation, OCERS began to include in the valuation report the decrease (or increase) in the UAAL by employer rate group (as found on pages 128 and 129 of the 2013 valuation). As of December 31, 2013, $3,872,000,000 of the UAAL is charged to general member service while the remaining $1,495,000,000 is related to safety member service.



# 2014

**Development of UAAL for Year Ended December 31, 2014**

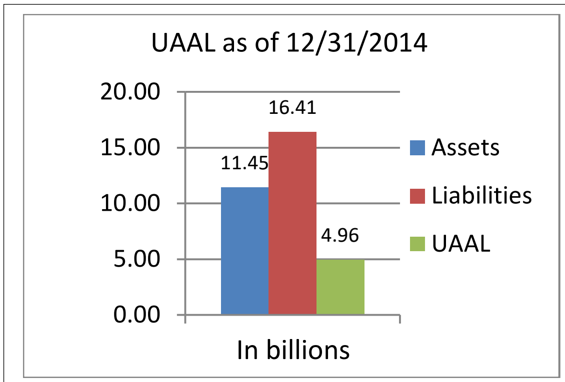
| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $5,367,917,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 454,221,000 |
| 4. | Expected employer/member contributions | | (829,361,000) |
| 5. | Interest | | 376,931,000 |
| 6. | Expected UAAL | | $5,369,708,000 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Gain from add'l UAAL contributions | $(151,485,000) | |
| | b. Loss from actual contributions less than expected | 89,407,000 | |
| | c. Gain from investment return | (9,570,000) | |
| | d. Gain from lower than expected salary increases | (125,746,000) | |
| | e. Gain from lower than expected COLA increases | (153,484,000) | |
| | f. Other experience (gain)/loss | 66,554,000 | |
| | g. Benefit improvements | | |
| | h. Change in actuarial assumptions | (122,171,000) | |
| | i. Total changes | | ($406,495,000) |
| 8. | **UAAL at the end of the year** | | $4,963,213,000 |

## IMPACTING EVENTS

As in 2013, the UAAL once again decreased in 2014 to $4,963,213,000. A small investment gain of $9,570,000 was attributed to the fund recognizing prior year gains despite actually earning less than the assumed earnings rate of 7.25%. Additional factors contributing to the decrease in the UAAL included lower than expected salary increases, saving $125 million - when salary growth is less than anticipated there is less payroll as a basis for spreading cost, but more importantly, for the UAAL, that lower salary growth means lower future earned benefit liabilities. A $153,484,000 gain accrued due to low inflation as only 1.0% was statutorily granted in 2014 for retiree COLAs, despite the actuary having assumed a possible 3% (the maximum allowable) COLA when setting contribution rates.

The loss of $66,554,000 noted in the general category of "other experience" was primarily driven by more retirements than had been anticipated.

Beginning with the December 31, 2013 valuation, OCERS began to include in the valuation report the decrease (or increase) in the UAAL by employer rate group (as found on pages 139 and 140 of the 2014 valuation). As of December 31, 2014, $3,365,137,000 of the UAAL accrued from general member service while the remaining $1,598,076,000 accrued from safety member service.




A series of actuarial assumption changes led to a $122,701,000 reduction in the UAAL, with a net change to mortality (improved for safety members, but offset by a reduction among general members) comprising approximately $33,000,000 of that reduction.

# 2015

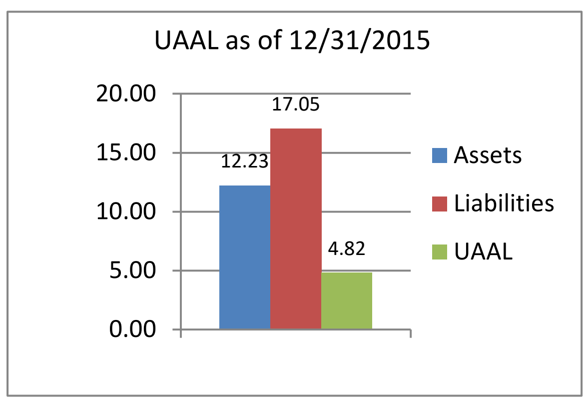
**Development of UAAL for Year Ended December 31, 2015**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $4,963,213,000 |
| 2. | Changes in methods and procedures | | |
| 3. | Total normal cost at middle of year | | 455,105,000 |
| 4. | Expected employer/member contributions | | (822,863,000) |
| 5. | Interest | | 347,804,000 |
| 6. | Expected UAAL | | $4,943,259,000 |
| 7. | Actuarial (gain)/loss and other changes | | |
| | a. Gain from add’l UAAL contributions | ($69,852,000) | |
| | b. Loss from actual contributions less than expected | 44,960,000 | |
| | c. Loss from investment return | 229,138,000 | |
| | e. Gain from lower than expected COLA increases | (119,367,000) | |
| | f. Gain from lower than expected salary increases | (282,696,000) | |
| | g. Loss from higher than expected retirement experience increases | 62,070,000 | |
| | h. Other experience (gain)/loss | 14,836,000 | |
| | | | |
| | i. Total changes | | ($120,911,000) |
| 8. | **UAAL at the end of the year** | | $4,822,348,000 |

**IMPACTING EVENTS**

For the third year in a row, OCERS UAAL has decreased at a faster rate than would be expected if all assumptions were met. The UAAL at December 31, 2015 was $140,865 million lower than at the end of 2014 despite having net investment returns of -0.45%. Due to the smoothing of investment gains/losses over five years, the UAAL increased in 2015 by $229 million for earning less than assumed, but a deferred loss on investments of $680 million will be added to the UAAL over the next four years.

The current year’s recognition of investment losses were offset by other gains which netted to a lower UAAL at the end of the year. The primary contributing factor for the decrease is actual salary increases being lower than assumed. As discussed in previous years, when salary growth is less than anticipated there is less payroll as a basis for spreading cost, but more importantly, for the UAAL, that lower salary growth means lower future earned benefit liabilities. In 2015, lower than expected salary growth resulted in lowering the UAAL by $283 million. Another factor that contributed to the decline in UAAL was having lower than expected COLA increases in benefit payments. Low inflation is still being experienced and as such, the Board granted retirees a 1.5% COLA in 2015 instead of the assumed maximum allowable COLA of 3%. This resulted in a reduction in the UAAL of $119 million. Lastly, additional UAAL contributions were made by OCFA and OC Sanitation District which contributed to a $70 million decrease in UAAL.



# 2016

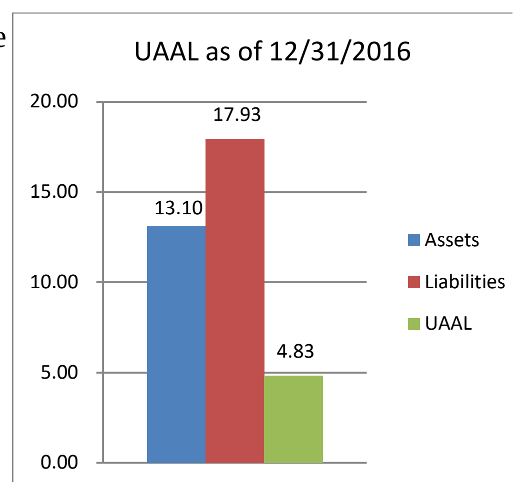
**Development of UAAL for Year Ended December 31, 2016**

| | | | |
|---|---|---|---|
| 1. | **UAAL at beginning of year** | | $4,822,348,000 |
| 2. | Total normal cost at middle of year | | 442,698,000 |
| 3. | Expected employer/member contributions | | (807,757,000) |
| 4. | Interest | | 330,501,000 |
| 5. | Expected UAAL | | $4,787,284,000 |
| 6. | Actuarial (gain)/loss and other changes | | |
| | a. Gain from add'l UAAL contributions | ($13,654,000) | |
| | b. Loss from actual contributions less than expected | 5,142,000 | |
| | c. Loss from investment return | 113,103,000 | |
| | d. Gain from lower than expected COLA increases | (186,039,000) | |
| | e. Loss from higher than expected salary increases | 204,603,000 | |
| | f. Loss from higher than expected retirement experience increases | | |
| | g. Other experience (gain)/loss | 12,631,000 | |
| | | | |
| | h. Total changes | | 43,199,000 |
| 7. | **UAAL at the end of the year** | | $4,830,483,000 |

**IMPACTING EVENTS**

Following three years of successive declines in the amount of OCERS UAAL, the December 31, 2016 valuation found the UAAL grew slightly by approximately $8 million in the last year. The UAAL growth occurred despite the portfolio earning 8.7% or $1,010 million which was higher than the assumed rate of return of 7.25% or $840 million. The resulting $170 million gain on investments for the current year, however, is not recognized immediately. Instead, it is "smoothed" into the actuarial valuation evenly over five years (20% each year). Smoothing of investment gains/losses is one of the actuarial levers used by pension systems to help reduce "cost shocks" by averaging investment performance over a period of time. By utilizing a five year smoothing method for investment gains/losses, plan sponsors are not faced with volatile contribution rates and they are able to budget for cost impacts due to investment performance over time.

The greater than assumed earnings achieved in 2016 does play a positive role in controlling system costs, even with the rise in the UAAL for the current year. By recognizing 20% of the $170 million in gains, or $34 million, in the current year, the amount of deferred investment losses from prior years was reduced. This will continue to be the case for the next four years as the remaining investment gains from 2016 are recognized in future valuations. For example, in the 2015 valuation, there were $169 million of net deferred losses related to investment performance between 2012 and 2015 that were scheduled to be recognized in the 2017 valuation. Now, when adding in the smoothed gains from 2016, the scheduled net deferred losses to be recognized



in the 2017 valuation are reduced to $135 million, a reduction of $34 million.

The future reduction in the recognition of deferred losses for 2017 through 2020 as a result of the 2016 investment gains can be seen when comparing the schedule on page 5 of the 2016 valuation with page 5 of the 2015 valuation.

The schedule above outlines many of the additional events that ultimately impacted the change in the UAAL as of December 31, 2016 when compared to the prior year.

Some employers made additional contributions to pay down their UAAL, resulting in the $13 million reduction. (line 6a)

Despite having earned $170 million more on our investments in 2016 than anticipated, the total smoothed gains and losses over the past five years led to the $113 million total smoothed loss that was recognized this year. (line 6c)

Inflation continues to run below the 3% annual cost of living allowance (COLA) assumption that is built into the valuation of retiree benefits. A 2% COLA was granted to retirees in 2016, which from an actuarial perspective reduced the UAAL by $186 million. The $186 million reduction represents the additional benefits related to COLA that would have otherwise been paid had inflation reached the assumed rate of 3%. (line 6d)

Finally, after having lagged assumptions for several years, salary increases in 2016 began to catch up in a significant way, exceeding the annual assumed projection of salary increases and adding an additional $204 million to the UAAL. (line 6e)

# C-11

# Memorandum

**DATE**: August 8, 2017

**TO**: Members of the Board of Retirement

**FROM**: Jenny Sadoski, Director of Information Technology

**SUBJECT**: **BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN UPDATE**

## Recommendation

Receive and file.

## Update

Since the report provided at the June regular Board meeting, staff have formally kicked off both the colocation and wide-area network (WAN) services and cloud-based telephony projects. Staff has completed contract negotiations with both colocation facility providers and contracts have been signed by OCERS and the respective vendors. Preliminary implementation activities have been completed including finalization of a detailed project plan (see Table 1 below for a timeline overview).

Installation of WAN connectivity between OCERS headquarters and the Irvine colocation facility is complete. Connectivity to the Nevada colocation facility is expected to be complete in mid-September, in line with the project schedule and requirements.

As of August 1, access to the Irvine colocation facility has been granted to identified OCERS staff. Per the project plan, we will be building out the new equipment in the Irvine facility during the month of August and working with our technology partner Sidepath to begin configuration of hardware, software and data replication.

**Table 1: Colocation and WAN Services Project Timeline**

| Colocation and WAN Services Project Phase | Targeted Completion Date |
|---|---|
| Phase I: Preparation of Primary (Irvine) Colocation Facility | end of August 2017 |
| Phase II: Cutover to Primary (Irvine) Colocation Facility | end of October 2017 |
| Phase III: Legacy Equipment Relocation to Secondary (Nevada) Colocation Facility | end of November 2017 |
| Phase IV: Replication to Secondary (Nevada) Colocation Facility | end of December 2017 |
| Phase V: Knowledge Transfer and Project Closing | mid-1$^{st}$ Quarter 2018 |

The ShoreTel cloud-based telephony system implementation is proceeding at a quick pace. Preparations including network quality of service testing, submission of number porting requests and receipt of new IP phones for staff have been completed. A meeting has been scheduled for August 14 to review call flow configuration with the ShoreTel engineer team and Member Services staff, after which the parallel implementation will begin. A final cutover date and training schedule will be identified in the near future; tentatively, we are targeting a date in mid-September.

## Background

At the September 2014 Strategic Planning meeting, OCERS' Board of Retirement directed staff to hire a business continuity consulting firm to provide professional services to assist in the development of a new BC/DR plan. The cost for the professional services was budgeted as part of the OCERS 2015 budget which was reviewed at the OCERS 2014 Budget Workshop and approved at the November 17, 2014 regular Board meeting. The total project was budgeted at $2.3 million. During the 2014 Strategic Planning meeting, staff also received feedback from Board members to avoid the use of public cloud architecture for its core business application.

At the April 15, 2015 regular Board meeting, OCERS staff presented to the Board the results of the business continuity consulting services RFP. The Board approved staff's recommendation to acquire the services of Avalution Consulting for a cost of $102,500 and procurement of the Catalyst online software solution at an annual cost of $3,000. The Avalution project team began work in June 2015, conducting the business impact analysis and developing OCERS' business continuity and disaster recovery plan with staff, including a crisis management plan.

OCERS staff presented the methodology, deliverables and recommendations from Avalution Consulting to the Board at the October 19, 2015 regular Board meeting. Avalution's recommendations, based on industry best practices, were:

1. **Identify Alternate Workspace**
    - Identify solution that can support all personnel required for response and recovery from a disruption.
2. **Develop and Implement Disaster Recovery Capabilities**
    - Identify a suitable alternate location for the data center as well as develop and implement disaster recovery procedures to recover and relocate its network systems.
3. **Develop and Implement a Crisis Management Structure**
    - Establish a crisis management team to lead the response to a disruption event.
    - Implement and document strategies to address a loss of employees who perform critical activities and implement succession planning for critical personnel.
    - Implement and validate (test) work from home or alternate location capabilities.
    - Communicate and train OCERS staff on business continuity planning and procedures.
4. **Develop and Document Manual Workarounds**
    - Document manual workarounds and alternate process procedures and make documents available by storing in Catalyst business continuity software.

At the October 19, 2015 Board meeting, staff presented to the Board the following next steps for the project:

- Develop annual BC/DR testing and maintenance schedule.
- Pursue and implement options for alternate workspaces for OCERS staff in case of disruption of service.
- Draft and implement redundant and high availability solutions for OCERS data center and pursue out of state co-location of OCERS data center.
- Establish communications systems including new Voice-over-IP phone system, to support member communications, reporting, and crisis management.
- Investigate cost and feasibility of building improvement options such power generators and new data center equipment (UPS, HVAC).

In June 2016, OCERS released a RFP for IT BC/DR implementation services which received four responses and culminated in the selection in July 2016 of Sidepath as our technology partner for this initiative.

At the 2016 budget workshop held on October 22, 2015, staff included $2 million in the proposed budget for the continuation of the BC/DR project. The project budget was approved by the Board as part of the 2016 Administrative Budget at the November 16, 2015 regular Board meeting.

Staff then provided an update to the Board on the progress of the BC/DR project as described above as a consent item at the August 15, 2016 Board meeting.

At the October 17, 2016 regular Board meeting, staff presented the plan to move forward with the primary and secondary data center relocation, including detailed discussion on potential options. Staff recommended a hybrid (public/private) cloud architecture for the data center.

At the November 14, 2016 regular Board meeting, the Board approved staff's recommendation to establish a hybrid (private/public) cloud infrastructure solution, relocate the primary OCERS data center to a local, professionally-managed facility, establish a secondary site out-of-state and implement a public cloud-based telephony system in order to enhance OCERS' business continuity and disaster recovery capabilities at a cost not to exceed the 2017 budgeted amount of $1.235 million. At that meeting, the Board requested bi-monthly status updates to be included in the consent agenda.

On November 21, 2016, OCERS issued a purchase order to our technology partner, Sidepath, to allow them to begin procurement of the hardware, software and support required for the project. The bill of materials for this procurement was subject to a competitive bid process for which we received three responses.

At the March 20, 2017 regular Board meeting, staff reported that we had completed procurement of the hardware, software and training required for the data center colocation project at a total cost of $654,276.88. Additionally, it was noted that staff was working closely with our technology partner, Sidepath, to review responses to the RFP used to select a vendor to provide the local and out-of-state colocation facilities and WAN connectivity services.

At the May 15, 2017 regular Board meeting, staff reported that selection of colocation site vendors and a WAN connectivity provider had been completed and contract negotiations had begun with each vendor. Additionally, IT staff, working with OCERS staff, particularly Member Services and Executive Management, obtained approval to migrate the on-premise ShoreTel telephony system to the ShoreTel Connect CLOUD system.

At the June 12, 2017 regular Board meeting, in response to questions raised by the Board at the May 15 regular Board meeting, staff presented an overview of the business continuity and disaster recovery plan and the current status of the project. Following presentation of the information, the Board reaffirmed their approval of the project and directed staff to continue their efforts.

OCERS has defined a budget of $1.235 million in 2017 to proceed with a hybrid cloud solution which includes the costs shown in Table 2.

**Table 2: Approved 2017 Purchase Costs and Actuals-to-Date**

| Description | Estimated Expenses | Actual Expenses-to-Date |
|---|---|---|
| Hardware and Software | $ 671,000.00 | $ 650,196.19 |
| Professional Services | $ 80,000.00 | $ - |
| Staff Training | $ 4,000.00 | $ 4,080.69 |
| Public Cloud-based Telephony System | $ 250,000.00 | $ - |
| Initial Setup and First Year Recurring Costs | $ 140,000.00 | $ 68,450.00* |
| Contingency | $ 90,000.00 | $ - |
| **Total** | **$ 1,235,000.00** | **$ 722,726.88** |

* These expenses have not been incurred; rather, they represent the contractually negotiated costs for initial setup and first year recurring costs.

## Submitted by:

OCERS J.S. - Approved

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Jenny Sadoski
OCERS Director of Information Technology

# C-12

# Memorandum

**DATE**: August 9, 2017

**TO**: Members of the Board of Retirement

**FROM**: Tracy Bowman, Director of Finance

**SUBJECT**: **SECOND QUARTER UNAUDITED FINANCIAL STATEMENTS FOR SIX MONTHS ENDED JUNE 30, 2017**

## Recommendation

Receive and file.

## Background/Discussion

The attached financial statements reflect the unaudited activity for the six months ended June 30, 2017. These statements are unaudited and are not the official statements of OCERS. The following statements represent a review of the progress to date through the second quarter of 2017. The official financial statements of OCERS are included in the Comprehensive Annual Financial Report (CAFR) as of and for the year ended December 31, 2016, which is available on our website, www.ocers.org.

## Summary

### Fiduciary Net Position

As of June 30, 2017, the net position restricted for pension and other postemployment benefits is $14.0 billion, an increase of $1.8 billion from June 30, 2016. The change is a result of an increase in total assets of $1.9 billion off-set by an increase in total liabilities of $97.3 million as described below:

The $1.9 billion increase in total assets can be attributed to a $1.8 billion increase in investments at fair value, a $152.9 million increase in total cash and cash equivalents, off-set by decreases of $51.3 million in receivables, and $2.0 million in capital assets.

Investments at fair value increased $1.8 billion. The increase can be attributed to earnings from interest and dividends, investment of proceeds received from employee and employer contributions, including prepaid contributions, and increases in the net appreciation of investments at fair value. In January 2017 the OCERS' Investment Committee adopted a more simplified asset allocation policy. The new policy is structured to increase investments in the areas of private equity, core fixed income and real assets, while decreasing or eliminating investments in diversified credit and absolute return. The new asset allocation policy is reflected in the investments at fair value section in the statement of fiduciary net position. The Investment Committee also made the decision to exit a number of hedge funds in light of high fees and low returns. As a result of this new policy, allocation of assets to the categories of global public equity (which includes investments formerly classified as domestic equity, international equity and global equity) and core fixed income (formerly classified as domestic fixed income) have increased while allocation of assets to real estate, real return and absolute return investment categories were decreased.

The increase of $152.9 million in cash and short-term investments is due to a difference in the timing of investing contributions at month-end and an increase in collateral related to the securities lending program.

The decrease in the receivable balance is primarily related to the timing of pending securities sales which decreased by $37 million. Investment income receivables, contribution receivables and foreign currency forward contracts, have decreased by $8 million, $2 million and $4 million respectively. In prior years foreign currency forward contracts were presented net with asset and liability positions offsetting each other. The asset or liability positions of these contracts are now presented separately. In 2017 the majority of foreign currency forward contracts are in a payable position. In 2016 OCERS held both receivable and payable positions in these contracts which netted to a receivable position.

The $2 million decrease in capital assets represents accumulated depreciation on the Pension Administration System Solution (PASS) Project, also known as V3. Depreciation expense related to capital assets is approximately $2 million annually, with the majority of the expense related to V3.

The increase of $97 million in total liabilities as of June 30, 2017 compared to June 30, 2016 can be attributed to increases in the securities lending program of $84 million and in the accrued investment management fees, included in other liabilities, of $8 million. Additionally, an increase in prepaid contributions of $39 million is offset by a decrease of $38 million in unsettled trades at the end of the quarter. Retiree payroll payable increased $4 million with gradual increases to retiree payroll payable to be expected as the number of participants in the plan and retiree benefits increase.

**Statement of Changes in Fiduciary Net Position**

The ending net position as of June 30, 2017 has increased by $1.8 billion, or 14.3 percent, when compared to the same period ending June 30, 2016. The increase can be attributed to positive returns in the second half of 2016 and the first half of 2017. For the quarter ended June 30, 2017 the preliminary return is 7.12 percent, compared to a preliminary return of 2.84 percent for the first six months in 2016.

Net investment income for the six months ended June 30, 2017 is $923 million versus $347 million for the six months ended June 30, 2016, an increase of $576 million. The majority of the increase is related to the net appreciation in fair value of investments. Dividends increased $6 million, which was offset by decreases in interest, real estate income and alternative investments income which can be attributed to a decrease in the types of investment holdings that produced this income due to the newly adopted asset allocation policy. All major investment categories experienced positive returns in the six months ended June 30, 2017. Investment fees and expenses increased by $17 million from June 30, 2016 to June 30, 2017 primarily due to reporting an additional 20 investment managers with “at source” identifiable management fees that were previously netted against investment returns.

Total deductions from fiduciary net position increased 5.9 percent, or $23 million, from the previous year. Participant benefits represents almost the entire increase and an increase is expected due to the continued and anticipated growth in member pension benefit payments, both in the total number of OCERS's retired members receiving a pension benefit and an increase in the average benefit received. The average monthly retirement payroll has increased approximately $3 million per month. Death benefits have increased slightly. Member withdrawals and refunds, and administrative expenses decreased. The decrease in administrative expenses is primarily in the professional services category, including legal fees for pending litigation and post-go-live audit fees associated with the data migration audit from Pension Gold to V3.

**Other Supporting Schedules**

In addition to the basic financial statements for the six months ended June 30, 2017, the following supporting schedules are provided for additional information pertaining to OCERS:

- Total Fund Reserves
- Pension Trust Fund Contributions
- Schedule of Investment Expenses (new format for investment management fees)
- Schedule of Administrative Expenses
- Administrative Expense Compared to Actuarial Accrued Liability (21 basis points test).

**Submitted by:**

OCERS T.B. - Approved

Tracy Bowman
Director of Finance

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**

**Unaudited Financial Statements**

**For the Six Months Ended June 30, 2017**

**ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM**

Unaudited Financial Statements
For the Six Months Ended June 30, 2017

Table of Contents

**Statement of Fiduciary Net Position**
As of June 30, 2017
(with summarized comparative amounts as of June 30, 2016)
(Dollars in Thousands)

| | Pension Trust Fund | Health Care Fund-County | Health Care Fund-OCFA | OPEB 115 Agency Fund | Total Fund | Comparative Totals 2016 |
|---|---|---|---|---|---|---|
| **ASSETS** | | | | | | |
| Cash and Short-Term Investments | | | | | | |
| Cash and Cash Equivalents | $ 468,071 | $ 8,853 | $ 1,274 | $ 156 | $ 478,354 | $ 408,941 |
| Securities Lending Collateral | 237,508 | 4,492 | 646 | - | 242,646 | 159,140 |
| Total Cash and Short-Term Investments | 705,579 | 13,345 | 1,920 | 156 | 721,000 | 568,081 |
| Receivables | | | | | | |
| Investment Income | 13,377 | 253 | 36 | - | 13,666 | 22,065 |
| Securities Sales | 116,023 | 2,194 | 316 | - | 118,533 | 155,745 |
| Contributions | 19,165 | - | - | - | 19,165 | 21,639 |
| Foreign Currency Forward Contracts | 17 | - | - | - | 18 | 4,163 |
| Other Receivables | 3,288 | 62 | 9 | - | 3,359 | 2,394 |
| Total Receivables | 151,870 | 2,509 | 361 | - | 154,741 | 206,006 |
| Investments at Fair Value | | | | | | |
| Global Public Equity | 5,670,747 | 107,254 | 15,434 | 9,924 | 5,803,359 | 4,675,620 |
| Private Equity | 770,844 | 14,579 | 2,098 | - | 787,521 | 681,100 |
| Core Fixed Income | 1,775,256 | 33,576 | 4,832 | 5,560 | 1,819,224 | 1,247,686 |
| Credit | 2,490,777 | 47,109 | 6,779 | - | 2,544,665 | 2,305,060 |
| Real Assets | 2,134,502 | 40,371 | 5,809 | - | 2,180,682 | 2,179,209 |
| Risk Mitigation | 346,530 | 6,554 | 943 | - | 354,027 | 321,782 |
| Absolute Return | 630,703 | 11,929 | 1,717 | - | 644,349 | 965,218 |
| Total Investments at Fair Value | 13,819,359 | 261,372 | 37,612 | 15,484 | 14,133,827 | 12,375,675 |
| Capital Assets (Net) | 21,696 | - | - | - | 21,696 | 23,722 |
| **Total Assets** | **14,698,504** | **277,226** | **39,893** | **15,640** | **15,031,264** | **13,173,484** |
| **LIABILITIES** | | | | | | |
| Obligations Under Securities Lending Program | 237,508 | 4,492 | 646 | - | 242,646 | 159,140 |
| Securities Purchased | 167,971 | 3,177 | 457 | - | 171,605 | 209,431 |
| Unearned Contributions | 477,000 | - | - | - | 477,000 | 438,306 |
| Foreign Currency Forward Contracts | 830 | 16 | 2 | - | 848 | 1,757 |
| Retiree Payroll Payable | 62,423 | 2,572 | 227 | - | 65,222 | 60,936 |
| Other | 25,740 | 488 | 72 | - | 26,300 | 18,099 |
| Due to Employers | - | - | - | 15,640 | 15,640 | 14,285 |
| **Total Liabilities** | **971,472** | **10,745** | **1,404** | **15,640** | **999,261** | **901,954** |
| **Net Position Restricted for Pension and Other Post-Employment Benefits** | **$ 13,727,032** | **$ 266,481** | **$ 38,489** | **$ -** | **$ 14,032,003** | **$ 12,271,530** |

The accompanying notes are an integral part of these financial statements.

**Statement of Changes in Fiduciary Net Position**

For the Six Months Ended June 30, 2017

(with summarized comparative amounts for the Six Months Ended June 30, 2016)

(Dollars in Thousands)

| | Pension Trust Fund | Health Care Fund-County | Health Care Fund-OCFA | Total Fund | Comparative Totals 2016 |
|---|---|---|---|---|---|
| **ADDITIONS** | | | | | |
| Contributions | | | | | |
| Employer | $ 270,997 | $ 34,625 | $ 1,194 | $ 306,816 | $ 283,158 |
| Employee | 129,034 | - | - | 129,034 | 128,009 |
| Total Contributions | 400,031 | 34,625 | 1,194 | 435,850 | 411,167 |
| Investment Income | | | | | |
| Net Appreciation/(Depreciation) in Fair Value of Investments | 850,264 | 15,040 | 2,390 | 867,694 | 269,070 |
| Interest | 47,485 | 898 | 131 | 48,514 | 56,493 |
| Dividends | 24,301 | 459 | 67 | 24,827 | 18,209 |
| Real Estate Income | 6,784 | 128 | 19 | 6,931 | 12,774 |
| Alternative Investments | 11,154 | 211 | 31 | 11,396 | 12,453 |
| Other Investment Income | 1,000 | 19 | 3 | 1,022 | 220 |
| Securities Lending Income | | | | | |
| Gross Earnings | 1,529 | 29 | 4 | 1,562 | 688 |
| Less: Borrower Rebates and Bank Charges | (710) | (13) | (2) | (725) | (258) |
| Net Securities Lending Income | 819 | 16 | 2 | 837 | 430 |
| Total Investment Income | 941,807 | 16,771 | 2,643 | 961,221 | 369,649 |
| Investment Fees and Expenses | (37,696) | (712) | (104) | (38,512) | (23,363) |
| Net Investment Income/(Loss) | 904,111 | 16,059 | 2,539 | 922,709 | 346,286 |
| **Total Additions** | **1,304,142** | **50,684** | **3,733** | **1,358,559** | **757,453** |
| **DEDUCTIONS** | | | | | |
| Participant Benefits | 370,750 | 15,996 | 2,066 | 388,812 | 365,574 |
| Death Benefits | 317 | - | - | 317 | 210 |
| Member Withdrawals and Refunds | 7,044 | - | - | 7,044 | 7,422 |
| Administrative Expenses | 8,206 | 11 | 16 | 8,233 | 8,811 |
| **Total Deductions** | **386,317** | **16,007** | **2,082** | **404,406** | **382,017** |
| Net Increase | **917,825** | **34,677** | **1,651** | **954,153** | **375,436** |
| Net Position Restricted For Pension and Other Post-Employment Benefits, Beginning of Year | 12,809,207 | 231,804 | 36,838 | 13,077,850 | 11,896,094 |
| **Ending Net Position Restricted For Pension and Other Post-Employment Benefits** | **$ 13,727,032** | **$ 266,481** | **$ 38,489** | **$ 14,032,003** | **$ 12,271,530** |

The accompanying notes are an integral part of these financial statements.

**Total Fund Reserves**

For the Six Months Ended June 30, 2017

(with summarized comparative amounts for the Six Months Ended June 30, 2016)

(Dollars in Thousands)

| | 2017 | 2016 |
|---|---|---|
| Pension Reserve | $ 8,424,565 | $ 8,136,895 |
| Employee Contribution Reserve | 2,970,364 | 2,773,614 |
| Employer Contribution Reserve | 2,135,092 | 1,716,701 |
| Annuity Reserve | 1,360,651 | 1,206,943 |
| Health Care Reserve | 304,970 | 250,624 |
| County Investment Account (POB Proceeds) Reserve | 125,876 | 111,639 |
| Orange County Sanitation District UAAL Deferred Reserve | 34,067 | - |
| Contra Account | (1,323,582) | (1,924,886) |
| **Net Position - Total Fund** | **$ 14,032,003** | **$ 12,271,530** |

**Schedule of Contributions**

For the Six Months Ended June 30, 2017

(with summarized comparative amounts for the Six Months Ended June 30, 2016)

(Dollars in Thousands)

| | 2017 | | | 2016 | |
|---|---|---|---|---|---|
| | Employee | Employer | | Employee | Employer |
| **Pension Trust Fund Contributions** | | | | | |
| County of Orange | $ 101,487 | $ 203,403 | | $ 101,790 | $ 201,663 |
| Orange County Fire Authority | 10,244 | 43,917 | [1] | 8,642 | 32,688 |
| Superior Court of California, County of Orange | 7,807 | 15,133 | | 7,981 | 16,176 |
| Orange County Transportation Authority | 4,433 | 11,827 | | 4,561 | 12,515 |
| Orange County Sanitation District | 3,611 | 3,795 | | 3,601 | 5,829 |
| UCI Medical Center and Campus | - | 1,427 | [2] | 1 | 5 |
| City of San Juan Capistrano | 400 | 1,171 | | 366 | 1,107 |
| Orange County Employees Retirement System | 440 | 944 | | 464 | 1,023 |
| Transportation Corridor Agencies | 351 | 864 | | 336 | 813 |
| Orange County Department of Education | - | 344 | [2] | - | - |
| Orange County Public Law Library | 83 | 153 | | 84 | 162 |
| Orange County Children & Family Commission | 42 | 130 | | 57 | 172 |
| Orange County In-Home Supportive Services Public Authority | 57 | 101 | | 47 | 96 |
| Orange County Cemetery District | 61 | 81 | | 59 | 77 |
| Orange County Local Agency Formation Commission | 18 | 61 | | 20 | 69 |
| Contributions Before Prepaid Discount | 129,034 | 283,351 | | 128,009 | 272,395 |
| Prepaid Employer Contribution Discount | - | (12,354) | | - | (11,968) |
| **Total Pension Trust Fund Contributions** | **129,034** | **270,997** | | **128,009** | **260,427** |
| **Health Care Fund - County Contributions** | **-** | **34,625** | | **-** | **21,615** |
| **Health Care Fund - OCFA Contributions** | **-** | **1,194** | | **-** | **1,116** |
| **Total Contributions** | **$ 129,034** | **$ 306,816** | | **$ 128,009** | **$ 283,158** |

1 Unfunded actuarial accrued liability payments were made in 2017 of $11.5 million for the Orange County Fire Authority.

2 Unfunded actuarial accrued liability payments have been made in accordance with a separate 20-year level dollar payment schedule to include liabilities for employee benefits related to past service credit.

**Schedule of Investment Expenses**
For the Six Months Ended June 30, 2017
(with summarized comparative amounts for the Six Months Ended June 30, 2016)
(Dollars in Thousands)

| | 2017 | 2016 |
|---|---|---|
| **Investment Management Fees*** | | |
| **Global Public Equity** | | |
| U.S. Equity | $ 801 | $ 457 |
| Global Equity | 432 | 507 |
| International Equity | 2,227 | 1,330 |
| Emerging Markets Equity | 1,886 | 1,563 |
| **Total Global Public Equity** | 5,346 | 3,857 |
| **Core Fixed Income** | | |
| U.S. Fixed Income | 1,226 | 1,456 |
| **Total Core Fixed Income** | 1,226 | 1,456 |
| **Credit** | | |
| High Yield | 457 | 442 |
| Emerging Market Debt | 338 | - |
| Direct Lending | 2,472 | 390 |
| Mortgage | 2,565 | - |
| Multi-Strategy | 2,215 | 1,547 |
| Non-U.S. Direct Lending | 554 | 197 |
| **Total Credit** | 8,601 | 2,576 |
| **Real Assets** | | |
| Real Estate | 7,706 | 2,197 |
| Real Return | | |
| Timber | 665 | 795 |
| Agriculture | 514 | 446 |
| Commodities | | 119 |
| Infrastructure | 158 | - |
| Energy | 2,329 | 1,177 |
| Total Real Return | 3,666 | 2,537 |
| **Total Real Assets** | 11,372 | 4,734 |
| **Absolute Return** | | |
| Direct Hedge Fund | 2,043 | 1,005 |
| GTAA | 1,093 | 1,078 |
| **Total Absolute Return** | 3,136 | 2,083 |
| **Private Equity** | 2,038 | 565 |
| **Risk Mitigation** | 2,532 | 1,919 |
| **Total Investment Management Fees** | **34,251** | **17,190** |
| **Foreign Income Tax and Other Fund Expenses** | **2,751** | **4,265** |
| **Other Investment Expenses (Expenses Not Subject to the Statutory Limit)** | | |
| Consulting/Research Fees | 535 | 670 |
| Investment Department Expenses | 530 | 726 |
| Legal Costs | 262 | 334 |
| Custodian Services | 150 | 150 |
| Investment Service Providers | 33 | 28 |
| **Total Other Investment Expenses** | **1,510** | **1,908** |
| **Security Lending Activity** | | |
| Security Lending Fees | 208 | 158 |
| Rebate Fees | 517 | 100 |
| **Total Security Lending Activity** | **725** | **258** |
| **Total Investment Expenses** | **$ 39,237** | **$ 23,621** |

Note: New schedule format for investment management fees to reflect the new investment allocation adopted in 2017.

* Does not include undisclosed fees deducted at source.

**Schedule of Administrative Expenses**
For the Six Months Ended June 30, 2017
(with summarized comparative amounts for the Six Months Ended June 30, 2016)
(Dollars in Thousands)

| | 2017 | 2016 |
|---|---|---|
| **Pension Trust Fund Administrative Expenses** | | |
| **Expenses Subject to the Statutory Limit** | | |
| Personnel Services | | |
| Employee Salaries and Benefits | $ 4,851 | $ 4,776 |
| Board Members' Allowance | 8 | 7 |
| Total Personnel Services | 4,859 | 4,783 |
| Office Operating Expenses | | |
| Depreciation/Amortization | 1,146 | 1,160 |
| Professional Services | 726 | 1,206 |
| Operating Expenses | 672 | 561 |
| Rent/Leased Real Property | 228 | 405 |
| Total Office Operating Expenses | 2,772 | 3,332 |
| **Total Expenses Subject to the Statutory Limit** | **7,631** | **8,115** |
| **Expenses Not Subject to the Statutory Limit** | | |
| Information Technology Consulting | 409 | 443 |
| Actuarial Fees | 98 | 179 |
| Equipment / Software | 68 | 52 |
| **Total Expenses Not Subject to the Statutory Limit** | **575** | **674** |
| **Total Pension Fund Administrative Expenses** | **8,206** | **8,789** |
| **Health Care Fund - County Administrative Expenses** | **11** | **11** |
| **Health Care Fund - OCFA Administrative Expenses** | **16** | **11** |
| **Total Administrative Expenses** | **$ 8,233** | **$ 8,811** |

## Administrative Expense Compared to Actuarial Accrued Liability

For the Six Months Ended June 30, 2017

(Dollars in Thousands)

| 2016 Administrative Expense Compared to Actuarial Accrued Liability | | |
|---|---|---|
| Projected Actuarial Accrued Liability (AAL) as of December 31, 2016 | $ | 17,967,005 |
| Maximum Allowed For Administrative Expense (AAL * 0.21%) | | 37,731 |
| Actual Administrative Expense [1] | | 7,631 |
| Excess of Allowed Over Actual Expense | | 30,100 |
| Actual Administrative Expense as a Percentage of Projected Actuarial Accrued Liability | | 0.04% |
| Actual Administrative Expense as a Percentage of Projected Actuarial Accrued Liability as of prior year | | 0.05% |

[1] Administrative Expense Reconciliation

| | | |
|---|---|---|
| Administrative expense per Statement of Changes in Fiduciary Net Position | $ | 8,206 |
| Less administrative expense not considered per CERL section 31596.1 | | (575) |
| Administrative Expense allowable under CERL section 31580.2 | $ | 7,631 |

# C-13

# Memorandum

**DATE**: August 10, 2017

**TO**: Members of the Board of Retirement

**FROM**: Tracy Bowman, Director of Finance

**SUBJECT**: **SECOND QUARTER 2017 BUDGET TO ACTUALS REPORT**

## Recommendation

Receive and file.

## Highlights

Second Quarter Target: 50% Used /50% Remaining

| | Actuals to Date | Annual Budget | Budget $ Remaining | Budget % Remaining |
|---|---|---|---|---|
| **Administrative Budget** | | | | |
| Personnel Costs | $4,859,686 | $10,998,091 | $6,138,405 | 55.8% |
| Services and Supplies | 2,103,228 | 6,072,360 | 3,969,132 | 65.4% |
| Capital Expenditures | 221,617 | 1,293,000 | 1,071,383 | 82.9% |
| Administrative Expense Total | $7,184,531 | $18,363,451 | $11,178,920 | 60.9% |

| | Actuals to Date | Annual Budget | Budget $ Remaining | Budget % Remaining |
|---|---|---|---|---|
| **Investment Budget** | | | | |
| Personnel Costs | $503,771 | $1,419,337 | $915,566 | 64.5% |
| Services and Supplies | 25,114 | 150,757 | 125,643 | 83.3% |
| Professional Services* | 35,330,294 | 41,221,555 | 5,891,261 | 14.3% |
| Investment Expense Total | $35,859,179 | $42,791,649 | $6,932,470 | 16.2% |

| **Grand Total** | Actuals to Date | Annual Budget | Budget $ Remaining | Budget % Remaining |
|---|---|---|---|---|
| Personnel Costs | $5,363,457 | $12,417,428 | $7,053,971 | 56.8% |
| Services and Supplies | 2,128,342 | 6,223,117 | 4,094,775 | 65.8% |
| Capital Expenditures-Administrative | 221,617 | 1,293,000 | 1,071,383 | 82.9% |
| Professional Services-Investments* | 35,330,294 | 41,221,555 | 5,891,261 | 14.3% |
| Grand Total | $43,043,710 | $61,155,100 | $18,111,390 | 29.6% |

*Professional Services-Investments consists primarily of investment management fees, both direct and known at-source fees. At the June 8, 2017 Governance Committee Meeting, the Governance Committee approved revisions to the policy to exclude investment management related fees from OCERS' annual administrative budget. The Board of Retirement adopted the Governance Committee's recommendation to approve the revised Budget Approval Policy at the July 17, 2017 Board meeting. In accordance with the revised Budget Approval Policy, at the August 21, 2017 Regular Board Meeting, staff will propose a budget amendment to remove investment management fees that were originally included in OCERS' Administrative and Investment Budget for 2017.

## Background/Discussion

The Board of Retirement approved OCERS' Administrative and Investment Budgets for Fiscal Year 2017 (FY17) on November 14, 2016, in the amount of $61,155,100; $18,363,451 for administration and $42,791,649 for investment related activities.

OCERS' budgeting authority is regulated by California Government Code Sections 31580.2 and 31596.1, including a provision that OCERS' budget for administrative expenses (which excludes investment related costs and expenditures for computer software, hardware and related technology consulting services) is limited to twenty-one hundredths of one percent of the accrued actuarial liability of the retirement system (commonly referred to as the 21 basis point test). The approved FY17 administrative budget represents 8.55 basis points of the projected actuarial accrued liability. The budget also meets OCERS' Board policy limitation of 18 basis points of the projected actuarial value of total assets and represents 14.56 basis points of these assets for FY17.

The Chief Executive Officer, or the Assistant CEO, has the authority to transfer funds within the three broad categories of the budget: 1) Salaries and Benefits, 2) Services and Supplies, and 3) Capital Projects. Funds may not be moved from one category to another without approval from the Board of Retirement.

### *Administrative Summary*

For the six months ended June 30, 2017, year-to-date actual administrative expenses were $7,184,531 or 39.1% of the $18,363,451 administrative budget and below the 50% target set for the end of the second quarter (six months ended June 30, 2017/twelve months for the year ending December 31, 2017). A summary of all administrative expenses (excluding investments) and explanations of significant variances are provided below:

**Summary of all Administrative Expenses (excluding Investments)**
**For the Six Months Ended June 30, 2017**

| | Actuals to Date | Annual Budget | Balance Remaining | % of Budget Used | Prorated Budget* | Prorated Budget vs. Actuals (Over)/Under |
|---|---|---|---|---|---|---|
| **Personnel Costs** | **$4,859,686** | **$10,998,091** | **$6,138,405** | **44.2%** | **$5,499,046** | **639,360** |
| **Services and Supplies** | | | | | | |
| Bldg. Prop. Mgmt./Maintenance | 196,952 | 682,000 | 485,048 | 28.9% | 341,000 | 144,048 |
| Equipment Lease | 30,699 | 90,000 | 59,301 | 34.1% | 45,000 | 14,301 |
| Equipment Maintenance | 267,380 | 680,400 | 413,020 | 39.3% | 340,200 | 72,820 |
| Equipment/Software Expenses | 67,624 | 149,500 | 81,876 | 45.2% | 74,750 | 7,126 |
| Legal Services | 160,031 | 625,000 | 464,969 | 25.6% | 312,500 | 152,469 |
| Meetings & Mileage | 12,582 | 57,350 | 44,768 | 21.9% | 28,675 | 16,093 |
| Membership/Periodicals | 97,444 | 137,825 | 40,381 | 70.7% | 68,913 | (28,531) |
| Office Supplies | 25,804 | 47,000 | 21,196 | 54.9% | 23,500 | (2,304) |
| Postage | 49,104 | 163,000 | 113,896 | 30.1% | 81,500 | 32,396 |
| Printing | 40,495 | 99,000 | 58,505 | 40.9% | 49,500 | 9,005 |
| Professional Services | 975,604 | 2,800,200 | 1,824,596 | 34.8% | 1,400,100 | 424,496 |
| Telephone | 60,999 | 80,000 | 19,001 | 76.2% | 40,000 | (20,999) |
| Training | 118,510 | 461,085 | 342,575 | 25.7% | 230,543 | 112,033 |
| **Services and Supplies** | **2,103,228** | **6,072,360** | **3,969,132** | **34.6%** | **3,036,181** | **932,953** |
| **Administrative Expense-Sub Total** | **6,962,914** | **17,070,451** | **10,107,537** | **40.8%** | **8,535,227** | **1,572,313** |
| **Capital Expenditures**** | **221,617** | **1,293,000** | **1,071,383** | **17.1%** | **646,500** | **424,883** |
| **Administrative Expense Total** | **$7,184,531** | **$18,363,451** | **$11,178,920** | **39.1%** | **$9,181,727** | **$1,997,196** |

*Prorated budget represents 50% (6 months/12 months) of the annual budget.
**Capital expenditures represent purchases of assets to be amortized in future periods.

## Personnel Costs - Administrative

Personnel Costs incurred as of the second quarter were approximately $4.9 million or 44.2% of the annual budget and below the 50% target for budget used for this category. These expenses are below budget due to several positons that were vacant in the Administrative Services, Disability, Legal, Member Services, and IT departments, including a Staff Assistant and Disability Investigator which became vacant in the second quarter; a Retirement Analyst, two Senior Retirement Program Specialists, and a Senior IT Applications Developer; as well as a Deputy Chief Legal Officer and an Office Technician which were filled during the second quarter.

## Services and Supplies - Administrative

Total expenditures for services and supplies were approximately $2.1 million or 34.6% of the annual budget for this category. The variance of $932,953 between the pro-rated budget and year-to-date actuals in this category is primarily due to the following:

- Building Property Mgmt./Maintenance costs utilized 28.9% of the annual budget and were lower than the pro-rated budget by $144,048. This is mainly due to proceeds received from OCERS Headquarters' property manager for reimbursement of funding that exceeded the property management established reserves for maintenance of the building.

- Equipment Lease is at 34.1% of the annual budget and lower than the pro-rated budget by $14,301. This is attributable to lease costs coming in less than budget primarily due to budgeted costs being based on usage of the old copiers that were replaced last year and shortly before the 2017 budget estimates were developed, as well as a reduction of in-house printing jobs.
- Equipment Maintenance costs are at 39.3% of the annual budget and are lower than the pro-rated budget by $72,820. This is attributable to the timing of budgeted costs that have not yet been incurred, primarily IT software maintenance/license fees which have varying renewal timelines throughout the year.
- Equipment/Software expense utilized 45.2% of the annual budget and is lower than the pro-rated budget by $7,126. This is primarily due to the timing of purchases of equipment and software that have been budgeted but not yet expensed.
- Legal Services are at 25.6% of the annual budget and are lower than the pro-rated budget by $152,469. This is primarily due to budgeted legal services being utilized on an as-needed basis.
- Meetings & Mileage expense is at 21.9% of the annual budget and is lower than the pro-rated budget by $16,093. This is primarily due to budgeted meetings that have not yet been expensed, including manager visits to Southern California Retirement Systems, legislative meetings, and travel for plan sponsor audits.
- Memberships/Periodical expense is at 70.7% of the annual budget and higher than the pro-rated budget by $28,531. This is mainly due to the timing of membership and periodical expenses, including IT's subscription fees for Gartner which were renewed during the second quarter.
- Office Supplies utilized 54.9% of the annual budget and is slightly higher than the pro-rated budget by $2,304. This is primarily due to the timing of office furniture purchases.
- Postage is at 30.1% of the annual budget and lower than the pro-rated budget by $32,396. This is attributable to the timing of bulk mailings to Plan members, the summer edition of *At Your Service* newsletter which will be incurred during the third quarter, and the use of postage on an as-needed basis.
- Printing expense is at 40.9% of the annual budget and lower than the pro-rated budget by $9,005. This is primarily due to the timing of printing expenses budgeted for the CAFR, which is expected to be completed in the third quarter, as well as company brochures.
- Professional Services utilized 34.8% of the annual budget. Expenses are lower than the pro-rated budget by $424,496 primarily due to the timing of expenses for various IT-related software consulting, administrative hearing and writ of mandate process fees, as well as costs used on an as-needed-basis, such as CEO contingency.
- Telephone expense is at 76.2% of the annual budget and higher than the pro-rated budget by $20,999. This is primarily due to telephone rate increases incurred as a result of not signing up for additional long term agreements with a telephone service provider as OCERS is in the process of migrating to a cloud-based telephone system. Once this migration is complete, the cost savings are anticipated to offset the current higher fees that OCERS is paying.
- Training utilized 25.7% of the annual budget and is lower than the pro-rated budget by $112,033. This is primarily due to training costs that have been budgeted but not yet expensed, including the Southern California SACRS and CALAPRS conferences, strategic planning, annual subscription to IT online training, and various training sessions planned for personnel to be taken later in the year.

**Capital Expenditures - Administrative**

Capital Expenditures as of the second quarter are $221,617 or 17.1% of the annual budget for this category. The variance of $424,883 between the pro-rated budget and year-to-date actuals is primarily due to timing of budgeted costs for the Business Continuity/Disaster Recovery Planning project that will occur as the year progresses.

### *Investment Summary*

For the six months ended June 30, 2017, year-to-date actual investment expenses are approximately $35.9 million or 83.8% of the $42,791,649 annual investment budget and over budget by approximately $14.5 million. A summary of all investment expenses and explanations of significant variances are provided below:

**Summary of all Investment Expenses**
**For the Six Months Ended June 30, 2017**

| | Actuals to Date | Annual Budget | Balance Remaining | % of Budget Used | Prorated Budget* | Prorated Budget vs. Actuals (Over)/Under |
|---|---|---|---|---|---|---|
| **Personnel Costs** | **$503,771** | **$1,419,337** | **$915,566** | **35.5%** | **$709,669** | **$205,898** |
| **Services and Supplies** | | | | | | |
| Due Diligence | 3,299 | 44,110 | 40,811 | 7.5% | 22,055 | 18,756 |
| Equipment/Software Expenses | 12,540 | 25,680 | 13,140 | 48.8% | 12,840 | 300 |
| Meetings & Mileage | 4,242 | 10,000 | 5,758 | 42.4% | 5,000 | 758 |
| Membership/Periodicals | 4,031 | 11,507 | 7,476 | 35.0% | 5,754 | 1,723 |
| Training | 1,002 | 59,460 | 58,458 | 1.7% | 29,730 | 28,728 |
| **Services and Supplies** | **25,114** | **150,757** | **125,643** | **16.7%** | **75,379** | **50,265** |
| **Investment Expense-Sub Total** | **528,885** | **1,570,094** | **1,041,209** | **33.7%** | **785,048** | **256,163** |
| Professional Services** | 35,330,294 | 41,221,555 | 5,891,261 | 85.7% | 20,610,778 | (14,719,516) |
| **Investment Expense Total** | **$35,859,179** | **$42,791,649** | **$6,932,470** | **83.8%** | **$21,395,826** | **($14,463,353)** |

*Prorated budget represents 50% (6 months/12 months) of the annual budget.

**Professional services excludes unbudgeted professional service actual expenses of foreign income tax / other and security lending fees totaling approximately $2.8 million and $725,000, respectively.

### Personnel Costs - Investments

Personnel costs are $503,771 or 35.5% of the annual budget for this category. The expenses are lower than the 50% target primarily due to the vacant CIO position, which was filled at the end of the second quarter.

### Services and Supplies - Investments

Services and Supplies expenditures, excluding professional services that are discussed separately below, are $25,114 or 16.7% of the annual budget for this category. This is primarily due to expenses coming in below the 50% target for training and due diligence travel due to vacancy of the CIO position and timing of budgeted travel that will occur later in the year.

**Professional Services - Investments**

Professional services, which consist primarily of investment management fees, are approximately $35.3 million or 85.7% of the annual budget and higher than the pro-rated budget by approximately $14.7 million. The variance relates to investment management fees coming in higher than estimated. The higher investment management fees are primarily a result of an increase in the number of investment managers' reporting non-cash investment fees on their client statements. Although the amount of fees paid (both directly and indirectly) to investment managers is significant, the fees reported as expenses under GAAP are not reasonably estimate-able for budgeting purposes nor are the fees effectively controlled or managed through a budget process. As a result, at the request of the Board of Retirement, the Governance Committee reviewed the Budget Approval Policy on June 8, 2017 and approved revisions to the policy to exclude investment management related fees from OCERS' annual administrative budget and to use the existing OCERS annual Investment Fee Report as a tool to more effectively track, report and manage investment management fees. The Board of Retirement adopted the Governance Committee's recommendation to approve the revised Budget Approval Policy at the July 17, 2017 Board meeting. In accordance with the revised Budget Approval Policy, at the August 21, 2017 Regular Board meeting staff will propose a budget amendment to remove investment management fees in the amount of $38,323,996 that were originally included in OCERS' Administrative and Investment Budget for 2017.

## Conclusion:

Through the end of the second quarter, the Administrative and Investment budgets were below and in excess of the 50% target of their annual budgets at 39.1% and 83.8%, respectively. The Investment budget exceeded the annual budget primarily due to higher than expected investment management fees being reported by certain investment managers, and as previously discussed, staff will propose a budget amendment to remove investment management fees. In addition, actual Administrative expenses were within the 21 basis point test and 18 basis point test as budgeted.

## Submitted by:

OCERS T.B. - Approved

Tracy Bowman
Director of Finance

# C-14

# Memorandum

**DATE**: August 2, 2017

**TO**: Members, Board of Retirement

**FROM**: Brenda Shott, Assistant CEO, Finance & Internal Operations

Tracy Bowman, Director of Finance

**SUBJECT**: **2017 BUDGET AMENDMENT TO EXCLUDE INVESTMENT MANAGEMENT FEES FROM THE OCERS' ANNUAL ADMINISTRATIVE BUDGET**

## Recommendation

Approve an amendment to OCERS' Administrative and Investment Budget for 2017 to exclude investment management fees originally budgeted in the amount of $38,323,996, decreasing the 2017 investment budget from $42,791,649 to $4,467,653 and the overall budget from $61,155,100 to $22,831,104.

## Background/Discussion

At the request of the Board of Retirement, the Governance Committee reviewed the Budget Approval Policy on June 8, 2017, and approved revisions to the policy to exclude investment management related fees from OCERS' annual administrative budget. The Committee's action was based upon staff's recommendation that OCERS discontinue the practice of budgeting for investment management fees and related expenses as part of the annual administrative budget process and instead use the annual Investment Fee Report prepared in accordance with the Board's Investment Fee Policy as the method by which OCERS' investment management costs are and will be tracked, reported and managed. The Board of Retirement adopted the Governance Committee's recommendation to approve the revised Budget Approval Policy at the July 17, 2017 Board meeting.

In accordance with the revised Budget Approval Policy, staff is proposing a budget amendment to remove investment management fees in the amount of $38,323,996 that were originally included in OCERS' Administrative and Investment Budget for 2017. The approval of this budget amendment will decrease the 2017 investment budget from $42,791,649 to $4,467,653 and the overall budget from $61,155,100 to $22,831,104. The proposed amended budget will have no impact on the state mandated 21 basis point test for administrative expenses as the investment budget is excluded from the calculation and will remain at 8.55 basis points of the projected actuarial accrued liability. The proposed amended budget will also still meet OCERS' Budget Approval Policy limitation of 18 basis points of the projected actuarial value of total assets, remaining at 14.56 basis points.

**Submitted by:**

OCERS T.B. - Approved

Tracy Bowman

Director of Finance

**Approved by:**

OCERS B.M.S - Approved

Brenda Shott

Assistant CEO, Finance & Internal Operations

# C-15

# Memorandum

**DATE**: August 21, 2017

**TO**: Members of the Board of Retirement

**FROM**: Gina M. Ratto, General Counsel

**SUBJECT**: **QUARTERLY UPDATE ON SECURITIES LITIGATION CASES**

## Recommendation

Receive and file.

## Background/Discussion

The OCERS Securities Litigation Policy was instituted in December 2003 and most recently updated this year. Under the policy, OCERS generally will only consider taking an active role in securities litigation cases where its losses exceed $1 million. OCERS recently completed a bidding process and selected four law firms to monitor the portfolio and advise staff on securities litigation cases. These four firms, Bernstein, Litowitz, Berger & Grossman; Berman DeValerio; Cohen Milstein; and Barrack, Rodos & Bacine, will provide monitoring services and litigation advice at no direct cost to OCERS. If a firm is engaged to handle a matter on behalf of OCERS, the firm will be paid on a contingency fee basis in amounts agreed to by OCERS and, in class action matters, approved by the court. Other firms may also approach OCERS, and OCERS may seek out other firms to litigate securities matters. The OCERS Legal Department is in the process of reviewing the Securities Litigation Policy, in conjunction with the newly selected monitoring firms, to determine whether to recommend additional changes or refinements to the policy.

Below is an update as of the Second Quarter of 2017, with the status of securities cases in which OCERS is taking an active role, and information about new cases or settlements in the second quarter where OCERS held an interest in the company that is the defendant in the lawsuit or is a member of the class that settled the case.

**ACTIVE CASES**

**In re: Vale S.A. Securities Litigation**

Court: United States District Court for the Southern District of New York, No. 1:15-cv-09539-GHW

Status: Co-Lead Plaintiff (with Alameda County Employees Retirement Association (ACERA))

Counsel: Bernstein Litowitz Berger & Grossmann LLP

Background: This case arises from the catastrophic collapse of the massive Fundão mining dam in the Brazilian state of Minas Gerais, which unleashed millions of tons of toxic mining waste over more than 400 miles across two Brazilian states, killing 19 people, destroying hundreds of homes, polluting numerous rivers and other waterways and drinking water supplies, killing fish and destroying ecosystems. The disaster is widely considered to be Brazil's worst-ever environmental disaster.

Defendant Vale is the world's largest producer of iron ore and operates mines throughout Brazil, both in its own name and through controlled entities and joint ventures. Samarco is one of these controlled entities and operates as a Vale joint venture with partner BHP Billiton. In the years leading up to the collapse, Vale dumped millions of tons of waste from its nearby mines into the Fundão Dam despite numerous warnings from experts and emergency warnings from instruments in the dam's walls. Exacerbating the situation, there was no emergency action plan in place to mitigate any disaster, despite recommendations from experts.

Defendants disclaimed any responsibility for the collapse, falsely claiming that Samarco was a separate company with separate management, suggesting that Vale played no role in Samarco's management. Defendants also denied that Vale and Samarco shared systems, resources, or support functions; but a Brazilian court found Vale likely responsible for the unprecedented environmental damage as both a "direct polluter" and as an "indirect polluter" through its control of Samarco. The Brazilian court ordered Vale to fund a comprehensive recovery plan estimated at more than five billion U.S. dollars to remediate the environmental and societal harm the collapse caused, and froze Vale's Brazilian mining assets to ensure that it complied with its obligations. Throughout the Class Period, Vale and the other Defendants also made repeated false statements about the Company's purported commitment to health, safety, and the environment, assuring investors that the Company had "health, safety and environmental standards and risk management programs and procedures in place to mitigate" the risk of environmental, health, and safety incidents. Defendants also claimed to have adopted "best practices in social and environmental management" and to be focused on "building a positive legacy for communities close to areas where we operate." In truth, Vale did not have programs and procedures in place to mitigate the risk of environmental incidents and did not work with the communities near the Fundão Dam.

This action seeks to recover the more than $1 billion that purchasers of Vale's common and preferred ADRs lost when the market learned of Defendants' false and misleading statements regarding Vale's purported commitment to safety and the environment and the full extent of Vale's use of and responsibility for the Fundão Dam.

Case Update: On March 23, 2017, the District Court issued a 62-page opinion denying most of Defendants' motion to dismiss. Defendants filed a motion for reconsideration, which the Court has not yet ruled on. Plaintiffs' Motion for Class Certification is due September 15, 2017; Defendants' Opposition is due October 27, 2017; and Plaintiffs' Reply is due November 17, 2017. The Fact Discovery Deadline is April 16, 2018. The parties have served their first set of discovery requests. We anticipate that there will be depositions of an OCERS and ACERA official simply to testify about the systems' investments and trading policies and to test Plaintiffs' allegation that they did not have any information about the Defendants' false statements. Additionally, because all of the evidence is in Brazil, third party discovery will likely need to follow the rules set forth under the Hague Convention, so it may be longer than most domestic cases.

**In re BP p.l.c. Securities Litigation**

Court: United States District Court, Southern District of Texas, No. 4:12-CV-3715

Status: Plaintiff in State Law/Opt-Out Action

Counsel: Spector Roseman Kodroff & Willis, PC

Background: This case arises from the *Deepwater Horizon* disaster that began on April 20, 2010, when a massive explosion rocked the deep sea oil rig owned by Transocean Ltd. ("Transocean"), but leased, operated, and controlled by BP, in the Gulf of Mexico, killing eleven crew members and injuring several others. The disaster was exacerbated by the lack of a back-up blowout preventer, which a 2004 study by federal regulators identified as an important safety feature that should be present for the type of deepwater drilling BP conducted in the Gulf of Mexico.

After 87 days, BP finally stemmed the flow of oil, but only after some five million barrels of oil flowed into the Gulf of Mexico, surpassing the Exxon Valdez disaster on its way to becoming the worst environmental disaster in U.S. history.

Despite public representations that BP already had a plan in place to contain a "worst case" oil spill, Defendants adopted a hit-or-miss approach – applying various tactics that were being haphazardly developed – as the spill continued practically unabated. This scattershot approach and BP's failure to control the spill within a reasonable period of time was made worse by the misleading statements of BP's senior officers, including defendants Anthony B. Hayward, BP's Chief Executive Officer at the time, and Douglas Suttles, who was in charge of BP's spill response team. These senior officers obfuscated the impact of the disaster by providing the market with materially false and misleading oil spill figures that were belied by contemporaneous internal BP reports that revealed substantially larger amounts of oil were rushing into the Gulf of Mexico than BP's senior officers had claimed.

A class of Plaintiffs filed a claim against BP for securities fraud. However, BP shares purchased abroad were excluded from the class action because of a 2010 Supreme Court decision, *Morrison v. National Australia Bank Ltd*., which held that federal securities laws (on which securities class actions are brought) does not apply to shares purchased on a foreign exchange. OCERS joined a diverse group of investors who bought BP shares on foreign exchanges to bring an action under Texas state fraud laws against BP in US Courts, including the San Mateo County Employees' Retirement Association; the Royal Borough of Kensington and Chelsea; the Utah Retirement Systems; Verizon Investment Management Corp.; and the International Brotherhood of Teamsters. The court ultimately ruled that the case had to be litigated under English law, and thus the case was converted to a claim for deceit under English Common Law.

Case Update: Although the OCERS group is the largest institutional investor group suing BP in a direct action, it is not the only group. The judge in this matter, Hon. Keith Ellison, is also overseeing several similar direct (i.e., non-class) actions. The various direct actions were filed in tranches. The Tranche 1 claims were filed before the OCERS group launched its action. The OCERS group is part of Tranche 2. There are also several actions that were filed later, which make up Tranche 3. In sum, there are over 130 institutional investors that are participating in the direct actions. Judge Ellison is also overseeing the class action case that recently settled. Because the various direct actions were brought at different times, Judge Ellison has sometimes issued rulings to Tranche 1 that then became applicable to subsequently filed cases.

During the course of the case, counsel has received thousands of pages of documents from BP that were produced by it in other related litigations. In March 2016, counsel served document requests on BP that were unique to our action. At the end of May 2016, BP served document requests regarding their BP investment from January 1, 2006. Counsel is currently engaging BP in negotiations to narrow the scope of the documents and information it requested. Once they have concluded these negotiations, counsel will provide OCERS with search parameters for responsive materials. Counsel has had several discussions with BP's counsel about initially requiring each plaintiff only to produce a limited number of documents.

After a first round of discovery is conducted, test cases comprised of a small cross-section of representative plaintiffs would move forward with full discovery, including depositions. Individual issues, such as reliance, would only be resolved for the representative plaintiffs. Global issues, such as the merits of the pre-spill claims for both ADS and ordinary shares, would be resolved for all of the plaintiffs. These discussions are ongoing and many of the prospective terms and conditions remain undetermined, such as the number of representative plaintiffs, how they are selected, and what effect, if any, this will have on discovery for those plaintiffs not selected to participate in the test cases. No plaintiff depositions have yet been noticed and we are not yet required to produce any documents, although we expect that process will begin soon.

**Banco Espirito Santo Litigation**

Court: Portugal

Counsel: Cohen Milstein Sellers & Toll PLLC

Status: Plaintiff/Claimant in Foreign Action

Background: The Espirito Santo family is a wealthy Portuguese family with large business interests including real estate, hotels, mines, and a large bank in Portugal, Banco Espirito Santo S.A. ("BES"). OCERS invested approximately $7.8 million in BES. The family set up a Swiss entity that allegedly purchased assets from the bank. It appears that the Swiss entity did not provide value for the assets transferred from the bank. The family was the majority shareholder in the Swiss entity and that entity appears to have laundered the assets to return profits to the family members.

In May 2014, entities in the Espirito Santo Group announced that "material irregularities" had been identified in the financial statements of a parent company of the group, Espirito Santo International S.A., a privately held company incorporated under the laws of Luxemburg (hereafter "ESI"). These irregularities consisted of omissions in the accounting of liabilities, overvaluation of assets, non-recognition of provisions for risks and other contingencies, and inadequate accounting records.

The Central European Bank has taken the "good" assets of the bank and transferred them to the Bank of Portugal. The "bad" assets remain with BES and the losses on those assets will be borne by shareholders. Estimated losses of the bank were €3.6 billion as of 7/31/14. This is a revision up from €2.1 billion loss anticipated after the initial report in May. OCERS losses are approximately $3.4 million.

OCERS retained Cohen Milstein Sellers & Toll as liaison counsel and in December 2014, retained DRS Belgium SCRL / CVBA and Deminor Recovery Services (Luxembourg) SaRL (collectively "Deminor") to defend its interests with a view to maximizing the recovery of losses.

Case Update: In July 2016, after several months of continuous exchanges of information and discussions between the Court in Portugal and the lawyers representing Deminor's clients (CMS Rui Pena Arnaut), the service of process has finally been completed. Plaintiffs had faced delaying tactics from certain defendants residing abroad as well as administrative delays in relation to the service of the complaint to one defendant residing in Brazil.

In spite of multiple attempts to accelerate the service of the complaint in Brazil, including many contacts with the Portuguese Foreign Office and local authorities, Deminor came to the decision that the best solution was to withdraw the claim against this one defendant. The consequences of this withdrawal for the claim should however be limited.

On July 22, 2016, the Commercial Court of Lisbon authorized the initiation of BES's liquidation proceedings. The Court also appointed a Committee of Liquidators consisting of MM. César Bento Nunes Brito and Miguel Morais Alçada and Ms. Joana Soares Martins. Portuguese lawyers representing Deminor's clients (CMS Rui Pena Arnaut) filed a claim to protect OCERS' interests.

**Toshiba Litigation**

Court: Japan

Counsel: Grant & Eisenhofer P.A.

Status: Plaintiff/Claimant in Foreign Action

Background: The action against Toshiba arises from its issuance of false and misleading statements with respect to its accounting practices over the past several years. On April 3, 2015, Toshiba disclosed that a "matter requiring investigation" had come to its attention regarding "the percentage-of-completion method of accounting used by the Company in fiscal 2013 . . . in relation to certain infrastructure projects undertaken by the Company." Toshiba later announced that its Special Investigation Committee had identified certain instances "in which the percentage-of-completion method of accounting was used, wherein the total amount of contract cost was underestimated and contract losses (including provisions for contract loss) were not recorded in a timely manner." The Company further explained that "there has emerged a possibility that past financial results for fiscal 2013 or earlier may be corrected, and the Company is currently also ascertaining the amount of the impact on the financial results for fiscal 2014."

On July 20, 2015, Toshiba's Special Investigation Committee (a four-member panel of lawyers and accountants) published a 300-page report ("the Report") finding that Toshiba inflated its operating profit by ¥152 billion between FY2008 and FY2013, a longer period of time and much larger amount than Toshiba's May 13, 2015 estimate. During the period that Toshiba was overstating its earnings, it issued almost ¥1 trillion yen ($8 billion) of stocks and bonds in an effort to raise capital. The company sold ¥333 billion of shares in a public offering in May 2009 and issued ¥640 billion yen of bonds from May 2009 to December 2013.

The Special Investigation Committee found that Toshiba's top executives, both current and former, bore responsibility and played active roles in inflating Toshiba's profits. The Report explained, "The improper accounting procedures were continuously carried out as a de facto policy of the management and it was impossible for anyone to go against the intention amid Toshiba's corporate culture."

These losses are not covered by the jurisdiction of any U.S. court. OCERS sustained losses of approximately $500,000 on its non-U.S. investments in Toshiba during the relevant period.

These losses cannot be recovered in a U.S. proceeding. The action will be brought under applicable articles of the Japanese Financial Instruments & Exchange Act ("FIEA"), as well as under Article 709 of the Japanese Civil Code ("JCC").

Case Update: In June 2016, local counsel filed the first complaint. On April 3, 2017, local counsel completed the filing of the second complaint and asked the court to consolidate both cases in which well over 100 institutional investors are represented, with nearly $600 million in combined damage claims against Toshiba.

At a hearing on April 13, 2017, local counsel filed a brief regarding defendant's false public statements during the Relevant Period. At the hearing, the Court asked local counsel to submit an informational brief on defendant's accounting violations alleged to give rise to the claims. At the end of May, local counsel filed a detailed brief on the technical GAAP violations implicated here. At a hearing on June 13, 2017, the Court informed all parties that it would grant the request to consolidate the two actions. The Court also directed the defendant to submit a reply brief in response to the detailed allegations of accounting violations. The Court set the next hearing for September 6, 2017, after the Court's summer recess.

**Royal Bank of Scotland (RBS) Litigation**

Court: High Court of London

Counsel: Grant & Eisenhofer

Status: Plaintiff/Claimant in Foreign Action

Background: This case is fallout from the global financial crisis. There is strong evidence that RBS materially misled investors from early 2007 through January of 2009 with respect to its true subprime-related credit market exposure, including collateralized debt obligations ("CDOs"). In addition, RBS (i) inflated and failed to properly report events affecting goodwill, and on a massive scale, the reported value of several classes of assets, including assets purchased from Dutch banking group ABN Amro, (ii) falsely claimed to be following International Accounting Standards, and (iii) misrepresented the so-called "synergies" and "goodwill" associated with its ABN Amro acquisition. As these misrepresentations gradually came to light in 2008 and early 2009, RBS lost £44 billion of market value, and many RBS investors lost substantially all of their investments. The reported full-year net loss for 2008 was the largest ever for a UK company, and the largest for any commercial bank anywhere in the world. Further, when RBS undertook the Rights Offering in April – June 2008, it clearly told investors that the impetus for the Offering was management's desire to improve RBS' capital structure and that it was not driven in anyway by UK regulators.

We now know that assurance was false and that the whole reason for the Rights Issue was the regulators' concerns about RBS' solvency.

Case Update: Investors filed a class action in New York purporting to assert claims on behalf of all RBS investors, no matter where located, who purchased ordinary (common) shares on the open market during the period of March 1, 2007 through January 19, 2009 ("Class Period"), or acquired certain other RBS securities. The Court dismissed all claims brought by investors who had purchased RBS common shares outside the United States in light of the Supreme Court's decision in *Morrison v. National Australia Bank Ltd*. In July 2013, OCERS joined a group of claimants that brought this action in the UK Courts. RBS agreed to a settlement and set aside up to £800 million (~$1 Billion). RBS received more than £275 million in claims, and paid all of those amounts in May 2017. On May 9, 2017, OCERS received its payment of £86,631 (approximately $110,000).

**NEW SECURITIES CLASS ACTION CASES THIS QUARTER**

| **Case Name** | **Lead Plaintiff Deadline** | **OCERS Gain/Loss** |
|---|---|---|
| Omega Protein Corporation | May 1, 2017 | Gain |
| HMS Holdings Corp. | May 2, 2017 | LOSS: $81,700 |

**NEW SECURITIES CLASS ACTION SETTLEMENTS THIS QUARTER**

| **Case Name** | **Class** | **Settlement Amount (Common Fund)** |
|---|---|---|
| Computer Sciences Corporation (SEC Fair Fund) | All persons and entities who purchased or acquired Eligible Securities of Computer Sciences Corporation between August 5, 2008 and December 27, 2011, inclusive. | $190,948,984 |
| Federal Home Loan Mortgage Corp. (Freddie Mac) | All persons or entities who purchased Federal Home Loan Mortgage Corporation common stock shares between April 18, 2000 and June 8, 2003, inclusive. | $50,755,388 |
| PTC Inc. | All those who purchased or otherwise acquired the common stock of PTC Inc. between November 24, 2011 and July 29, 2015, inclusive. | $2,100,000 |

| | | |
|---|---|---|
| Dole Food Company, Inc. | All persons or entities who sold Dole Food Company, Inc.'s common stock (i) during the period from January 2, 2013 through October 31, 2013, inclusive, or (ii) on November 1, 2013 where those shares were sold on the open market and were not held as of the closing of the Take-Private Transaction. | $74,000,000 |
| DFC Global Corp. | All persons or entities who purchased or otherwise acquired DFC Global Corp. common stock between January 28, 2011 and February 3, 2014, inclusive. | $30,000,000 |
| Energy Recovery, Inc. | All persons and entities who purchased Energy Recovery, Inc. common stock between March 7, 2013 and March 5, 2015, inclusive. | $3,850,000 |

**Submitted by:**

Gina M. Ratto

Gina M. Ratto
General Counsel

# C-16

# Memorandum

**DATE**: August 2, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **SITE VISIT REPORT – CONTRA COSTA COUNTY AND STANISLAUS COUNTY**

## Recommendation

Receive and file.

## Background/Discussion

I have always emphasized the need for continuous improvement in our public service to our OCERS membership. One task I undertake each year in that endeavor is to visit two other pension systems in person, finding I will always come away with ideas for new or improved approaches to accomplishing OCERS mission.

In 2016, while sharing a verbal report on my outreach efforts with the OCERS Board, Trustee Freidenrich asked if I could produce a written report regarding my visits in future years, a great suggestion which I am following with this report.

I arranged this year to visit Contra Costa County Employees Retirement Association (CCCERA) on July 5, followed the next day by a visit to Stanislaus County Employees Retirement Association (SCERA) on July 6.

I communicated with the CEO of each system prior to my arrival and indicated my interest in meeting with certain departments and staff. At each location I tried to arrange for the following:

1. A walk through their offices, to see how the agency is organized, as well as a visit to the Board Room with a discussion of how Board meetings are conducted, and in recent years discussion of security measures they may have in place.

2. A visit with a representative of the Investment team, to discuss current asset allocation, trends, and goals over the coming decade.

3. A visit with a representative of the Disability Benefits team. I ask that they review their process with me from beginning to end, with sample letters or documents - both those provided to members as well as what is ultimately presented to their Board.

4. A visit with their Communications Officer to review publications, newsletters and any other outreach materials. I also ask about any member training programs they may have in place.

5. Time with the CEO in an overview of their current challenges, and a review of their Strategic Plan and

goals.

Some of the highlights of my visits to each follow:

CONTRA COSTA COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Members: 21,000
Plan Sponsors: 16
Staff Positions: 53
Fund: $7.6 billion

Current challenges include the recent separation of all CCCERA staff from the County, becoming a fully independent agency.

Investments is working on a governance structure that would allow staff and consultants to make up to $100 million commitments within asset classes previously approved by the Board.

CCCERA provides a full discount (7%) to those Plan Sponsors who prepay their employer contributions by July 31. They use this influx of cash as an opportunity to rebalance the portfolio, refresh their liquidity, and maintain optionality in their larger investments.

For Disabilty retirement applications, all are reviewed by a medical advisor. Members are not routinely sent for Independent Medical Exams unless the Board requests such. If the medical advisor denies the initial claim, it does NOT go to the Board for initial review as is OCERS practice. Instead the member is given the option of going straight to a benefits hearing and only then would the case come to the Board, or the member may choose at that point to close their claim.

Rather than establish an Internal Audit department, CCCERA relies on external third parties for conducting in-depth audit activities, and have instead established a Compliance Officer position. The thinking here is that unlike an auditor who will generally only indicate where weaknesses exist with internal controls, but will not indicate how to resolve identified challenges, the Compliance Officer will work closely with staff in a hands-on approach to enact industry best practices creating tools to enhance and improve current controls.

An annual off-site "Staff Development Day" is held, and has included topics such as "Strategic Planning" and "Stress Management".

CCCERA has a number of interesting compensation practices. Similar to what I have learned has recently been implemented at Los Angeles County Retirement, CCCERA provides an annual COLA salary increase to all staff, and then develops a separate performance salary award that is on top of that COLA increase.
Thanks

Additionally, in what may be a unique practice among the '37 Act systems, CCCERA provides a longevity award of 2.5% at a staff members 10 Year anniversary, as well as an additional 2.5% award to management staff when they reach their 15 Year anniversary.

# Memorandum

STANISLAUS COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Members: 9,120
Plan Sponsors: 6
Staff Positions: 13
Fund: $2.6 billion

Stanislaus is the smallest system I have visited to date, and that alone is one of its current challenges. The CEO (Rick Santos) there must act as the CIO as well, in coordination with their consultant, he does not presently have any staff to assist him in this task, though he is asking his Board to approve an Investment Analyst position to help with the day to day tracking duties. While those duties take up about 50% of his time, during heavy retirement season you will see him calculating retirement benefits along with his staff.

A major remodel of their Boardroom is underway. Presently meetings are held in a room about the size of the Silverado room at OCERS where our Board takes lunch, with the meeting held around a single large table also similar to the table in the Silverado room. That presents two challenges in particular, the Trustees and staff cannot clearly see everyone at the table, and with the public seated at chairs against the walls around the Board meeting table, it is difficult to ensure security. SCERA is building out a traditional Board room with dais and area for an audience in front.

SCERA has made broad strides in trying to streamline their Disability benefits application process. As with OCERS, it was not unusual for staff in prior years to forward 500 pages of medical evidence to the trustees in support of a given case. Some years back they began to work with an outside attorney with expertise in medical claims, and replaced the staff report accompanied by voluminous medical records with a summary report by the attorney that might have run 15 pages or so. The Board in time became comfortable with the outcomes of those cases, and have recently accepted a two-page report as the sole supporting document provided to the Board for claim approvals. If the claim is being denied, then as with CCCERA it does not come to the Board, it is sent to a benefits hearing first. One final note on this topic, again as is the case with CCCERA, they do not automatically send every claimant to see an Independent Medical Examiner, doing so only with unusually complicated cases.

I want to close here by expressing my sincere thanks to both Gail Strohl, CEO CCCERA, and Rick Santos, CEO SCERA, who each allowed me to impose upon themselves and their staffs for a full day. I am very appreciative.

**Submitted by:**

Steve Delaney
Chief Executive Officer

# C-17

# Memorandum

**DATE**: August 17, 2016

**TO**: Members, Board of Retirement

**FROM**: Suzanne Jenike, Assistant CEO, External Operations

**SUBJECT**: **2017 EMPLOYER AND EMPLOYEE PENSION COST COMPARISON**

## Recommendation

Receive and file.

## Background/Discussion

On an annual basis I provide the Board with an updated contribution comparison spreadsheet showing the various contribution rate provisions paid by employers and employees across several rate groups and plans. This document is intended to provide a high level overview of the rates, ownership of the funds once they are sent to OCERS, as well as some of the pick-up arrangements that the OCERS Plan Sponsors have bargained for with their employees.

## Submitted by:

S. J. – APPROVED

___________________________

Suzanne Jenike
Assistant CEO, External Operations

# 2017 LEGACY CONTRIBUTION COMPARISON

*Contribution rates are based on age at entry. For the purpose of this information the contribution rate reflected is the average age for that rate group.* *SJenike 8-21-17*
*The number of members in each plan/rate group are estimates and the contribution information was taken from pay period 15, 2017.*

| | | | | | | | | Employer Owned | Employee Owned | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Employer Paid EE Contributions | | Employee Paid EE Contributions | | |
| | A | B | C | D | E | F | G | H | I | J | K | L |
| | # of Members | Tier, Plan and Rate Group | Rep Units | Description | Net Employer Costs = ER+EE p/u-rev p/u | Employer Cont Rate | Employee Cont Rate | Pick up Rates Eff | Pick up Rates | EE Cont | EE reverse pick up or reimburse (reduces ER cost) | Net Employee Costs |
| | | | | | | | | .1 ER P/U * | .2 ER P/U (varies) * | | | |
| | | **Rate Group #1 General members non-OCTA, County only - avg age 32** | | | | | | | | | | |
| 0.01% | 2 | Tier 1 - Plan A - 2%@57 - 1 year MP | **EW** | Eligibility Worker Unit | 18.80% | 18.80% | 6.35% | 0.00% | 0.00 | 6.35% | 0.00% | 6.35% |
| 4.98% | 820 | Tier 2 - Plan B - 1.667%@57 1/2 - 3 year MP | | | 18.80% | 18.80% | 8.57% | 0.00% | 0.00% | 8.57% | 0.00% | 8.57% |
| 0.03% | 5 | Tier 2 - Plan B - 1.667%@57 1/2 - 3 year MP | **PO** | Deputy Sheriff Trainee | 18.80% | 18.80% | 8.57% | 0.00% | 0.00% | 8.57% | 0.00% | 8.57% |
| | | **Rate Group #1 IHSS - avg age 38** | | | | | | | | | | |
| 0.05% | 9 | Tier 2 - Plan B - 1.667%@57 1/2 - 3 year MP | | | 18.80% | 18.80% | 9.53% | 0.00% | 0.00% | 9.53% | 0.00% | 9.53% |
| | | **Rate Group #2 General members 2.7@55 non-OCFA. County only limited barg units, see disclaimer - avg age 32** | | | | | | | | | | |
| 0.03% | 5 | Tier 1 - Plan I - 2.7%@55 - 1 year MP | **MA** | OCMA Member | 28.23% | 35.64% | 12.80% | 0.00% | 0.00% | 12.80% | 7.409% | 20.21% |
| 5.79% | 954 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 28.23% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 7.409% | 19.59% |
| 0.05% | 9 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | | | 25.36% | 27.91% | 7.89% | 0.00% | 0.00% | 7.89% | 2.548% | 10.44% |
| 0.05% | 9 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **MB, MU** | OCMA Member | 28.23% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 7.409% | 19.59% |
| 0.02% | 3 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | | | 25.36% | 27.91% | 7.89% | 0.00% | 0.00% | 7.89% | 2.548% | 10.44% |
| 2.32% | 383 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **AT** | Attorney | 30.39% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 5.249% | 17.43% |
| 1.61% | 265 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **SSO** | Sheriff Special Officer | 35.64% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 0.000% | 12.18% |
| 0.01% | 2 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | | | 27.91% | 27.91% | 7.89% | 0.00% | 0.00% | 7.89% | 0.000% | 7.89% |
| 0.01% | 1 | Tier 1 - Plan I - 2.7%@55 - 1 year MP | **E1,E2,E3, EA** | County Board of Supv Elected Officials Exec. Mgmt. | 27.97% | 35.64% | 12.80% | 0.00% | 0.00% | 12.80% | 7.669% | 20.47% |
| 0.48% | 79 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 27.97% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 7.669% | 19.85% |
| 0.03% | 5 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | | | 25.10% | 27.91% | 7.89% | 0.00% | 0.00% | 7.89% | 2.808% | 10.70% |
| 0.18% | 29 | Tier 1 - Plan I - 2.7%@55 - 1 year MP | **CL,CS,GE,HP, SM, OS** | OCEA represented | 28.71% | 35.64% | 12.80% | 0.00% | 0.00% | 12.80% | 6.929% | 19.73% |
| 44.46% | 7326 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 28.71% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 6.929% | 19.11% |
| 0.85% | 140 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | | | 25.84% | 27.91% | 7.89% | 0.00% | 0.00% | 7.89% | 2.068% | 9.96% |
| 0.01% | 1 | Tier 1 - Plan I - 2.7%@55 - 1 year MP | **CP** | Craft and Plant IUOE Members | 30.47% | 35.64% | 12.80% | 0.00% | 0.00% | 12.80% | 5.169% | 17.97% |
| 0.45% | 74 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 29.47% | 35.64% | 12.18% | 0.00% | 0.00% | 12.18% | 6.169% | 18.35% |
| 0.03% | 5 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | | | 26.60% | 27.91% | 7.89% | 0.00% | 0.00% | 7.89% | 1.308% | 9.20% |
| | | **Rate Group #2 Superior Court - avg age 33** | | | | | | | | | | |
| 0.02% | 4 | Tier 1 - Plan I - 2.7%@55 - 1 year MP | **CC, E6,SG** | | 30.56% | 35.64% | 13.03% | 0.00% | 0.00% | 13.03% | 5.08% | 18.11% |
| 0.91% | 150 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **AX,CX,E5,E6,E7** | | 32.64% | 35.64% | 12.40% | 0.00% | 0.00% | 12.40% | 3.00% | 15.40% |
| 5.95% | 981 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **CC,CI,SS,SG** | | 30.56% | 35.64% | 12.40% | 0.00% | 0.00% | 12.40% | 5.08% | 17.48% |
| 0.16% | 26 | Tier 2 - Plan P - 1.62%@65 - 3 year MP | **AX,CC,CX,SG,SS** | | 24.91% | 27.91% | 8.03% | 0.00% | 0.00% | 8.03% | 3.00% | 11.03% |
| | | **Rate Group #2 SJC - avg age 36** | | | | | | | | | | |
| 0.01% | 1 | Tier 1 - Plan I - 2.7%@55 - 1 year MP | | | 35.64% | 35.64% | 13.78% | 0.00% | 0.00% | 13.78% | 0.00% | 13.78% |
| 0.20% | 33 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 35.64% | 35.64% | 13.11% | 0.00% | 0.00% | 13.11% | 0.00% | 13.11% |
| 0.08% | 13 | Tier 2 - Plan S - 2%@57 - 3 year MP | | | 33.85% | 33.85% | 11.10% | 0.00% | 0.00% | 11.10% | 0.00% | 11.10% |
| 0.01% | 1 | Tier 2 - Plan W -1.62%@65 - 3 year MP | | | 29.18% | 29.18% | 6.67% | 0.00% | 0.00% | 6.67% | 0.00% | 6.67% |
| | | **Rate Group #2 OCERS Mgmt (future service) - avg age 35** | | | | | | | | | | |
| 0.12% | 20 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 33.98% | 33.98% | 12.86% | 0.00% | 0.00% | 12.86% | 0.00% | 12.86% |
| | | **Rate Group #2 Children & Families Comm. (future service) - avg age 33** | | | | | | | | | | |
| 0.03% | 5 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 34.62% | 33.98% | 12.40% | 4.245% | 0.00% | 8.16% | 3.61% | 7.52% |
| | | **Rate Group #2 LAFCO (future service) - avg age 33** | | | | | | | | | | |
| 0.01% | 2 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | | | 35.13% | 33.98% | 12.40% | 4.25% | 0.00% | 8.16% | 3.10% | 7.01% |
| | | **Rate Group #3 Sanitation - avg age 34** | | | | | | | | | | |
| 0.01% | 1 | Tier 1 - Plan G - 2.5%@55 - 1 year MP | | | 15.83% | 12.33% | 13.07% | 0.00% | 3.50% | 13.07% | 0.00% | 9.57% |
| 2.31% | 380 | Tier 2 - Plan H - 2.5%@55 - 3 year MP | | | 15.83% | 12.33% | 12.43% | 0.00% | 3.50% | 12.43% | 0.00% | 8.93% |
| 0.33% | 55 | Tier 2 - Plan B - 1.667%@57 1/2 - 3 year MP | | | 10.30% | 10.30% | 8.96% | 0.00% | 0.00% | 8.96% | 0.00% | 8.96% |

# 2017 LEGACY CONTRIBUTION COMPARISON

*Contribution rates are based on age at entry. For the purpose of this information the contribution rate reflected is the average age for that rate group.*
*The number of members in each plan/rate group are estimates and the contribution information was taken from pay period 15, 2017.*

*SJenike 8-21-17*

| | | | | | | | | Employer Owned | Employee Owned | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Employer Paid EE Contributions | | Employee Paid EE Contributions | | |
| | A | B | C | D | E | F | G | H | I | J | K | L |
| | # of Members | Tier, Plan and Rate Group | Rep Units | Description | Net Employer Costs = ER+EE p/u-rev p/u | Employer Cont Rate | Employee Cont Rate | Pick up Rates Eff | Pick up Rates | EE Cont | EE reverse pick up or reimburse (reduces ER cost) | Net Employee Costs |
| | | | | | | | | .1 ER P/U * | .2 ER P/U (varies) * | | | |
| | | **Rate Group #5 OCTA - avg age 36** | | | | | | | | | | |
| 0.07% | 11 | Tier 1 - Plan A - 2%@57 - 1 year MP | CO, MN | | 26.22% | 26.22% | 6.95% | 0.00% | 0.00% | 6.95% | 0.00% | 6.95% |
| 7.14% | 1177 | Tier 2 - Plan B - 1.667%@57 1/2 - 3 year MP | CO, MN, TCU | | 26.22% | 26.22% | 9.32% | 0.00% | 0.00% | 9.32% | 0.00% | 9.32% |
| | | **Rate Group #6 Probation - avg age 27** | | | | | | | | | | |
| 0.03% | 5 | Tier 2 - Plan F - 3%@50 - 3 year MP - Mgmt | E4/E8 | Executive | 45.07% | 45.07% | 16.15% | 0.00% | 0.00% | 16.15% | 0.00% | 16.15% |
| 0.01% | 1 | Tier 1- Plan E - 3%@50 - 1 year MP - Mgmt | MP, PM | Probation Mgmt | 45.07% | 45.07% | 11.79% | 0.00% | 0.00% | 11.79% | 0.00% | 11.79% |
| 0.68% | 112 | Tier 2 - Plan F - 3%@50 - 3 year MP - Mgmt | | | 45.07% | 45.07% | 16.15% | 0.00% | 0.00% | 16.15% | 0.00% | 16.15% |
| 3.84% | 633 | Tier 2 - Plan F - 3%@50 - 3 year MP - Officer | PS | Probation Services | 45.07% | 45.07% | 16.15% | 0.00% | 0.00% | 16.15% | 0.00% | 16.15% |
| | | **Rate Group #7 County Law Enforcement - avg age 27** | | | | | | | | | | |
| 6.98% | 1150 | Tier 2 - Plan F - 3%@50 - 3 year MP - Sheriff | PO/SP | New Hires After 4/9/2010 | 62.55% | 62.55% | 17.18% | 0.00% | 0.00% | 17.18% | 0.00% | 17.18% |
| 2.35% | 387 | Tier 2 - Plan R - 3%@55 - 3 year MP - Sheriff | | | 60.34% | 60.34% | 16.12% | 0.00% | 0.00% | 16.12% | 0.00% | 16.12% |
| 0.58% | 95 | Tier 2 - Plan F - 3%@50 - 3 year MP - Sheriff | ML,EB,EA | Law Enforce/Mgmt | 62.55% | 62.55% | 17.18% | 0.00% | 0.00% | 17.18% | 0.00% | 17.18% |
| | | **Rate Group #8 Fire Authority Safety - avg age 30** | | | | | | | | | | |
| 4.38% | 722 | Tier 2 - Plan F - 3%@50 - 3 year MP | FF, FG, F3 | Fire Fighter Engineer 14.5% | 52.05% | 49.24% | 17.32% | 1.40% | 1.41% | 14.50% | 0.00% | 11.69% |
| 0.16% | 26 | Tier 2 - Plan F - 3%@50 - 3 year MP | FM & M3 | Fire Management 15.99% | 50.57% | 49.24% | 17.32% | 0.66% | 0.67% | 15.99% | 0.00% | 14.66% |
| 0.13% | 21 | Tier 2 - Plan F - 3%@50 - 3 year MP | E3,M1 | Full Rate | 49.24% | 49.24% | 17.32% | 0.00% | 0.00% | 17.32% | 0.00% | 17.32% |
| 0.52% | 86 | Tier 2 - Plan R - 3%@55 - 3 year MP | F5, T5 | New hires After 7/1/2012 - 14.5% | 46.48% | 44.47% | 16.52% | 1.00% | 1.01% | 14.50% | 0.00% | 12.49% |
| | | **Rate Group #9 TCA (retroactive upgrade) - avg age 39** | | | | | | | | | | |
| **0.23%** | 38 | Tier 2 - Plan N - 2%@55 - 3 year MP | | | 27.33% | 27.33% | 10.26% | 0.00% | 0.00% | 10.26% | 0.00% | 10.26% |

# 2017 LEGACY CONTRIBUTION COMPARISON

*Contribution rates are based on age at entry. For the purpose of this information the contribution rate reflected is the average age for that rate group.*
*The number of members in each plan/rate group are estimates and the contribution information was taken from pay period 15, 2017.*

*SJenike 8-21-17*

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Employer Owned | Employee Owned | | | |
| | | | | | | | | Employer Paid EE Contributions | | Employee Paid EE Contributions | | |
| | # of Members | Tier, Plan and Rate Group | Rep Units | Description | Net Employer Costs = ER+EE p/u-rev p/u | Employer Cont Rate | Employee Cont Rate | Pick up Rates Eff | Pick up Rates | EE Cont | EE reverse pick up or reimburse (reduces ER cost) | Net Employee Costs |
| | | | | | | | | .1 ER P/U * | .2 ER P/U (varies) * | | | |
| | | **Rate Group #10 Fire Authority General - avg age 33** | | | | | | | | | | |
| 0.90% | 149 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **E2,G2,M2,S2** | | 33.97% | 33.97% | 12.41% | 0.00% | 0.00% | 12.41% | 0.00% | 12.41% |
| 0.20% | 33 | Tier 2 - Plan N - 2.0%@55 - 3 year MP | **E4,G4,M4,S4** | New Hires After 7/1/2012 | 33.25% | 33.25% | 9.21% | 0.00% | 0.00% | 9.21% | 0.00% | 9.21% |
| 0.02% | 4 | Tier 2 - Plan J - 2.7%@55 - 3 year MP | **SE** | General Members .2 ER pickup over Flat Rate | 33.97% | 33.97% | 12.41% | 0.00% | 0.00% | 13.50% | 0.00% | 13.50% |
| | | **Rate Group #11 Cemetery District (future service) - avg age 31** | | | | | | | | | | |
| 0.11% | 18 | Tier 2 - Plan N - 2%@55 - 3 year MP | **E9, ZC** | | 13.66% | 11.33% | 8.90% | 0.00% | 2.33% | 8.90% | 0.00% | 8.90% |
| | | **Rate Group #12 OCPLL (future service) - avg age 42** | | | | | | | | | | |
| 0.08% | 13 | Tier 2 - Plan H - 2.5%@55 - 3 year MP | | | 20.50% | 22.25% | 14.20% | 0.00% | 0.00% | 14.20% | 1.75% | 15.95% |
| **100.00%** | 16479 | | | | | | | | | | | |

**Note:** The total employee contribution can have several components. There can be an employer pick up component where the employer can pay some or all of the employee's normal contributions under two different sections of the '37 Act (31581.1 & 31581.2).
There is also a reverse pick up that is in addition to the regular normal employee contributions. The reverse pick up is always paid by the employee and goes into the employee contribution balance.

**Disclaimers:** The information contained in this document is intended to be informational only. All of OCERS members may not be reflected and in some cases the pick up amounts are estimates.
*31581.1 & 31581.2 contribution percentages are calculated by the Plan Sponsor and have not been validated by OCERS staff.
Tier 1 employees must have entered OCERS membership on or before September 21, 1979

# 2017 PEPRA CONTRIBUTION COMPARISON

*Contribution rates are based on age at entry. For the purpose of this information the contribution rate reflected is the average age for that rate group.* *SJenike 8-21-17*
*The number of members in each plan/rate group are estimates and the contribution information was taken from pay period 15, 2017.*

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **Employer Owned** | **Employee Owned** | | | |
| | | | | | | | | **Employer Paid EE Contributions** | | **Employee Paid EE Contributions** | | |
| | **# of Members** | **Tier, Plan and Rate Group** | **Rep Units** | **Description** | **Net Employer costs = ER+EE p/u-rev p/u** | **Employer Cont Rate** | **Employee Cont Rate** | **Pick up Rates Eff** | **Pick up Rates** | **EE Cont** | **EE reverse pick up or reimburse (reduces ER cost)** | **Net Employee Costs** |
| | | | | | | | | **.1 ER P/U *** | **.2 ER P/U (varies) *** | | | |
| | | **Rate Group #1 General members non-OCTA, County only - avg age 32** | | | | | | | | | | |
| 12.87% | 632 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **EW** | Eligibility Worker Unit | 18.14% | 18.14% | 8.51% | 0.00% | 0.00 | 8.51% | 0.00% | 8.51% |
| 1.81% | 89 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **PO** | Deputy Sheriff Trainee | 18.14% | 18.14% | 8.51% | 0.00% | 0.00% | 8.51% | 0.00% | 8.51% |
| | | **Rate Group #1 IHSS - avg age 38** | | | | | | | | | | |
| 0.35% | 17 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 18.14% | 18.14% | 9.46% | 0.00% | 0.00% | 9.46% | 0.00% | 9.46% |
| | | **Rate Group #2 General members non-OCFA. County only limited barg units, see disclaimer - avg age 32** | | | | | | | | | | |
| 2.49% | 122 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **MA** | OCMA Member | 24.97% | 29.01% | 6.14% | 0.00% | 0.00% | 6.14% | 4.040% | 10.18% |
| 0.63% | 31 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **MB** | OCMA Member | 24.97% | 29.01% | 6.14% | 0.00% | 0.00% | 6.14% | 4.040% | 10.18% |
| 2.61% | 128 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **AT** | Attorney | 28.92% | 30.80% | 7.96% | 0.00% | 0.00% | 7.96% | 1.880% | 9.84% |
| 0.79% | 39 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **SSO** | Sheriff Special Officer | 29.01% | 29.01% | 6.14% | 0.00% | 0.00% | 6.14% | 0.000% | 6.14% |
| 0.14% | 7 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **E2,E3** | | 24.71% | 29.01% | 6.14% | 0.00% | 0.00% | 6.14% | 4.300% | 10.44% |
| 52.43% | 2574 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **CL,CS,GE,HP SM, OS** | OCEA represented | 25.45% | 29.01% | 6.14% | 0.00% | 0.00% | 6.14% | 3.560% | 9.70% |
| 0.75% | 37 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **CP** | | 26.21% | 29.01% | 6.14% | 0.00% | 0.00% | 6.14% | 2.800% | 8.94% |
| | | **Rate Group #2 Superior Court - avg age 33** | | | | | | | | | | |
| 4.89% | 240 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **CC, E6,SG** | | 29.01% | 29.01% | 6.25% | 0.00% | 0.00% | 6.25% | 0.00% | 6.25% |
| 0.77% | 38 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **AX,CX,E5** | | 29.01% | 29.01% | 6.25% | 0.00% | 0.00% | 6.25% | 0.00% | 6.25% |
| 0.45% | 22 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | **CI,SS,EC** | | 29.01% | 29.01% | 6.25% | 0.00% | 0.00% | 6.25% | 0.00% | 6.25% |
| | | **Rate Group #2 SJC - avg age 36** | | | | | | | | | | |
| 0.65% | 32 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 30.80% | 30.80% | 8.53% | 0.00% | 0.00% | 8.53% | 0.00% | 8.53% |
| | | **Rate Group #2 OCERS Mgmt - avg age 35** | | | | | | | | | | |
| 0.12% | 6 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 29.14% | 29.14% | 8.38% | 0.00% | 0.00% | 8.38% | 0.00% | 8.38% |
| | | **Rate Group #2 Children & Families Comm. - avg age 33** | | | | | | | | | | |
| 0.06% | 3 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 29.14% | 29.14% | 8.10% | 0.000% | 0.00% | 8.10% | 0.00% | 8.10% |
| | | **Rate Group #2 LAFCO - avg age 33** | | | | | | | | | | |
| 0.06% | 3 | **Tier 2** - Plan T - 1.62%@65 - 3 year MP | | | 27.35% | 27.35% | 6.25% | 0.00% | 0.00% | 6.25% | 0.00% | 6.25% |
| | | **Rate Group #3 Sanitation - avg age 34** | | | | | | | | | | |
| 2.71% | 133 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 9.25% | 9.25% | 8.53% | 0.00% | 0.00% | 8.53% | 0.00% | 8.53% |
| | | **Rate Group #5 OCTA - avg age 36** | | | | | | | | | | |
| 3.06% | 150 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **CO, MN** | | 25.64% | 25.64% | 9.66% | 0.00% | 0.00% | 9.66% | 0.00% | 9.66% |
| | | **Rate Group #6 Probation - avg age 27** | | | | | | | | | | |
| 0.41% | 20 | **Tier 2** - Plan V - 2.7%@57 - 3 year MP | **PS** | Probation Services | 38.20% | 38.20% | 14.97% | 0.00% | 0.00% | 14.97% | 0.00% | 14.97% |

# 2017 PEPRA CONTRIBUTION COMPARISON

| | # of Members | Tier, Plan and Rate Group | Rep Units | Description | Net Employer costs = ER+EE p/u-rev p/u | Employer Cont Rate | Employee Cont Rate | Pick up Rates Eff | Pick up Rates | EE Cont | EE reverse pick up or reimburse (reduces ER cost) | Net Employee Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Rate Group #7 County Law Enforcement - avg age 27** | | | | | | | | | | |
| 6.68% | 328 | **Tier 2** - Plan V - 2.7%@57 - 3 year MP | **PO** | | 57.42% | 57.42% | 17.85% | 0.00% | 0.00% | 17.85% | 0.00% | 17.85% |
| | | **Rate Group #8 Fire Authority Safety - avg age 30** | | | | | | | | | | |
| 2.69% | 132 | **Tier 2** - Plan V - 2.7%@57 - 3 year MP | **FF** | Fire Fighter | 38.09% | 38.09% | 15.39% | 0.00% | 0.00% | 15.39% | 0.00% | 15.39% |
| 0.02% | 1 | **Tier 2** - Plan V - 2.7%@57 - 3 year MP | **F7** | Fire Chief | 38.09% | 38.09% | 15.39% | 0.00% | 0.00% | 15.39% | 0.00% | 15.39% |
| | | **Rate Group #9 TCA - avg age 39** | | | | | | | | | | |
| 0.51% | 25 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 24.36% | 24.36% | 9.21% | 0.00% | 0.00% | 9.21% | 0.00% | 9.21% |
| | | **Rate Group #10 Fire Authority General - avg age 33** | | | | | | | | | | |
| 1.73% | 85 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **G6** | | 29.34% | 29.34% | 8.47% | 0.00% | 0.00% | 8.47% | 0.00% | 8.47% |
| 0.12% | 6 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **M6** | Admin Mgmt | 29.34% | 29.34% | 8.47% | 0.00% | 0.00% | 8.47% | 0.00% | 8.47% |
| 0.06% | 3 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | **S6** | Supervisory | 29.34% | 29.34% | 8.47% | 0.00% | 0.00% | 8.47% | 0.00% | 8.47% |
| | | | | | | | | | | | | |
| | | **Rate Group #11 Cemetery District - avg age 31** | | | | | | | | | | |
| 0.10% | 5 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 12.23% | 12.23% | 8.72% | 0.00% | | 8.72% | 0.00% | 8.72% |
| | | **Rate Group #12 OCPLL - avg age 42** | | | | | | | | | | |
| 0.02% | 1 | **Tier 2** - Plan U - 2.5%@67 - 3 year MP | | | 17.42% | 19.17% | 9.82% | 0.00% | 0.00% | 9.82% | 1.75% | 11.57% |
| **100.00%** | 4909 | | | | | | | | | | | |

**Note:** The total employee contribution can have several components. There can be an employer pick up component where the employer can pay some or all of the employee's normal contributions under two different sections of the '37 Act (31581.1 & 31581.2).
There is also a reverse pick up that is in addition to the regular normal employee contributions. The reverse pick up is always paid by the employee and goes into the employee contribution balance.

**Disclaimers:** The information contained in this document is intended to be informational only. All of OCERS members may not be reflected and in some cases the pick up amounts are estimates.
*31581.1 & 31581.2 contribution percentages are calculated by the Plan Sponsor and have not been validated by OCERS staff.
Tier 1 employees must have entered OCERS membership on or before September 21, 1979

# C-18

# Memorandum

**DATE**: July 25, 2017

**TO**: Members of the Board of Retirement

**FROM**: David James, CPA, Director of Internal Audit

**SUBJECT**: **AUDIT COMMITTEE OUTCOMES FROM JULY 6, 2017 MEETING**

## Recommendation

The Audit Committee recommends that the Board of Retirement approves:

(1) Receive and file the Hotline Update
(2) Receive and file the Audit Committee Inquiry on Administrative time in Internal Audit
(3) Receive and file the Status of Internal Audits and Audit Projects

## Background/Discussion

### A. HOTLINE UPDATE

A presentation was made by David James, Director of Internal Audit, to provide an update on three reports filed with OCERS' Hotline website since the last update to the Committee.

**Recommendation:** The Committee voted to receive and file the *Hotline Update*.

### B. AUDIT COMMITTEE INQUIRY ON ADMINSTRATIVE TIME IN INTERNAL AUDIT

A presentation was made by David James, Director of Internal Audit, to provide the Committee with an understanding of the nature of work coded as administrative hours versus internal audit project hours, as well as how other Internal Audit departments with other pension systems code similar time.

**Recommendation:** The Committee voted to receive and file the *Audit Committee Inquiry on Administrative time in Internal Audit*.

### C. STATUS OF INTERNAL AUDITS AND AUDIT PROJECTS

A presentation was made by David James, Director of Internal Audit, to update the Committee on the status of ongoing audit projects, and the replacement of a planned payroll audit of the Sheriff's Department with an audit of OCERS' staff and trustee expense reimbursements.

**Recommendation:** The Committee voted to receive and file the *Status of Internal Audits and Audit Projects*.

# Memorandum

**Submitted by:**

D.J. - Approved

David James, CPA
Director of Internal Audit

# C-19

# Memorandum

**DATE**: August 21, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **BOARD COMMUNICATIONS**

## Recommendation

Receive and file.

## Background/Discussion

To ensure that the public has free and open access to those items that could have bearing on the decisions of the Trustees of the Board of Retirement, the OCERS Board has directed that all written communications to the entire Board during the interim between regular Board meetings be included in a monthly communications summary.

## News Links

The various news and informational articles that have been shared with the full Board are being provided to you here by web link address. By providing the links in this publicly available report, we comply with both the Brown Act public meeting requirements, as well as avoid any copyright issues.

The following news and informational links were received by OCERS staff for distribution to the entire Board:

### From David Ball

- **Assessing Pension Plan Health: More Than One Right Number Tells the Whole Story**
  http://actuary.org/files/publications/IB-RightNumber07.17.pdf

### From Russell Baldwin

- **How banks create money**
  http://www.cnbc.com/id/100497710
- **IEA warns $1.3 trillion of oil and gas could be left stranded**
  http://www.telegraph.co.uk/business/2017/03/20/iea-warns-13-trillion-oil-gas-could-left-stranded/

**From Molly Murphy**

**July 18, 2017 email:**

Dear OCERS Board Members,

Recently there have been a series of news items, most notably in the Wall Street Journal, that have focused on the status of EnerVest Energy Institutional Fund XIII. OCERS has been noted as an investor in this fund and we have received some attention in the news as a result. OCERS Staff has been in contact with EnerVest throughout the process and we are aware that the General Partner is actively pursuing remedies with lenders and proceeding with asset divestiture activities that we hope will assist in those initiatives.

This investment represents a very small percentage of the OCERS portfolio. OCERS recognizes that risk of loss comes with any investment and maintains a high level of diversification to protect from these types of outcomes. As more information becomes available from EnerVest, OCERS Staff will provide additional updates to the Board.

Sincerely,
Molly A. Murphy, CFA
Chief Investment Officer

**From Steve Delaney**

**July 21, 2017 email:**

To the members of the OCERS Board of Retirement,

With CalPERS having reported 11.3% (net) returns as of June 30, 2017 for FY 16-17, and CalSTRS reporting 13.4% (net), we have received a number of inquiries as to OCERS portfolio returns for the same period of time. You can feel free to share the following, as prepared by Ms. Chary:

> The Orange County Employees Retirement System (OCERS) has posted a preliminary 13.1 percent net of fees return for the 2016-17 fiscal year June 30, with strong returns coming from the major risk assets such as U.S. and non-U.S. equities, credit strategies and private equity. As of June 30, 2017, the total fund value was $14.48 billion. The 13.1 percent return comes on the heels of a -0.61 percent return for the 2015-2016 fiscal year. OCERS adopted a new asset allocation in January 2017 with a target asset mix of global equity: 35%; private equity: 8%; core fixed income: 17%; credit: 13%; real assets: 22% and risk mitigation: 5%.

*It is important to note that because OCERS reports on a calendar year (as of 12/31) basis, employer and employee contributions will **not** be determined by these preliminary fiscal year returns which are being provided for their informational value only.*

[For those who may also want to know where the OCERS' portfolio returns stand on a calendar year basis, our YTD (as of June 30, 2017) returns are 7.1%.]

Note: This memo will be part of the August 21, 2017 Board Communications document.

Steve Delaney
CEO, Orange County Employees Retirement System

**July 21, 2017 email** from Michelle Aguirre**,** Chief Financial Officer, County Executive Officer:

> Good morning, Steve. The Bond Buyer published the attached article last week regarding the collapse of EnerVest, but I thought this was old news. The article references OCERS and the $40M, but didn't OCERS brief plan sponsors months ago (feels like a year ago) on this? Please remind me of the timing of when this was previously brought to our attention and resolved. Thanks!

**July 28, 2017 email** reply from Steve Delaney to Michelle Aguirre**,** Chief Financial Officer, County Executive Officer:

> Good afternoon Michelle –
>
> It took some research, and we happened to have an Investment Committee meeting this week which had kept my investment team fairly busy. (I informed the Investment Committee during my CEO comments yesterday that you had made an inquiry regarding EnerVest, and let them know that I would forward on this response to the trustees as well.)
>
> To your query I had responded on Monday:
>
> "You are correct, the press came late to the game on this one, it was Girard who tackled this issue.
>
> Let me get with Shanta and team and see what we can give you by way of dates and materials."
>
> Here is what the OCERS investment team found in going back through past public materials:
>
>> The OCERS' Investment Committee received several updates during 2016 regarding the challenges EnerVest is facing with their fund level leverage for Funds XII and XIII and EnerVest's efforts to recapitalize the funds and reduce the fund level debt. OCERS invested $40 million in Fund XII, $40 million in Fund XIII, and $35 million in Fund XIV. EnerVest presented a portfolio update to the Investment Manager Monitoring Subcommittee on May 3, 2016 on all 3 funds and discussed the debt challenges for Funds XII and XIII (Fund XIV was invested at more attractive prices after the fall in energy prices and does not have the same challenges as Fund XII and XIII). The OCERS' Investment Committee formally placed EnerVest on watch list at the May 25, 2016 Investment Committee Meeting. Girard Miller performed an onsite due diligence meeting at

EnerVest's office in Houston in August 2016 and provided another update on the EnerVest funds at the September 14, 2016 Strategic Planning Investment Session.

Attached are the staff write-up and EnerVest presentation from the May 2016 Manager Monitoring Subcommittee meeting, Girard Miller's watch list recommendation memo, and Girard's update slide from the September 2016 Strategic Planning Session.

1. EnerVest - MMS Presentation
2. EnerVest Update at September 2016 Strategic Planning Investment Session
3. EnerVest - MMS Write Up
4. Manager Watchlist - EnerVest Memo

If you have any other questions, comments or concerns on this item, please let me know.

Steve Delaney
CEO, Orange County Employees Retirement System

- Experts Suggest Cryptocurrencies Could be This Generation's Supplement for Pensions
  https://futurism.com/experts-suggest-cryptocurrencies-could-be-this-generations-supplement-for-pensions/

**Other Items: (See Attached)**

5. Monthly summary of OCERS staff activity, starting with an overview of key customer service as well as highlights and updates for the month of June.

**Submitted by:**

Steve Delaney
Chief Executive Officer

# Memorandum

**DATE**: July 20, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **OCERS ACTIVITIES AND UPDATES – JUNE 2017**

The following is my regular monthly summary of OCERS staff activity, starting with an overview of key customer service statistics as well as activity highlights followed by updates for the month of JUNE 2017.

**MEMBER SERVICE STATS FOR JUNE 2017**

**Member Approval** **98%**

**Unplanned Recalcs** **1**

**Retirement Apps Received**

| | |
|---|---|
| *June 2017* | **65** |
| *May 2017* | **60** |
| *April 2017* | **47** |
| *Mar 2017* | **79** |
| *Feb 2017* | **107** |
| *Jan 2017* | **151** |
| *Dec 2016* | **62** |
| *Nov 2016* | **64** |
| *Oct 2016* | **53** |
| *Sept 2016* | **45** |
| *Aug 2016* | ***61*** |
| *July 2016* | ***62*** |
| *June 2016* | ***65*** |
| *May 2016* | ***51*** |

## *CUSTOMER SERVICE*

The top three questions (or "requests" as with this month's top three) in the month of June as received by OCERS' counseling staff:

PLEASE SEND ME A RETIREMENT ESTIMATE.

We first direct our members to the Member Self Service portal where they can run estimates themselves 24/7 using any date they want. These estimates are accurate as it pulls the data directly from V3. The salary information includes pay items submitted by the employer via bi-weekly transmittal files. If they haven't yet registered for an online account we'll walk them through it. If the member still needs assistance, we'll run a base estimate for them and send it to them through the mail.

How do I start the retirement process? (This question is a repeat for the third straight month)

Most members start with a phone call to the retirement specialist that handles their agency. The OCERS website has a list of agencies and the associated retirement specialist assigned to assist them in the retirement process. Comprehensive retirement counseling is conducted over the phone and continues with an appointment where we provide final average salary (FAS) information. Members are encouraged to submit their retirement applications online. During the retirement appointment, members provide original birth and marriage certificates, and the application and additional forms of tax withholding and direct deposit are reviewed.  The benefit options are explained thoroughly to ensure complete understanding.

What are the retirement payment options?

The OCERS Summary Plan Description (SPD) lists all the options our members have when they retire; we direct them to our website to review each one carefully.  During retirement counseling, this is a routine item staff discusses since the payment election is irrevocable after receipt of their first benefit payment.  OCERS has 5 payment options:  1)  the unmodified option provides them with a maximum retirement allowance available and provides for a continuation of 60% of the allowance to an eligible spouse, qualified domestic partner or eligible child upon the members death 2) Option 1 pays a reduced monthly allowance until the member's death and at that time the designated beneficiary receives a refund of any remaining member contributions and interest 2)  Option 2 pays an actuarially reduced monthly allowance to the member until death, and their designated beneficiary receives the same monthly allowance (100%) for the remainder of their lifetime - members cannot change the designated beneficiary 3)  Option 3 pays an actuarially reduced monthly allowance until the member's death and then the designated beneficiary receives half, or 50% of the member's allowance for the remainder of their lifetime - members cannot change the designated beneficiary 4)  Option 4 allows for multiple designated beneficiaries and may select other survivor payment percentages if approved by the Retirement Board.  OCERS actuary calculates each Option 4 benefit - designated beneficiaries cannot be changed once the member receives their first benefit payment.

# ***ACTIVITIES***

## BUSINESS CONTINUITY/DISASTER RECOVERY

On **June 27**, OCERS' Crisis Management Team (CMT) convened to conduct our third business continuity/disaster recovery tabletop exercise.  The CMT consists of executive and other key personnel who are tasked with leading the assessment of, response to and recovery from any major disruption to OCERS' facility, personnel, technology or supplier.  With the assistance of our business continuity vendor, Avalution Consulting, who facilitated the exercise, the team role-played the response to a ransomware scenario in which all of the OCERS technology systems were disabled for a week.  Each CMT member participated by identifying the tasks they would be responsible for and as a whole, the team discussed the coordination of the overall response between business units.  The goal of the exercise is to both validate the current recovery plans as well as to identify improvements to the plans.  The CMT continues to become more comfortable with roles and responsibilities and plans are already underway for our next exercise.

**CYBERSECURITY**

A special thanks to Trustee Packard, who on **June 28** invited four OCERS staff members (myself, David James, and our two key cybersecurity staffers – Jon Gossard and Javier Lara) to join him in attending a special presentation at the Pacific Club by Mr. Bryan Cunningham, presently with UCI, on the topic of cybersecurity. It was an excellent presentation, shaking us all to our core as would be expected. So much so, I have subsequently arranged to have Mr. Cunningham speak at the Board's September Strategic Planning workshop. It also served to focus me more than ever on the incredible importance of cybersecurity at OCERS, and you will hear more from me on this topic as we begin budget discussions for 2018.

**OCERS YEAR IN REVIEW MEETINGS**

OCERS annual "YEAR IN REVIEW" meetings with our primary stakeholder groups continued through the month of June:

On **June 2** Ms. Jenike, Ms. Shott and I met with the executive team of the Association of County Law Enforcement Management (ACLEM). Together with the usual review of Board-approved materials, there were questions regarding the proper tracking and reporting of "management overtime". They also had questions regarding a recent Marin County court case which had excluded certain items from Final Average Salary. We explained that those exclusions were already in place at OCERS, so the Marin case did not have direct relevancy to their pension benefits.

On **June 5** (a.m.) Mr. Ball, Mr. Prevatt and I met with Supervisor Steel and her Executive Assistant. A full hour discussion ensued with many questions raised concerning OCERS current returns, and the UAAL. We also discussed Orange County Fire Authority and the challenges it faces should the City of Irvine choose to withdraw from the Joint Power Authority (JPA).

Also on **June 5** (p.m.) Ms. Jenike, Ms. Shott and I met with the finance team at the Transportation Corridor Association (TCA). They requested that we discuss in detail their specific data as contained in the December 31, 2016 actuarial valuation.

On **June 6**, due to scheduling conflicts, Supervisor Spitzer was not able to attend our meeting, so Mr. Prevatt and I met instead with a member of the supervisor's staff and reviewed the Board-approved materials in detail.

On **June 13** Ms. Jenike and Ms. Shott met with the executive team at the City of San Juan Capistrano.

On **June 19** Ms. Jenike and Ms. Shott met with the executive team at the Orange County Transportation Authority.

On **June 20** Mr. Ball, Mr. Prevatt and I met with Supervisor Nelson. The Supervisor had questions about the OCERS portfolio and current returns. Additionally, as with all of the visits to the supervisors this year, there was some discussion of the challenges faced by OCFA and the possibility of the City of Irvine departing.

On **June 21** Ms. Jenike, Ms. Shott and I met with a large team of executive managers at Orange County Sanitation District. We spent some time reviewing their specific actuarial data, which looked particularly good following their recent paydown of their UAAL.

On **June 29** (a.m.) Ms. Jenike, Ms. Shott and I met with a large deputation of AFSCME Local 6556, which represents the Orange County Sanitation employees. We had an excellent discussion of system costs, and impact of investment decisions being made by the OCERS Board.

Also on **June 29** (p.m.) Ms. Jenike, Ms. Shott and I met with the management team at Orange County Fire Authority. We spent some time discussing what had arisen in the various discussions with the supervisors on the issue of OCFA's UAAL and future viability. (As a reminder, Ms. Lori Zeller will be presenting details on the OCFA plan to more rapidly pay down their UAAL at the OCERS Board's September Strategic Planning workshop.)

**LEGISLATIVE OUTREACH**

Each year, as a subset of our annual "OCERS Year in Review" outreach, I also arrange for visits to the various Orange County legislative representatives. Using a much stripped down edition of the "Year in Review" materials, the basic goal of the visits is to remind legislators that OCERS is a separate system from CalPERS, the system they are normally hearing about while in Sacramento, and offering OCERS staff as an independent source of background information should they have pension-related questions or should pension issues arise.

Once again, I was able to join our Trustee Roger Hilton, who was able to open an incredible number of doors back at the capitol, allowing us to get in and meet with the legislators for meetings of generally 15 minutes in length.

This year's visit was our most productive, with the opportunity to sit down and visit 13 legislators over a period of two days (**June 13 and 14**). The following is a brief summary of the legislators visited (in the order visited), and issues that were discussed with each:

| | |
|---|---|
| Senator Bates: | Well informed on OCERS issues due to her many years on the County Board of Supervisors, the senator did have a number of questions about OCERS current funded status and efforts being made to improve that. |
| Assemblymbr Daly: | An interesting discussion on regarding the fact that OCERS employers do not offer Social Security, thus the pension must make up for that |

difference. The Assemblyman wondered if granting Social Security might not provide an offset that would allow for a reduction in defined benefits. While we did not have a specific answer to that as it relates to current OCERS benefits, I acknowledged that there are systems on the national stage that take that very approach.

| | |
|---|---|
| Senator Newman: | The senator also raised the issue of Social Security benefits, and wanted to know more about the history as to why OCERS employers do not offer that benefit as well. We also discussed the strengths and weaknesses of defined pension benefits in general. |
| Assemblymbr O'Donnell: | Yet a third legislator who had questions about OCERS benefits and the fact that the County did not offer Social Security benefits as well. There was also some detailed discussion of the $6 billion loan the Governor was taking from a reserve fund to pay towards the state's UAAL with CalPERS. |
| Senator Pan: | This was the first time in our many visits that we have finally had an opportunity to sit down with the Chair of the Senate Committee on Public Employment and Retirement. We had a long and detailed meeting with the senator, as well as a representative of the Legislative legal department. The senator was impressed to learn that OCERS is still cash flow positive, and being aware that CalPERS is now cash flow negative, he had quite a number of questions about our situation and how the Board was taking advantage of that positive news. In further discussions the senator commented on his support for defined benefit pensions as an important bulwark against poverty in old age, and concluded by discussing the importance of public pension plans being able to employ professionals in their investment departments. |
| Senator Nguyen: | A more generalist discussion, as with Senator Bates, Senator Nguyen is well versed in OCERS issues due to her time on the Orange County Board of Supervisors. |
| Assemblymbr Cooper: | Detailed discussion was held regarding possible legislation to standardize county retirement system approaches to safety officer disabilities where the individual has initially taken a job accommodation. The idea behind the legislation is that the individual not be penalized for accepting an accommodation rather than going out directly on disability. |
| Assemblymbr Chen: | The assemblymember observed a need for a better retirement benefit formula for safety members. |

| | |
|---|---|
| Assemblymbr Brough: | Commented that he was concerned with how CalPERS let politics get wrapped up in their investment decisions (referencing discussions that had been held regarding divestment of investments in Turkey as an example). He was very supportive of the Governor's decision to make the special $6 billion payment to CalPERS. Reviewing our materials, he was impressed with OCERS overall numbers when it came to returns and funding. |
| Assemblymbr Rodriguez: | Chair of the Assembly's Public Employee Retirement and Social Secuirty Committee. In reviewing OCERS funding history, he was happy to see we had earned well in 2016, but he was curious as to what had led to the mere 0.09% gain in 2015. That led to a general discussion of our asset allocation, and the current process for changing that allocation. |
| Assemblymbr Choi: | With the City of Irvine in his district, the assemblymember was very aware of the OCFA issue, and had a number of questions. He also asked about our current asset allocation, and wanted to be sure we had the authority to invest in equities. |
| Senator Portantino: | Good conversation about pensions in general, the specifics of OCERS in particular. |

Now for those who may be wondering, while we were not able to arrange a formal sit down with Senator John Moorlach, at the end of the first day, we stopped for a late dinner and in the entire restaurant there was only one other table occupied, and that was Senator Moorlach dining with several others. We were seated and shortly thereafter the senator recognizing us rose and very kindly came over for a brief chat.

# ***UPDATES***

**INVESTMENT DEPARTMENT UPDATE**

Ms. Chary, OCERS Director of Investment Operations, provides a report on June activities:

"At the June 28th meeting, the Investment Committee welcomed Molly Murphy, OCERS new CIO. Ms. Murphy comes from Mercy Health in Ohio. Ms. Murphy discussed her experience in building and developing an investment team, and migrating from private equity fund of funds to direct. Staff presented the portfolio activity for the month of May. The portfolio year-to-date is up 6.6%, while the one year return is 12.8%. The fund value is in excess of $14.4 billion. Meketa presented RVK SACRS

Public Fund Universe Analysis Report (period ending December 31, 2016). OCERS ranked in the 20th percentile for the trailing 1 year as of December 31, 2016; but 86th over the trailing 5 years, attributable to the lower equity risk.

In other activities during the month, staff transitioned assets from J.P. Morgan (global equity) to U.S. and non-U.S. equity index strategies as well as to emerging market equities."

**JUNE STAFFING SUMMARY**

OCERS continues to work towards filling vacant positions as we move towards the second half of the year. We successfully on boarded the Chief Investment Officer on June 23. The Administrative Services department opened their Staff Assistant position that was vacated after the internal promotion of Melissa Wozniuk to Staff Specialist. The department received over 250 applications and will host a test for the position in early August.

OCERS is gearing up for the Workforce Analysis that will kick-off in July by consultants, Management Partners. The Workforce Analysis is designed to review OCERS' existing staffing model, including its organizational structure, staffing levels and employee classifications. The study will identify possible changes to the staffing model and labor demands. The project is scheduled to be completed in early October.

As of June 30, 2017, a total of six employees left OCERS employment (three voluntary resignations, one automatic resignation, one transfer to the County and one probationary release). The current annual turnover rate is rounded to 8%. This is calculated by dividing the number of employees that left the agency by the number of employees on payroll. OCERS has a total of five vacancies. Of the 80 budgeted positions (28 OCERS Direct and 52 County positions), 74 positions are filled.

| Position Type | Position Title | Department | Comments |
|---|---|---|---|
| OCERS | Member Services Business Analyst | Member Services | New position<br>(pending open date) |
| County | (2) Sr. Retirement Program Specialist | Member Services | New positions (pending open date) |
| County | Staff Assistant | Administrative Services Department | Pre-employment test scheduled for August |
| County | IT Business Analyst | Information Technology | Scheduled to open in July |

| | | | |
|---|---|---|---|
| County | Retirement Investigator | Disability | Open date TBD |

As a reminder you will see this memo included with the BOARD COMMUNICATIONS document as part of the consent agenda for the August 21 meeting of the OCERS Board of Retirement.

BRINGING OUT THE BEST

# ENERVEST, LTD. ('EV')

## ORANGE COUNTY EMPLOYEE RETIREMENT SYSTEM

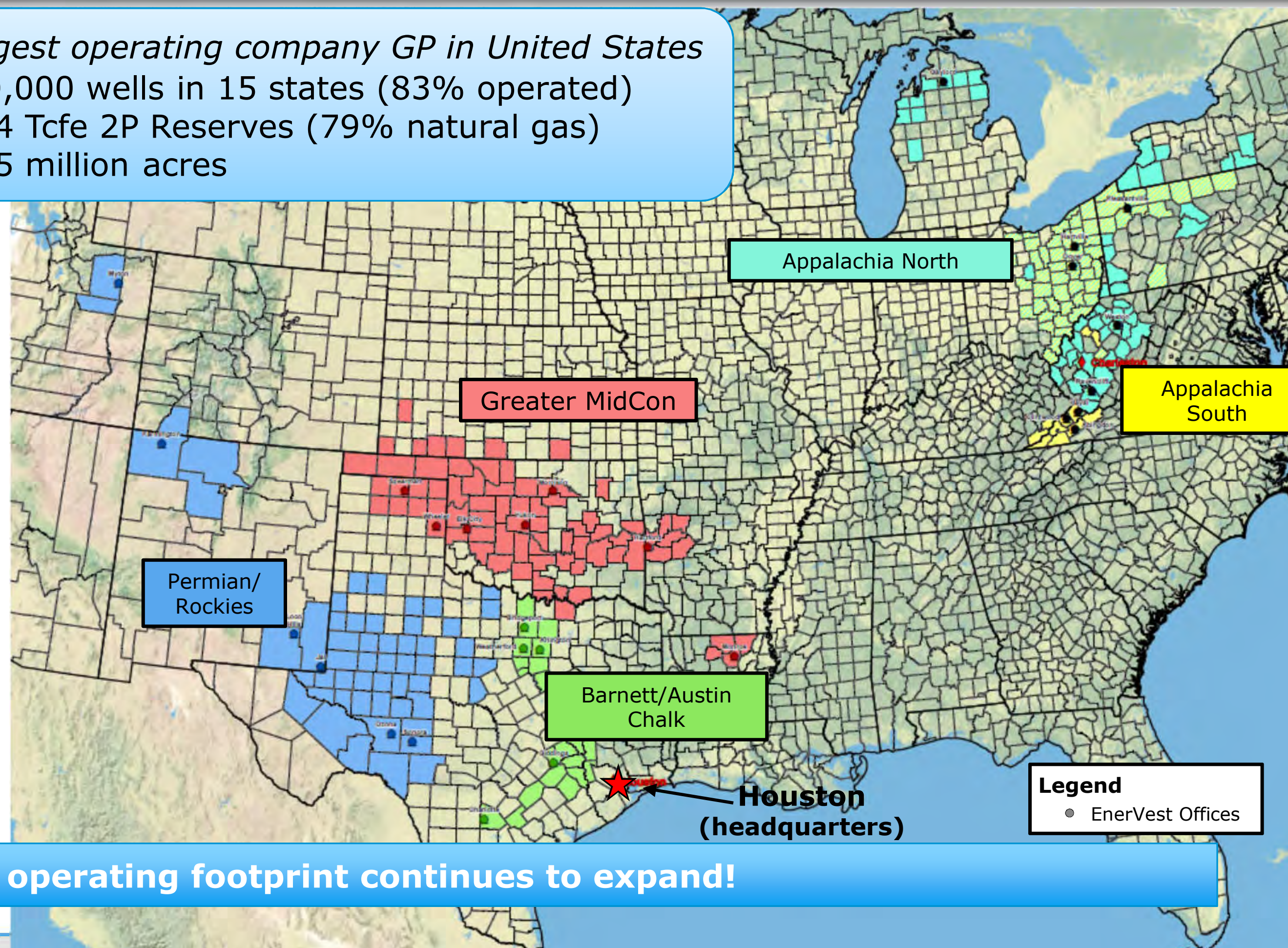
# AUM of $7 Billion

- 1,174 employees
- 2 Corporate Offices
- 27 District Offices
- 5 asset regions

*Largest operating company GP in United States*
- 40,000 wells in 15 states (83% operated)
- 9.4 Tcfe 2P Reserves (79% natural gas)
- 6.5 million acres

## ENERVEST

- Strong franchise for 24 years as an operating company GP (largest in U.S.) for institutional investors
- ENERVEST'S AUM totals ~$7 billion
- Previous PE funds were invested through various cycles and have ranked above average or top quartile
- Recently closed Fund XIV (~$3.9B of total capital) and in Investment Period
- Dominant operating positions across U.S. onshore provide strategic economic advantages, especially in down cycles




**EnerVest's operating footprint continues to expand!**

# ENERVEST Team:
# Depth, Breadth, Skill and Stability

ENERVEST

**As a private equity operating company, the sizable, diversified portfolio encourages knowledge sharing between teams and allows for many operating efficiencies**

- **ENERVEST, LTD.**
  - John Walker (CEO) (24 yrs.)
    - Jim Vanderhider (CFO, EnerVest, Ltd & CEO, EIGP) (20 yrs.)
      - **EIGP**
        - Institutional Marketing
        - Accounting/IT
        - Finance
        - Tax
    - Phil DeLozier (EVP) (9 yrs.)
      - Business Development and A&D
    - Mike Mercer (CEO, EVEP) (15 yrs.)
      - **EVEP**
    - Ken Mariani (President) (16 yrs.)
      - Legal
      - HR
      - Office Facilities
      - **EnerVest Operating**
        - Dave Kyte (CEO) (9 yrs)
          - Jud Walker (COO) (6 yrs.)
            - Asset Teams (5)
            - Land
            - Drilling
            - HSE
            - Field Operations

# Fund XIV Model Portfolio & EnerVest Investment Strategy

### Model Portfolio

- 10-15 investments in onshore, U.S. upstream assets
- Establish/Maintain/Leverage upon top 10 producer rankings
- Geographic diversification across at least 4 basins

### How will Fund XIV differ?

- Expected pace of investment of 3 to 4 years
- Higher PDP % early on
- Greater diversification / target more oil
- Co-investment strategy (no management fee or carry)

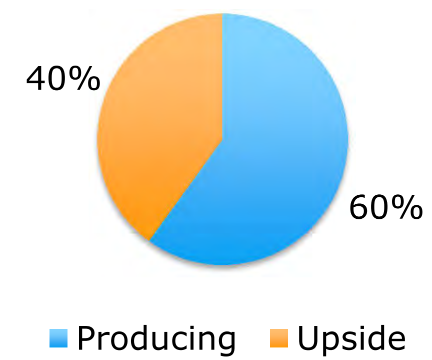
### Targeted Minimum Returns (net)

**20% IRR**
**(or top quartile in sector)**

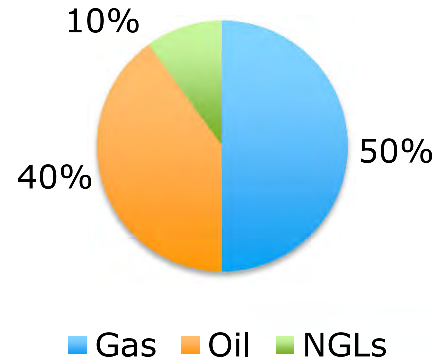
**2:1 ROI**

**8% Distribution Yield**

### Reserve Profile (Volumetric)

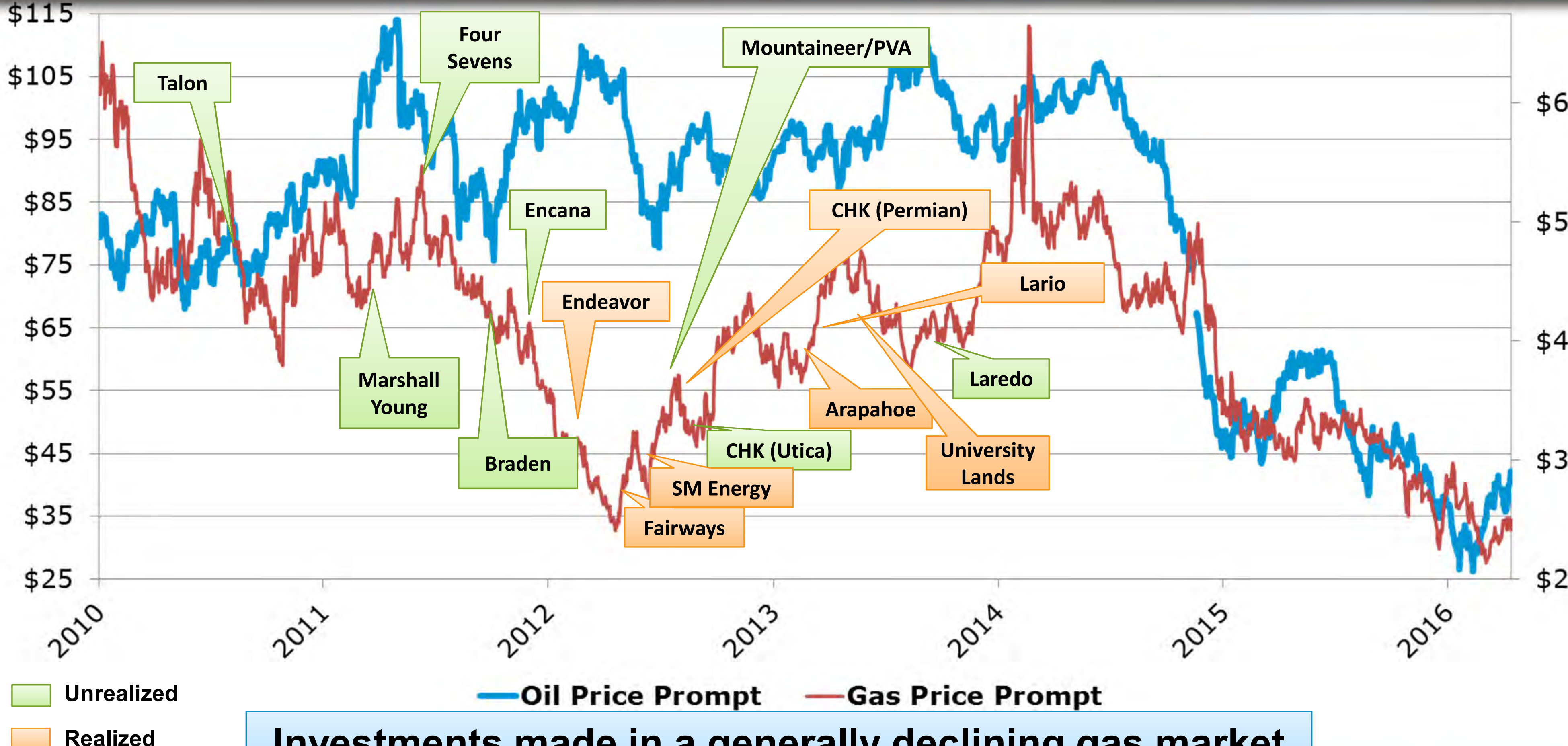



### Production Profile



# Fund XII:
# Investment Timing In Commodity Price Cycle

ENERVEST




**Investments made in a generally declining gas market & collapsing NGL market**

# EV Fund XII Investment Status & Action Plans

ENERVEST

## Fund XII

| | |
|---|---|
| Formation Year | 2010 |
| Fund Size | $2.4 B ($1.5 B Equity) |
| % Paid Out | 65% |

## Current Status

- Fund is in harvest stage
- Pursuing options to address $125 million debt amortization requirement by June 1st

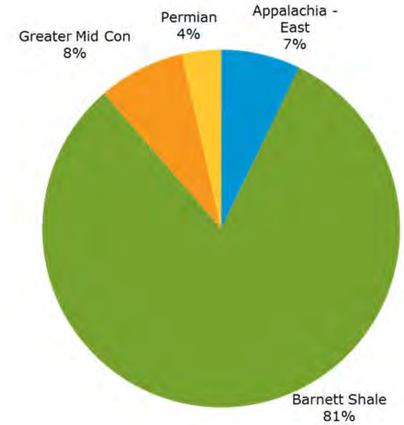
## Action Steps to Recapitalize

Multiple initiatives to reduce leverage, including:

- Creative solution in partnership with large P/E sponsor for a merger transaction involving the Barnett shale with a capital raise
- New equity raise solely for Fund XII
- Asset sales

## OCERS Investment

| | |
|---|---|
| Contributions through 3/31/16 | $40.0 MM |
| Distributions through 3/31/16 | $25.4 MM |
| Net Invested Capital | $14.6 MM |
| NAV @ 12/31/15 | $ 3.2 MM |




**Proven + Probable Reserves**

1.2 TCFE as of January 1, 2016 (72% Gas, 80% Proved, 48% PDP)

Production 125 MMCFE/D

R/P 27 years

# Summary of Fund XII Recapitalization

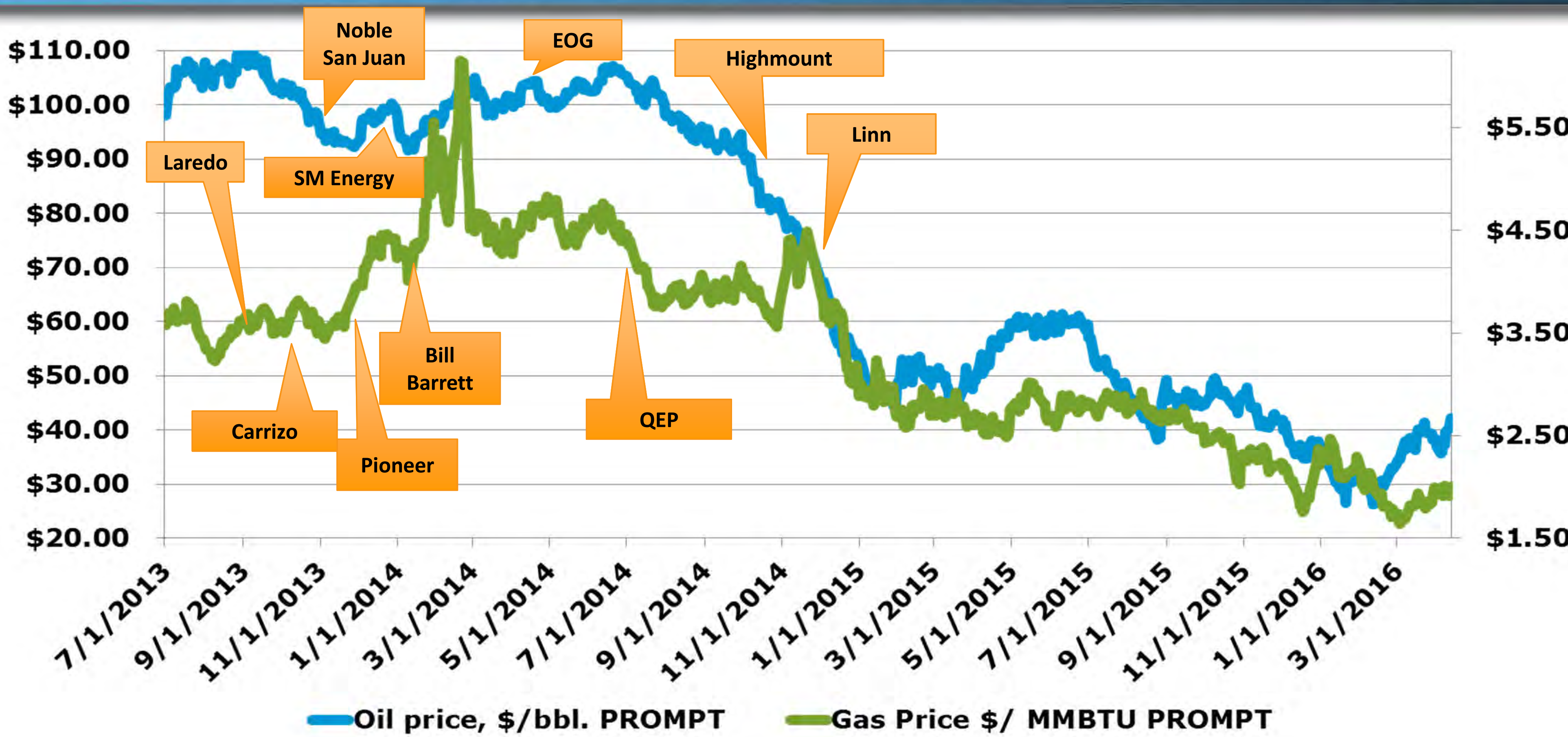
ENERVEST

## Creation of Newco with a large P/E Sponsor

- EV and large P/E sponsor in ongoing discussions since December 2015 to explore a strategic combination that will combine the 5th and 8th largest Barnett producers
- They will contribute certain upstream assets (primarily Barnett but also in North Louisiana, Central Mississippi and South Texas) from a portfolio company to a new partnership ("Newco")
- Relative equity values between large P/E sponsor & EV have been evaluated and parties have preliminarily agreed on a 50/50 ownership and governance structure with a term sheet to be completed by the end of April
- EV will be the go-forward operator of Newco and has begun constructing a business and operating plan for Newco; meaningful operating cost synergies have been identified along with the significant G&A savings that will result from the combination
- Parties are working with each Party's respective lenders and requesting to have existing credit facilities combined into new credit facility for Newco that will provide longer term coverage visibility and allow for capital raise if needed by end of 2017
- This is our preferred option as the combination of our Barnett assets creates a compelling story for accretive economic benefits due to the enhanced size and scale of the reconstituted platform

# Fund XIII:
# Investment Timing in Commodity Price Cycle

ENERVEST




**Investments made in a generally flat commodity price market until the down cycle**

# EV Fund XIII Investment Status & Action Plans

ENERVEST

## Fund XIII

| | |
|---|---|
| Formation Year | 2012 |
| Fund Size | $3.3 B ($2.0 B Equity) |
| % Paid Out | 5% |

## Current Status

- Fund closed its final acquisition in December 2014
- Development stage, yet interrupted by down cycle
- Pursuing options to reduce senior debt by ~$300 million in anticipation of Spring 2016 borrowing base redetermination

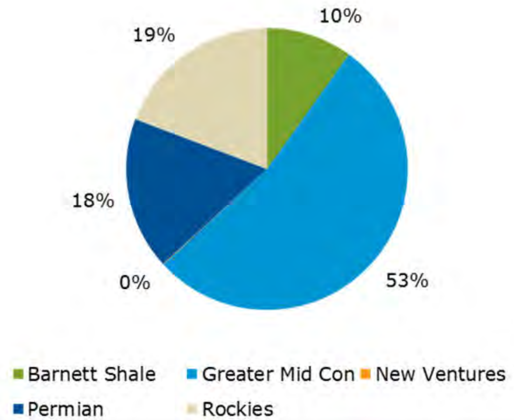
## Action Steps to Recapitalize

Multiple initiatives to reduce senior leverage, including:

- Sub Debt / Preferred Equity
- Asset Sales

## OCERS Investment

| | |
|---|---|
| Contributions through 3/31/16 | $40.0 MM |
| Distributions through 3/31/16 | $ 1.4 MM |
| Net Invested Capital | $38.6 MM |
| NAV @ 12/31/15 | $ 6.5 MM |



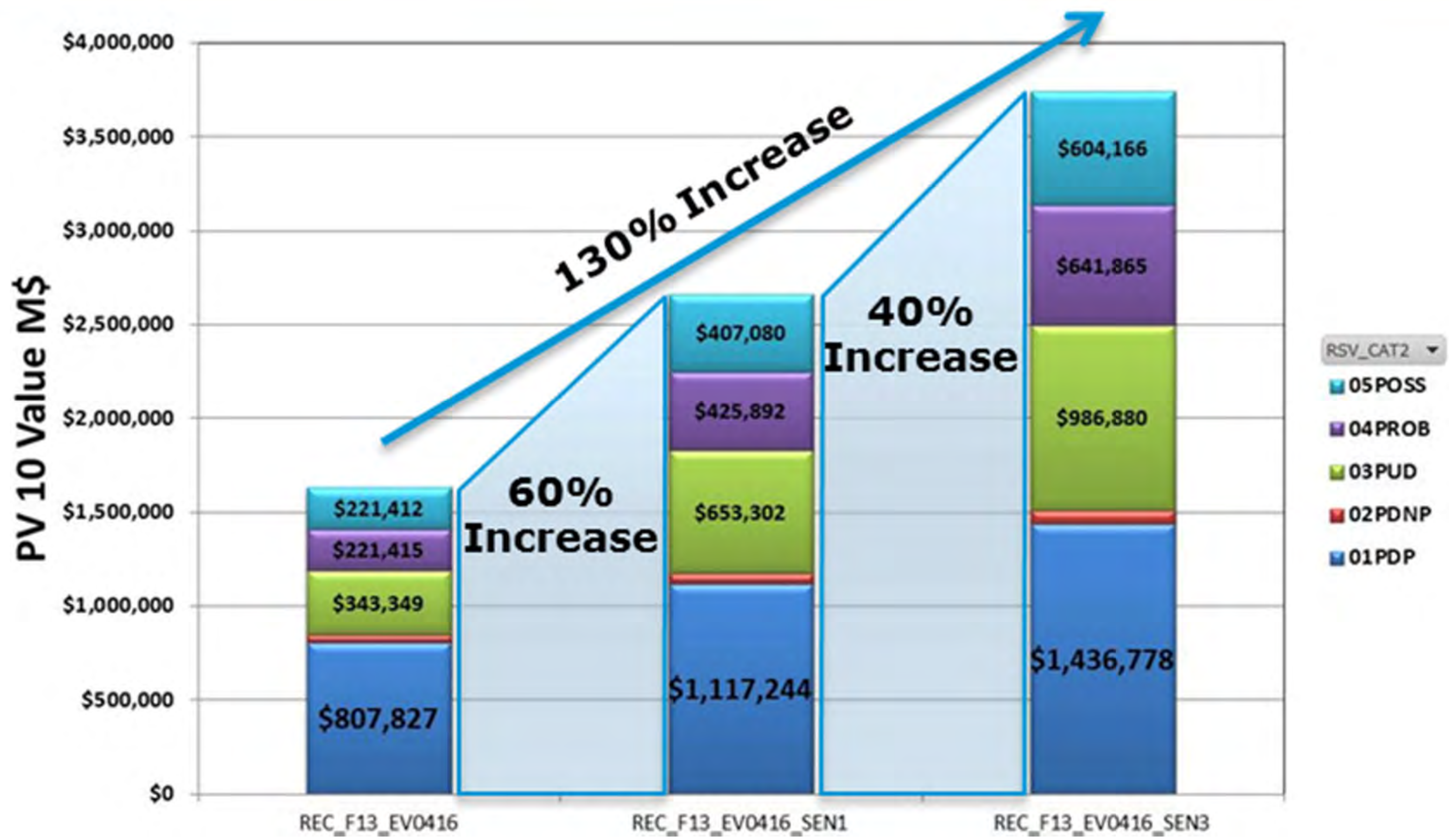

**Proven + Probable Reserves**

2.7 TCFE as of January 1, 2016 (72% Gas, 77% Proved, 41% PDP)

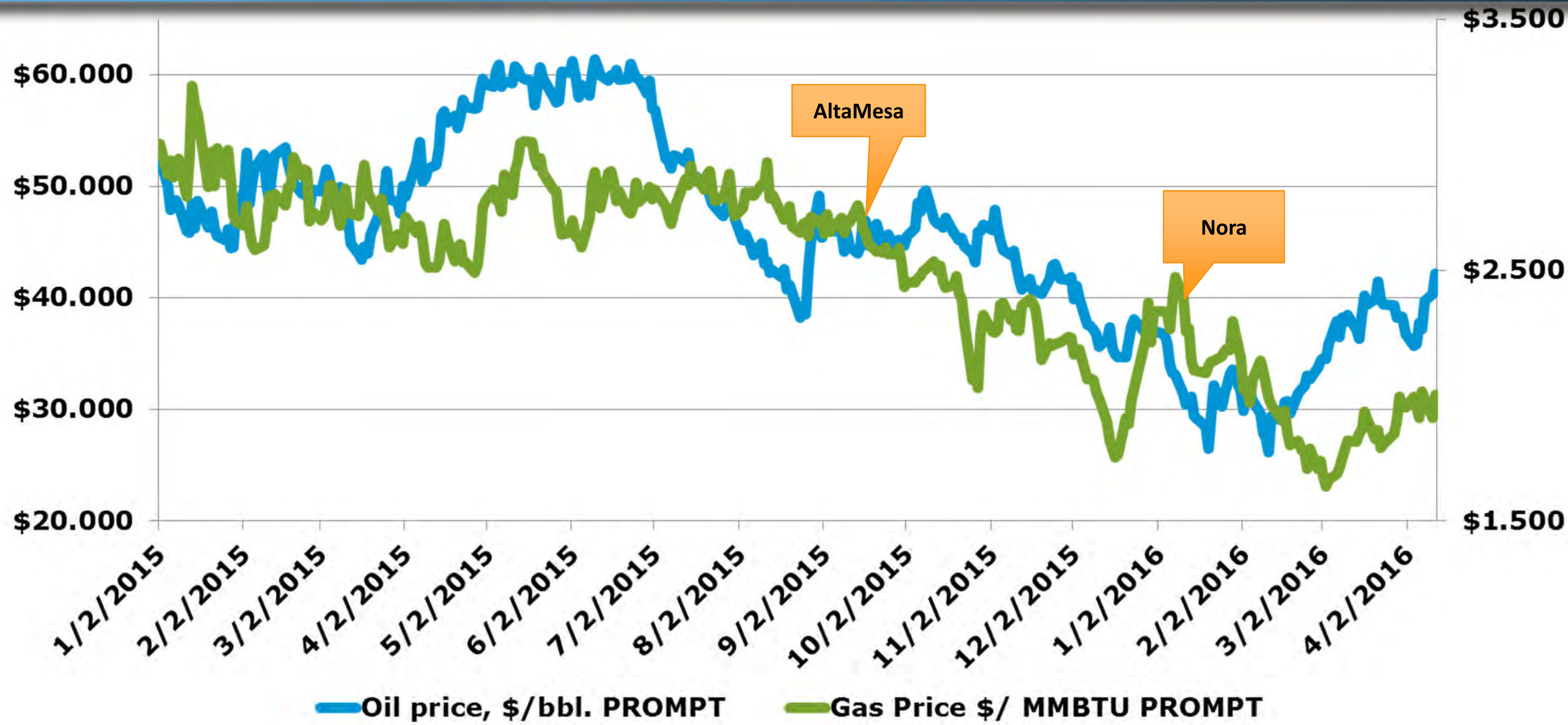
Production 320 MMCFE/D

R/P 23 years

# Significant Upside Remains for Future Development



# Fund XIV:
# Investment Timing in Commodity Price Cycle




**Investments made at historically low oil & gas prices**

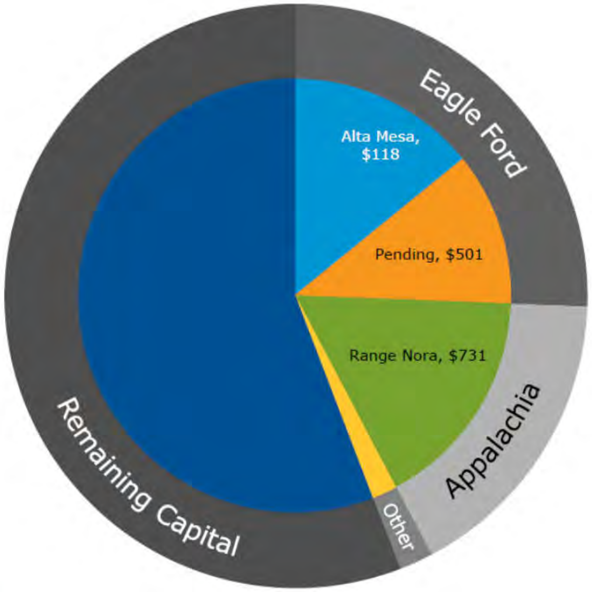
# Fund XIV Investments
## ($MM)

ENERVEST

| Fund XIV Capital by Acquisition | | |
|---|---|---|
| Alta Mesa | $118 | 3% |
| *Pending* | $501 | 13% |
| **Eagle Ford** | **$619** | **16%** |
| Range Nora - XIV | $876 | 23% |
| (Range Nora - XIV Co-Invest.) | ($145) | n/a |
| **Appalachia** | **$731** | **19%** |
| **Other *** | **$82** | **2%** |
| **Remaining Capital** | **$2,444** | **63%** |
| **Total** | **$3,876** | **100%** |

* Other includes working capital, due diligence costs, management fees and other fund level expenses through 4/1/2016.

| OCERS Investment | |
|---|---|
| Contributions through 3/31/16 | $12.9 MM |
| Distributions through 3/31/16 | $ .1 MM |
| Net Invested Capital | $12.8 MM |
| NAV @ 12/31/15 | $11.5 MM |



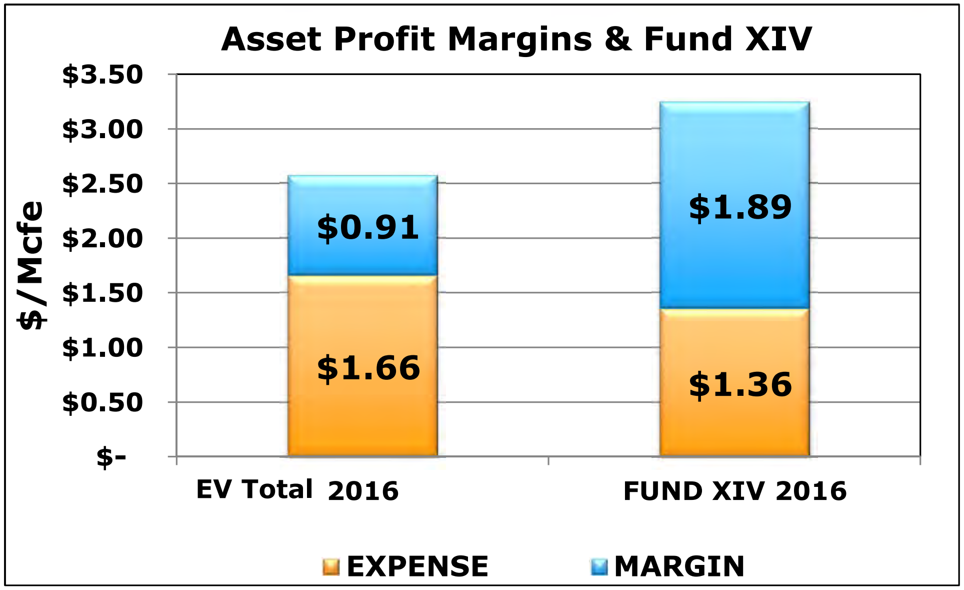

**Fund XIV capital is being deployed across select, premier U.S. regions**

# Fund XIV Acquisition Prospects & Objectives

ENERVEST

**Current Deal Pipeline**

| Asset/Area | % Gas | Est. Value ($MM) |
|---|---|---|
| West Texas | 35% | $700-800 MM |
| South Texas | 13% | $700-800 MM |
| Appalachia | 100% | $100-150 MM |
| West Texas | 25% | $100-150 MM |
| ArkLaTex | 71% | $300-400 MM |
| South Texas | 90% | $50-100 MM |




- Target assets with higher profit margins
- High-quality oil properties in the Eagle Ford Shale Play in South Texas
- High-quality oil properties in the Wolfcamp and Bone Springs Plays in Permian Basin
- Attractive bolt-on acquisition opportunities in each area of EnerVest operations

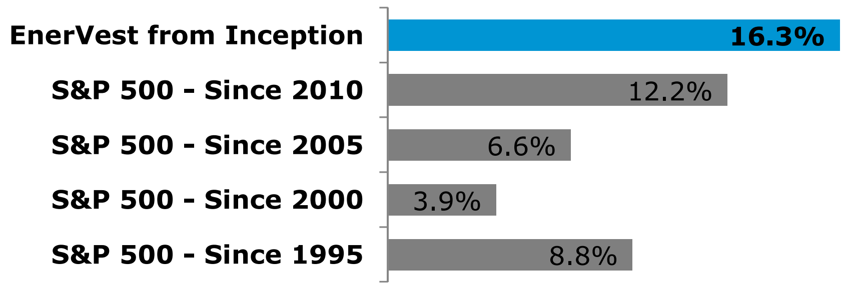
# EnerVest Private Equity Track Record

ENERVEST

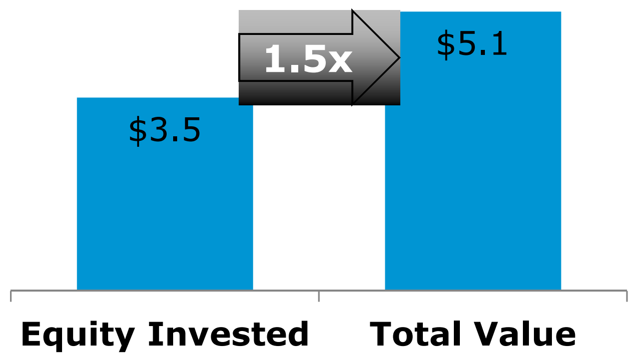
**16.3% net IRR since 1994 inception**

- EnerVest has *outperformed the S&P 500 by 8%* since inception
- Our team has generated higher returns than the S&P 500 *no matter the entry point*
- All multi-investor funds have either produced *above average or top quartile returns* to-date
- While commodity prices affect our returns and energy PE benchmarks, we *create value and reduce costs* in spite of them through our *clearly defined value creation process*

**EnerVest Funds I-XII vs. S&P 500 Total Return**




**All Investments (Funds I-XII)**



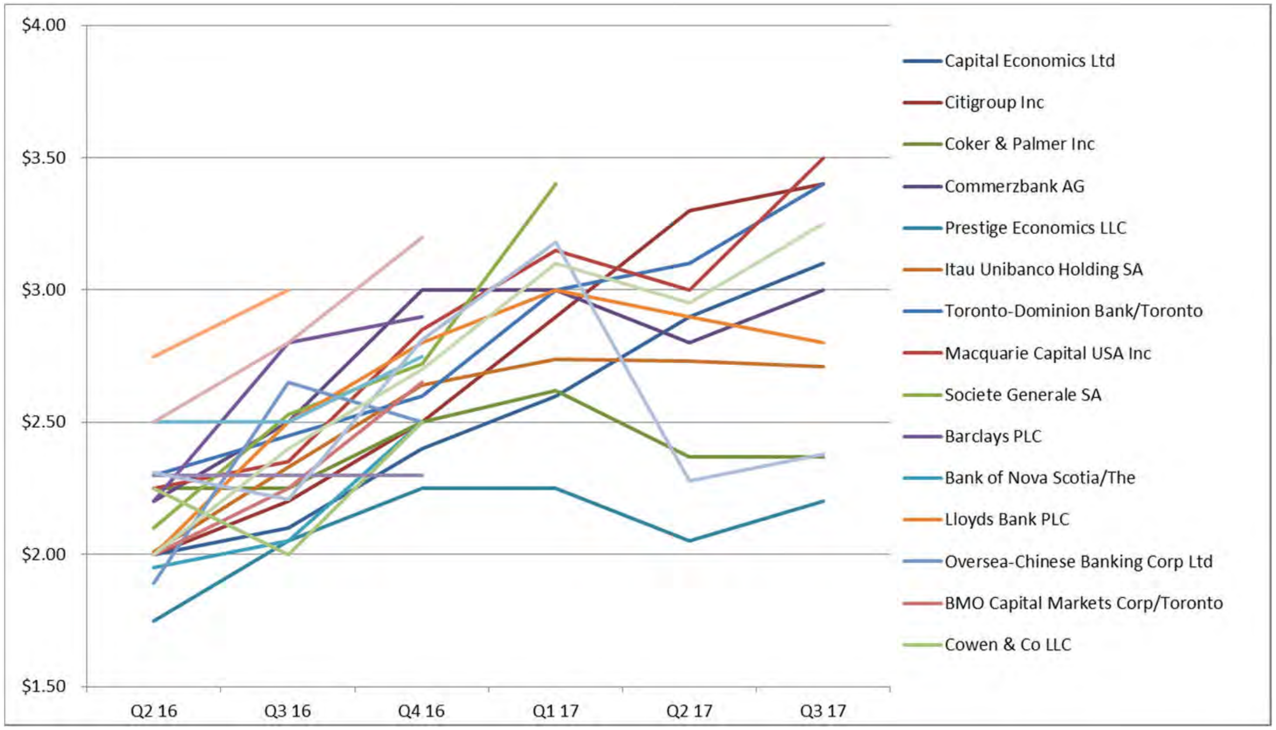

*Notes:*

- *Composite return as of 12/31/15.*
- *Return is net to LP investors after carried interests, management fees and commodity hedge settlements.*
- *Composite return is based on EnerVest's first 12 funds, which represent all of the private equity funds that have been invested for at least 36 months prior to 12/31/15.*
- *Capital invested includes all management fees and working capital cash called from LPs and Total Value includes all reserve and acreage value in addition to working capital and hedge MTM.*

# Natural Gas Price Forecasts

ENERVEST

- Entered the 2015/2016 winter with 4.0 Tcf in storage (all-time record) and have experienced warmer than normal winter. Both factors have put downward pressure on natural gas prices, which reached a 17 year low of $1.63 in March
- U.S. gas storage levels stand at 2.47 Tcf, 58% above last year and 41% above the 5 year average
- Production has likely been declining in many regions since May 2015, as gas rig count fell in April to lowest level since 1987
- Northeast U.S. production set a new record on 2/5/2016 at 23.1 Bcf/d primarily due to new pipeline capacity coming on line in the region



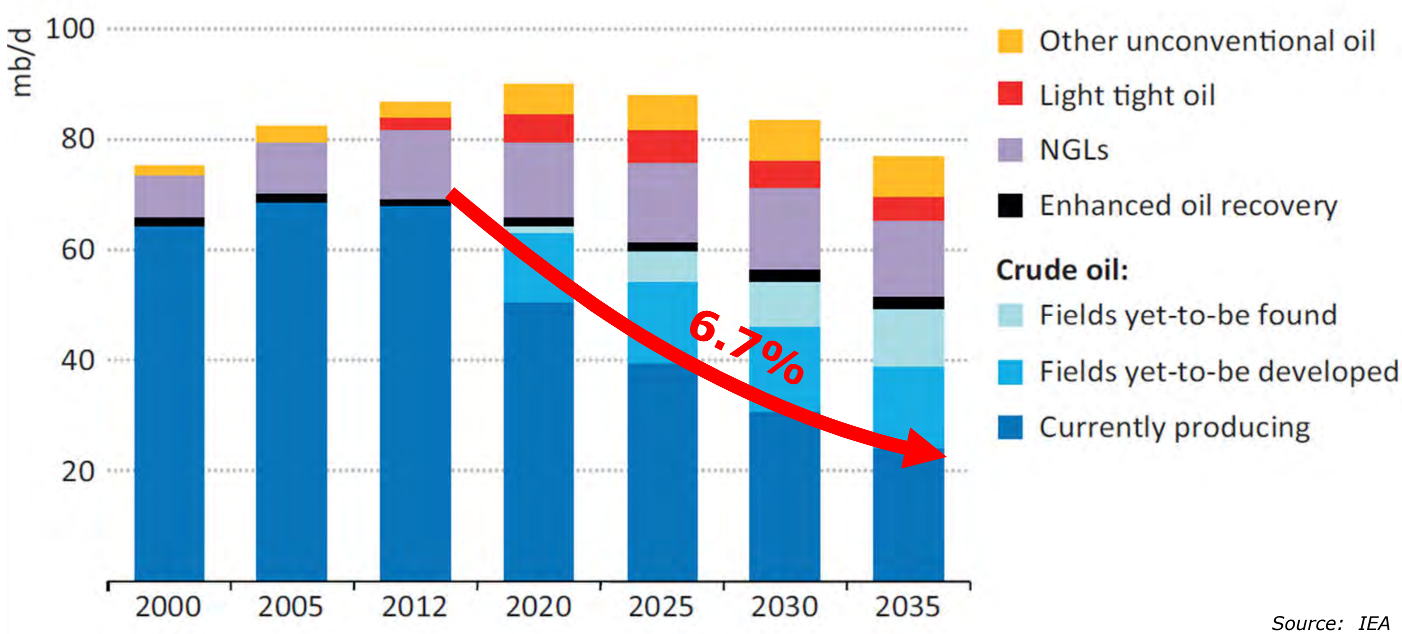

**NG market sentiment varies widely based on the perception of Supply/Demand fundamentals**

# Global Oil Decline

ENERVEST

In the 2008 report, the IEA stated: "We estimate that the average production-weighted observed **decline rate worldwide is currently 6.7%** for fields that have passed their production peak. In our Reference Scenario, this rate increases to 8.6% in 2030." This figure was derived from an analysis of production from 800 fields, which included 54 super fields. The report also included other decline statistics:

- The observed post-peak decline rate averaged across all fields was 5.1%
- The average for "super-giant" fields was 3.4%
- The average for "giant" fields was 6.5%
- The average for "large" fields was 10.4%
  *(note the decline rate increases with smaller fields)*




Source: IEA

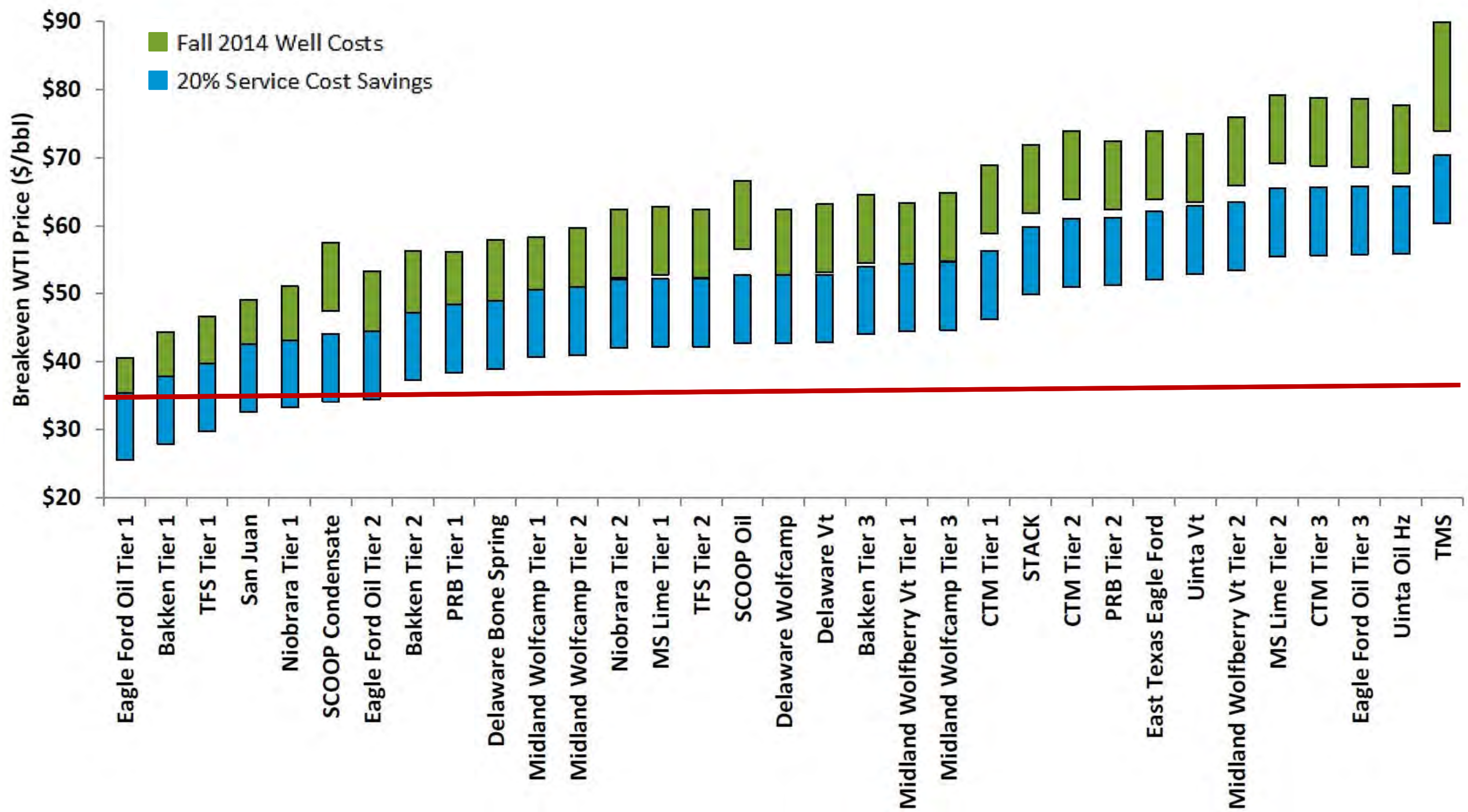
# Breakeven Oil Price for Drilling to Achieve a 10% Return

With reduced drilling and completion costs, the rates of return (chart to right assumes 10% rate of return) on wells in various plays throughout the U.S. are understandably requiring lower oil prices

Upstream firms with large, concentrated positions have the ability to reduce costs more than small firms (e.g. portfolio companies of large private equity firms)

While service cost saving vary by basin and by operator, the industry and EV have secured savings of 20-30%

EnerVest Fund XIV's first acquisition was in the Tier 1 section of the Eagle Ford Shale – the most economic basin in the U.S.




*Notes: Breakevens represent the WTI price needed to achieve a 10% ROR; Assumes $3.75/mcf NYMEX gas*
*Source: Company presentations and Tudor Pickering Holt & Co. (4/28/2015)*

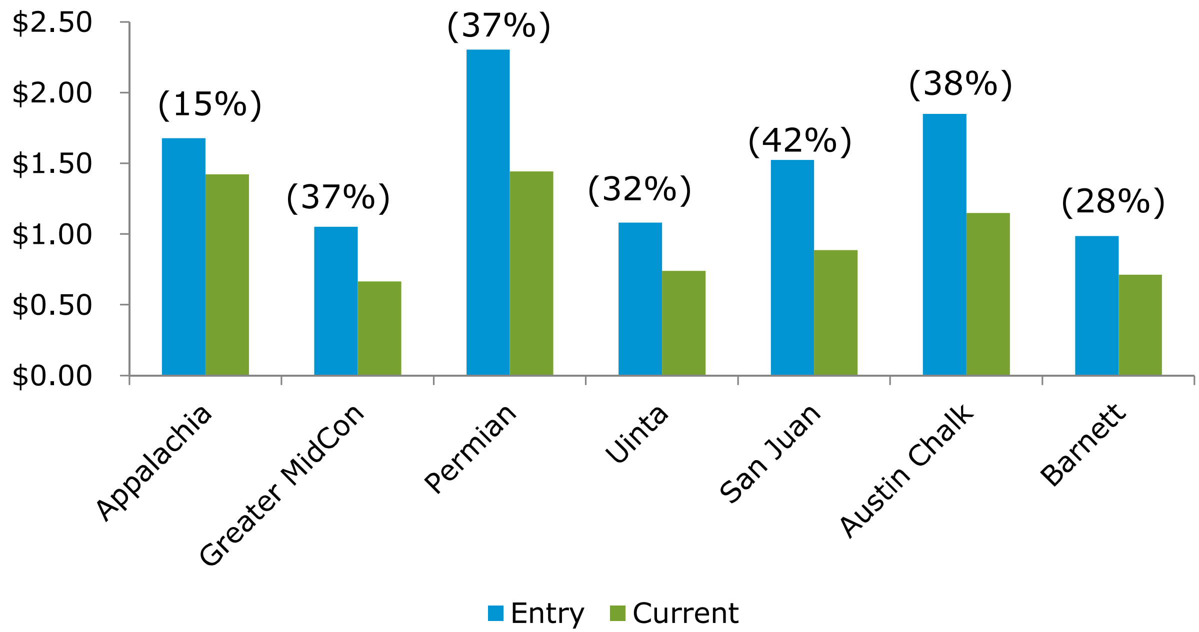
# Basin Dominance is a Key EV Strategy

EnerVest

**EnerVest Basin Status & Producer Ranking**

| | |
|---|---|
| Austin Chalk | • #1 Producer |
| Appalachia | • Top 10 Producer<br>• #3 Conventional |
| Barnett Shale | • #4 Producer |
| Granite Wash | • Top 3 Producer |
| Michigan | • #5 Producer |
| Ohio | • #1 Conventional Producer |
| Texas | • #6 Natural Gas Producer |
| Uinta | • Top 10 Producer |
| Utica | • #2 Acreage Holder |
| U.S. | • Top 25 Producer |

**EV Direct Operating Costs by Area ($/Mcfe)**




Note: As of 12/31/15

**Dominant basin positions provide operating synergies & cost advantages**

# Hedging: Risk Management Policy to Protect/Enhance Returns

ENERVEST

**Public E&Ps only hedged 30% in 2016 & 15% in 2017**

**Why Hedge?**

- Oil and gas prices are extremely volatile
- Inability to project future oil and gas prices with certainty
- Strategic way to protect or enhance acquisition price assumptions to maximize IRR

**Risk Management Policy Highlights**

- Counterparty credit rating BBB or better
- No speculative hedges – all backed by production
- Maximum hedge period of 5 years
- Maximum hedge position of 90% of PDP volumes

**Derivative Counterparties**

Wells Fargo, J.P.Morgan, Citi, RBC, bp, Regions, Natixis, ING, Comerica, Scotiabank, Koch Supply & Trading

**Implementation Strategy**

- Hedge in connection with acquisitions
- Supplemental hedges following field development
- Hedge when volatility and/or market conditions warrant
- View on hedge tenor and hedge % is based on daily interface with counterparties, investment research and internal discussions
- Liquidity in the future's market has decreased due to the lack of participants (hedge funds) and the lack of counterparties (Dodd Frank)

# ENERVEST Contact Info

Headquarters:
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Houston, Texas 77002


**Jim Vanderhider**

| | |
|---|---|
| EnerVest, Ltd | Executive Vice President & Chief Financial Officer |
| EIGP, Ltd | President & Chief Executive Officer |

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Financial Analyst – Institutional Relations
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# EnerVest Update

- OCERS invested in three of their funds after 2010 beauty contest
  - XII (2010)  XIII (2013) and XIV (2015)
  - 2015 Energy Dislocation RFP investment in Fund XIV should be OK ?
  - Two in trouble, funds XII and XIII both reviewed by MMS in May; CIO on-site due diligence Aug 9

  - Manager formally on Watch status indefinitely
  - Multiple teleconferences with LPs in past 50 days

- Recapitalization approvals sought
  - OCERS CIO voted Yes
  - Achieved some minor concessions on deal terms if they survive

- Equity fund-raising solicitations underway
  - OCERS CIO declined on basis of new-equity options presented

## ENERVEST

Fund Name: EnerVest Energy Fund XII, EnerVest Energy Fund XIII, and EnerVest Energy Fund XIV
Strategy: Direct Energy
Structure: Commingled Fund
Client Relations Contact: Rainey Janke
Portfolio Manager(s): John Walker and Jim Vanderhider
Office Headquarters: Houston, TX
Auditor: Deloitte
OCERS' Inception Date: December 2010 for Fund XII, April 2013 for Fund XIII, and September 2015 for Fund XIV
OCERS' Net Asset Value: $3.2 million for Fund XII, $6.5 million for Fund XIII, and $11.5 million for Fund XIV

### Organization

EnerVest was founded in 1992 by John Walker, President and CEO, and Jon Rex Jones, Chairman. EnerVest is an operating company that raises institutional capital and invests directly in oil and gas properties. The partners of EnerVest are EnerVest Advisors, Ltd. (a partnership owned by the principals, other members of EnerVest's management team, and certain management team members directly) and Jones EnerVest, Ltd., a limited partnership beneficially owned by Mr. Jones and certain members of his family. The company has an eastern division headquartered in Charleston, West Virginia, and has field offices in Louisiana, Ohio, Pennsylvania, Colorado, New Mexico, Michigan, Oklahoma, Texas, and West Virginia. EnerVest has approximately 1,174 employees and operates over 40,000 wells in 15 states.

### Investment Philosophy/Process

EnerVest's investment strategy is to buy, fix up, and sell oil and gas properties. The company's main objective is buying where there is already reserve activity. EnerVest's basic philosophy is investing in proven oil and gas properties in North America basins containing established production history, consolidation potential, and ample undeveloped acreage. EnerVest pursues properties where it can serve as operator and control the timing, cost, and nature of the work for the property. Once a property has been purchased, EnerVest strives to lower costs significantly, enhance production levels through development drilling and other initiatives, do accretive add-on acquisitions, and sell assets for attractive rates of return. EnerVest's main private business is 50% proven developed producing (PDP) and 50% upside value. The typical holding period for an asset is 3 to 5 years.

### Performance

EnerVest objective is to earn a net IRR of 20% (or top quartile in sector) and a 2 to 1 return on investment. Unfortunately, the investments in Funds XII and XIII have been impacted heavily by the collapse in prices of oil and gas. EnerVest is currently attempting to recapitalize both funds XII and XIII in order to allow for asset sales in a more favorable commodity price environment.

**Fees**
OCERS pays a 2% management fee on committed capital during the investment period and 1.5% of funded commitments after the investment period plus 20% performance fee after limited partners receive a 9% preferred return subject to an 80%/20% GP/LP catch-up provision until EnerVest receives 20% of all profits, at which point, EnerVest's profit split reverts to 20%.

**Staff Comments**
OCERS committed $40 million to EnerVest Fund XII in 2010. Fund XII has been fully invested and is in the harvesting stage. Fund XII is 65% paid out, and OCERS has received $25.4 million in distributions. OCERS invested $40 million in EnerVest Fund XIII in 2013. Fund XIII is also fully invested and is in the harvesting stage. Unfortunately, the remaining assets in Fund XII and the assets in Fund XIII have been negatively impaired by the collapse in energy prices. As of December 31, 2015, OCERS' investment in Fund XII has been written down to $3.2 million. OCERS' investment in Fund XIII has been written down to $6.5 million. OCERS committed $35 million to EnerVest Fund XIV in 2015, and this fund is in the investment stage with the potential benefit of investing in assets at more attractive prices.

In addition, EnerVest utilizes modest leverage for their funds at 45%. Due to the collapse in energy prices, bank regulators are requiring banks to reduce the amount of energy loans on their books. Due to the new regulations, Wells Fargo has accelerated the amount of money EnerVest must pay back in the recent borrowing base redeterminations. For Fund XII, Wells Fargo reduced the borrowing base to $265 million, requiring an amortization payment of $125 million by June 2016. EnerVest is trying to recapitalize the fund by entering into a partnership with a new private equity company instead of being forced to sell assets at very low prices to repay the debt. This strategy will hopefully provide EnerVest with the opportunity to divest the remaining assets in the fund in a better commodity price environment. For Fund XIII, EnerVest is pursuing options to reduce senior debt by approximately $300 million in anticipation of the May 2016 borrowing base redetermination. EnerVest is currently pursuing two actions for Fund XIII: asset sales and raising up to $300 million of second lien or unsecured capital. EnerVest expects to close on the sales of Verden/SM and Northern Tier/CT in Fund XIII by May 31st, which should result in approximate proceeds of $60 million. EnerVest also plans to take their Fund XIII asset Carrizo Barnett to the market in June 2016.

In February 2015, EnerVest announced that Mark Houser would be departing EnerVest, Ltd. Mark departed EnerVest after approximately 16 years to become CEO of the University Lands Office, an entity that provides value to Texas A&M University. Mark most recently served as President and CEO of EV Energy Partners. Mark was not listed as a Principal in Fund XIV since he was spending the majority of his time on EV Energy Partners. Mike Mercer replaced Mark as President and CEO of EV Energy Partners.

Staff does not have any compliance issues to report.

# Memorandum

**DATE**: May 25, 2016

**TO**: Members of the Board Investment Committee

**FROM**: Girard Miller, CFA, Chief Investment Officer

**SUBJECT**: **WATCH LIST AND PORTFOLIO SURVEILLANCE**

## Recommendation

Place EnerVest on Watch List.

## Background

EnerVest is an incumbent oil and gas exploration company in which OCERS has made three investments (Fund XII, XIII and XIV, in 2010, 2013 and 2015, respectively).

The firm appeared before the Manager Monitoring Subcommittee at its last meeting on May 3, 2016. In addition to working out a redetermination problem with their bankers for Fund XII, they reported a substantial mark-down of the value of Fund XIII.

Finance staff belatedly learned about the mark-down in the fair market value based on the current strip pricing subsequent to OCERS' external auditors, MGO, receiving confirmation letters, signed and dated by EnerVest on April 12, 2016, certifying the unaudited value of OCERS' share of the partner's capital accounts. While the confirmation letters did indicate that audited financial statements for the year ended December 31, 2015 were pending, there was no indication of a potential material write-down. Although OCERS staff had reported the write-downs to our Manager Monitoring Subcommittee at its May meeting, we believe that the manager could have been more pro-active, timely and transparent in its reporting to OCERS. Although we appreciate that valuations are clearly in flux throughout the shale energy industry, we consider this shortcoming reportable to the full Committee.

## Analysis

These investments are closed-end private funds, so there is not a practical way for OCERS to exit its investments without taking a material pricing haircut in the illiquid secondary market. We also expect that the third investment, Fund XIV in 2015, will perform better because EnerVest will be acquiring properties at favorable prices. Accordingly we will most likely "ride out this horse" to the completion of these funds. In the meantime, however, I recommend that we maintain an ongoing Manager Watch status on this firm to deliver a message that better accountability is expected hereafter, and the firm's business practices will be closely monitored. I plan to conduct a routine periodic (18-month cycle) on-site due diligence review of EnerVest in the coming months once my schedule allows.

# Memorandum

**Submitted by:**

OCERS G.M.- Approved

Girard Miller, CFA

Chief Investment Officer

**Approved by:**

Steve Delaney

Chief Executive Officer

# C-20

# Memorandum

**DATE**: August 14, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **CRI - THE CONFERENCE ON SUSTAINABLE, RESPONSIBLE, IMPACT INVESTING**

## Recommendation

Approve Russell Baldwin's attendance and related expenses including overnight accommodations for "CRI - The Conference on Sustainable, Responsible, Impact Investing" on November 1-3, 2017 at the Hotel Del Coronado, San Diego, CA.

## Background/Discussion

The SRI Conference is the industry's seminal event. Thought leaders, investors, and investment professionals from all corners of the Sustainable, Responsible, Impact (SRI) investing universe convene to gain and share knowledge and strategies that align financial performance with positive change. CRI is catalyzing the shift to a more socially equitable and environmentally sustainable economy.

The CRI Conference is not a pre-approved educational event as identified in the OCERS Board's Education & Travel policy. Approval of conference related expenses therefore requires OCERS Board action. The cost for Mr. Baldwin's attendance includes registration ($995), lodging ($500) and mileage reimbursement ($100) for an approximate total of $1,595.

## Submitted by:

Steve Delaney
Chief Executive Officer

# The SRI Conference Schedule of Events: 2017

** Sessions Submitted for CE for CFPs, CFAs, and CIMAs*

| WEDNESDAY, November 1, 2017 | | | | | |
|---|---|---|---|---|---|
| 7:00am – 6:00pm | Conference Registration / Information Desk Open | | | | |
| 8:00am – 11:00am | Sponsor Setup in the Exhibit Hall<br>Mobile App Training with Sponsors | | | | |
| 8:00am – 12:00pm | Centre for Sustainability Excellence Training<br>(final four hours of a 12-hours course that began on Oct. 31)<br>~ Separate Registration Required ~ | | | | |
| 8:30am – 12:00pm | Fundamentals of Sustainable and Impact Investment Course *<br>The Center for Sustainable Investment Education, US SIF Foundation<br>~ Separate Registration Required. ~ | | | | |
| 11:00 am – 12:15pm | NEW PARTICIPANT ORIENTATION<br>*Sponsor: John Hancock Investments* | | | | |
| 12:15pm – 1:30pm | BUFFET LUNCH<br>Welcome!<br>*Sponsor: TBD* | | | | |
| 1:30pm – 2:00pm | PLENARY: *The Purpose of Capital*<br>Speaker: Jed Emerson | | | | |
| Breakout Sessions<br>2:15pm – 3:05pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| Sponsor Presentations<br>3:20pm – 3:40pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| 3:40pm – 4:10pm | BREAK<br>*Sponsor: Praxis Mutual Funds* | | | | |
| Breakout Sessions<br>4:10pm – 5:00pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| 5:00pm – 6:15pm | RECEPTION AND NETWORKING in the EXHIBIT HALL<br>*Sponsor: Eventide Funds* | | | | |
| 6:15pm – 7:15pm | DINNER<br>*Sponsor: Domini Social Investments* | | | | |

| | |
|---|---|
| 7:15pm – 7:30pm | INDUSTRY PIONEER PRESENTATION: ***Title TBD…***<br>Speaker: George Gay |
| 7:30pm – 8:20pm | PLENARY: *Sustainable Development Goals: Roadmap to a Truly Sustainable Future*<br>Speakers: Amber Nystrom, Patsy Doerr, others… |
| 8:20pm – 9:45pm | ICE CREAM SOCIAL<br>*Sponsor: Pax World Investments* |

| THURSDAY, November 2, 2017 | | | | | |
|---|---|---|---|---|---|
| 8:00am – 6:00pm | Conference Registration / Information Desk Open | | | | |
| 7:30am – 8:45am | US SIF Member Breakfast | | | | |
| 7:30am – 8:45am | BUFFET BREAKFAST in the EXHIBIT HALL<br>*Sponsor: Parnassus Investments* | | | | |
| 8:45am – 9:20am | *Gooood Morning, San Diego!*<br>Hotel del Coronado: History and Commitment to Sustainability<br>Introduction to SRIC17 Scholarship Winners | | | | |
| 9:20am – 10:15am | PLENARY: *The 'Global Norms' of Responsible Investing: Onward and Upward!*<br>Speakers: George Serafeim, John Streur, another TBD | | | | |
| 10:15am – 10:30am | INDUSTRY PIONEER PRESENTATION: ***Title TBD…***<br>Speaker: Alice Tepper Marlin | | | | |
| 10:30am – 11:00am | BREAK in the EXHIBIT HALL<br>*Sponsor: Saturna Capital*<br>Sponsor Bingo Drawing #1 | | | | |
| Breakout Sessions<br>11:00am – 11:50am | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| Sponsor Presentations<br>12:05pm – 12:25pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| 12:25pm – 1:30pm | BUFFET LUNCH<br>*Sponsored: Folio Institutional* | | | | |
| 1:30pm – 1:45pm | MOSKOWITZ PRIZE AWARD PRESENTATION | | | | |
| 1:45pm – 2:40pm | PLENARY *Title TBD…*<br>Speakers: Bill Shireman, Debbie Dooley, Kyle Meyaard-Schaap, Jerry Taylor | | | | |
| Breakout Sessions<br>2:55pm – 3:45pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |

| | | | | | |
|---|---|---|---|---|---|
| Sponsor Presentations<br>4:00pm – 4:20pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| 4:20pm – 5:00pm | BREAK in the EXHIBIT HALL<br>*Sponsor: TBD*<br>Sponsor Bingo Drawing #2 | | | | |
| 5:00pm – 5:40pm | PLENARY: How States Can Move Forward on Renewable Energy<br>Speakers: David Hochschild, Ken Locklin | | | | |
| 5:40pm – 6:10pm | INDUSTRY PIONEER PRESENTATION: ***Title TBD…***<br>Speaker: Matthew Weatherley-White<br>INDUSTRY PIONEER PRESENTATION: ***Title TBD…***<br>Speaker: Geeta Aiyer | | | | |
| 6:10pm – 6:25pm | ETHICMARK® AWARDS PRESENTATION | | | | |
| 6:25pm – 9:30pm | DINNER RECEPTION / EXHIBITOR FAIR in the EXHIBIT HALL<br>*Sponsor: Calvert Research and Management* | | | | |

| FRIDAY, November 3, 2017 | | | | | |
|---|---|---|---|---|---|
| 8:00am – 2:00pm | Conference Registration / Information Desk Open | | | | |
| 8:00am – 9:30am | BREAKFAST in the EXHIBIT HALL<br>TOPIC TABLES on the Windsor Lawn<br>*Sponsor: Matthews Asia* | | | | |
| 9:30am – 10:00am | SNEAK PEEK: The SRI Conference in 2018<br>Final Sponsor Bingo Drawing | | | | |
| 10:00am – 10:15am | INDUSTRY PIONEER PRESENTATION: ***Title TBD…***<br>Speaker: Nicholas Parker | | | | |
| 10:15am – 10:50am | PLENARY: *Title TBD*<br>Speaker(s): TBD… | | | | |
| Breakout Sessions<br>11:10am – 12:00pm | Carousel | Seabreeze | Palm / Sunset | Garden | Hanover |
| 12:00pm – 1:00pm | BUFFET LUNCH<br>2017 SRI Service Award Presentation<br>*Sponsor: Vert Asset Management* | | | | |
| 1:00pm – 1:50pm | Closing Plenary: *Reflections from Keynote Thought-Leaders*<br>Speakers: Amber Nystrom, Jed Emerson | | | | |
| 1:50pm – 2:00pm | Wrap Up. Appreciations.<br>Conference Officially Adjourns | | | | |

# Agenda Topics: 2017

As of July 28, 2017

## ESG Integration Track

### Trends in ESG Integration: Equity Indexes, Green Bonds, and Private Equity

ESG integration is spreading. Major asset owners have adopted sustainability indexes as a policy benchmark, ESG considerations are being robustly applied to the fixed income space (especially in the exciting green bond world), and private equity is primed for ESG take-off. This session will feature practitioner experts involved in applying ESG across asset classes.

### The Cost of a Climate Change Comb-Over

The cost of climate change has been estimated at over $67 trillion — just to address the global energy demand over the next twenty years. Non-energy costs associated with a changing climate will add dramatically to that figure. In this session, investment and environmental experts will discuss and demonstrate ways that investment capital can be directed to address this pressing need.

### Investing for a Better World: How the SDGs Are Reshaping Companies and Investing

This panel of experts will explore the potential for the United Nations' Sustainable Development Goals (SDGs) to serve as a sustainable investment framework. How is the impact investing field interacting with the SDGs? Is alignment with the SDGs applicable to or desirable for public equity investors for research and/or engagement processes? What's the path forward from here?

### ESG Data / Ratings: New Kids on the Block

Ratings, reporting, and data sets are increasingly evolving to help investors better understand the implications and potential materiality of ESG issues. New players have emerged and are working to extract signals from the noise. This panel of experts will discuss and demonstrate how natural language processing, real-time risk analysis, and other cutting-edge technologies can provide actionable insights from big ESG data.

### Moskowitz Prize Winning Study: Understanding the Significance

The Moskowitz Prize is awarded annually for excellence in academic research on a topic germane to the socially responsible investment industry. Lloyd Kurtz will introduce the 2017 winner who will review findings of the prize-winning study, and briefly discuss other recent and noteworthy contributions to the academic literature on sustainable, responsible, impact investing.

## Professional Education Track

### Impactful Matchmaking: How Advisors First Talk Impact with Clients

### What Every Advisor Should Know About Running a Successful SRI / ESG Practice

This session is designed to provide guidance and best practices for newly-minted as well as seasoned advisors offering responsible investment strategies. This dynamic expert panel will share their journey in building a successful practice and offer key considerations integrating sustainable, responsible, impact investing into their practices. The discussion will cover the alphabet soup of terminology, screening the universe of SRI asset managers to determine best fit for clients, and how to conduct due diligence on this growing segment of the financial services industry.

### Active and Passive, International, Domestic: Perspectives on ESG Integration at the Portfolio Level

This expert panel will help advisors and investors understand the advantages and differences in ESG implementation in both active and passive investments, as well as international and domestic portfolios.  Asset Managers will discuss differences and opportunities in portfolio construction, company engagement, and diversification versus concentration. Plan to leave with a firm basis for judging future investment options in the SRI / ESG space.

### Know What You Own: Truth Beyond the Facade

Critically assessing companies for clients' portfolios is an important part of financial advising.  Learn and understand important tools available for ESG monitoring and company ratings so that your portfolio management reflects clients' values and financial requirements. Hear examples of effective shareholder activism providing positive impact in the marketplace. Ranking products and services by sustainable criteria and "telling stories" that convey inherent quality and value will find their way to consumers' hearts, minds and wallets — now more than ever.

### Guiding Foundations Toward Positive Impact

What are the best practices for working with board members of foundations and endowments to help them further their mission using SRI and impact investments? In this session, seasoned advisors and foundation representatives discuss how to gain access, get hired by, and successfully influence such organizations toward greater positive impact.

### Beyond Word-of-Mouth: How Can Marketing Be Part of Your Plan?

Great client experiences and fostering referral sources are the lifeblood of new business. To achieve steady and managed growth, however, some level of formal marketing should be part of the plan. How can you keep your focus on clients and still find time to tell your story to a wider audience? We'll share success stories and discuss real ways to better capture your unique value, prioritize the type of marketing that works best for you, and map out realistic goals. You'll see an impact on your growth and feel more confident in the future of your business.

## GOVERNANCE TRACK

### Climate Change and Company Boards / Management Teams

Company policies on climate change are receiving an increasing amount of attention. Do company boards and management teams have the appropriate tools and frameworks they need to allow for the disclosure of governance around climate change? Can disclosure be integrated into reporting on risks and opportunities?

### Stewardship, Sustainability, and the Metrics of Materiality

What does responsible ownership have to do with meaningful financial disclosure? Corporate board members are charged with ensuring that shareholder capital is managed responsibly while dealing with competing definitions of materiality. This session explores how stewardship can help lead to long-term value creation for corporate stakeholders and the ways it should be reported to demonstrate success.

### Gender / Diversity / Board Make-Up / Trust: What Makes a Great Board

### Inequality, Sustainability, and Board-Level Accountability

ESG funds are increasingly engaging boards on their firm's track record on social equality, including shareholder proposals supporting minimum wage reform and ending the gender pay gap. At the same time, global stewardship commitments by asset owners are increasing pressure on boards to formally integrate ESG risk assessment into their governance principles. This session will discuss what's working for investors.

## Shareowner Advocacy Track

### Conflict-Free Electronics: How Advocates, Investors, and Corporations Can Collaborate to Protect Human Rights in the Mineral Supply Chain

Section 1502 of the Dodd-Frank Act requires companies to disclose whether the minerals found in their products originated in the Democratic Republic of the Congo or an adjoining country. The goal is to protect locals who are enslaved and forced to work mining ores that fund genocide and terrorism. The current administration is planning on rolling back the rule. How can NGO advocates, corporations, and investors collaborate to ensure that minerals used in electronics remain conflict-free?

### Powering Forward: Leveraging Demand to Create a Clean Energy Economy

Many large companies are setting aggressive energy efficiency, renewable energy, and greenhouse gas reduction goals. How can investors partner with portfolio companies and other stakeholders to create a roadmap for emerging best practices? How can increasing demand for renewable energy be leveraged to overcome the lagging supply of renewable options from utilities and adequate financing from banks?

### Shareholder Advocacy and Sustainable Agriculture: Let's Talk About the Workers

A resilient food future depends on a healthy and engaged workforce.  This panel will explore how investor advocates, a multi stakeholder non-profit, and companies can take action to improve pollinator health and promote worker empowerment, recognizing both critical to reducing risk and driving long term value in the way food is grown and sold.

### Measuring the Impact of Shareowner Advocacy

## Community Impact Investing Track

### Investing in the Power of Inclusion

With increased interest in gender diversity among the ranks of corporate and investor leadership, this panel will help the audience understand the resultant opportunities: What are the links between diversity and performance, and how can investors go about building a portfolio of companies, projects, and managers across asset classes that are leveraged to the strengths of women in leadership positions?

## What Are Your Assets Up To? Next Generation Impact Monitoring for Listed Equity Portfolios

Investors at all levels are increasingly seeking better metrics to assess the real-world impact of their portfolios - both negative and positive. The pioneering work of the GIIN has pushed the envelope, calling on investors to develop and report concrete impact metric, going well beyond monitoring risks such as simple carbon exposure. This panel will discuss and debate the next generation of cutting edge analytical tools now offering better transparency, as investors seek to support positive impacts, and mitigate negative ones.

## Place-Based Investing: Catalyzing Community Development

Interest in place-based investing, or investing in the places people live in and love, is growing. Investing in the local community builds community resiliency and stimulates economic growth while producing financial returns. Retail and institutional investors are seeking out banking and investment opportunities that lead to sustainable and equitable community development as well as diversified and impact-generating portfolios.

## San Diego / Tijuana Cross-Border Economic Relationship — Unique and Vibrant

This session will feature experts discussing the unique and sophisticated economic relationship and financial impact of the San Diego and Tijuana area as well as the Cali-Baja mega region. It will offer an in-depth look at how the geographical location of San Diego and Tijuana contributes to a unique economic dynamic than other cross-border cities — very different than what one might expect from reading about the debate around “building a wall.”

# I-2

# Memorandum

**DATE**: August 14, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **INITIAL DISCUSSION OF TRIENNIAL STUDY OF ACTUARIAL ASSUMPTIONS**

## Recommendation

Receive and file.

## Background/Discussion

Every three years OCERS engages the actuary to conduct an experience study. That process involves comparing assumed to actual experience for the period of January 1, 2014 through December 31, 2016. Such a study will often lead to modifications to existing economic and demographic assumptions, as you will with the attached report.

There is only one difference between this final version and the "revised draft" sent out last Friday. The revised draft included cost impact broken out by rate group only for the "recommended" assumptions (page 62). This final also includes cost impact broken out by rate group for the two "alternative" sets of economic assumptions (pages 63 and 64).

Segal notes two things to keep in mind regarding the cost impact results in this final report.

First, these cost changes reflect both economic and demographic assumption changes. That means they will differ from the scenario projections Segal presented in July, which reflected changes in only the economic assumptions of expected return, inflation and across-the-board salaries.

Second, the difference in cost between the Recommended and the Alternative 1 economic assumptions is because, compared to Recommended, the 2.75% inflation assumption under Alternative 1 lowers the cost of the 3% COLA for the Legacy Tiers. Segal will discuss this in detail on Monday.

On August 21, 2017, Mr. Paul Angelo of Segal will make their first presentation of the results of the current actuarial experience study. His presentation is informational only, the Board will not be asked to make decisions at this meeting. Final approval is scheduled for the Wednesday morning, September 13 session of the Board's annual Strategic Planning Workshop.

# Memorandum

**Submitted by:**

Steve Delaney
Chief Executive Officer

Segal Consulting

## Orange County Employees Retirement System

# 2017 Actuarial Experience Study – 1st Presentation

## August 21, 2017

*Paul Angelo, FSA*

*Segal Consulting, San Francisco*



5501436v2

# Selection of Actuarial Assumptions

- New assumptions will be used in December 31, 2017 valuation
  - Sets contributions for 2019 – 2020 fiscal year
- Actuarial assumptions – two kinds
  - Demographic -- When benefits will be payable
  - Economic -- How assets, and salaries and benefits increase
- Objective, long term
- Recent experience of future expectations
  - Demographic: recent experience
  - Economic: not necessarily!
- System specific or not
  - All assumption are system specific except price inflation
- Consistency among assumptions
- Desired pattern of cost incidence
  - Good assumptions produce level cost
  - Beware "results based" assumptions!

# Always remember

$$C + I = B + E$$

**<u>C</u>ontributions + <u>I</u>nvestment Income**

**equals**

**<u>B</u>enefit Payments + <u>E</u>xpenses**

- Actuarial valuation determines the current or "measured" cost, not the ultimate cost
- Assumptions and funding methods affect only the timing of costs

# Demographic Assumptions

- Rates of "decrement"
  - Termination, mortality, disability, retirement
  - Termination
    - Withdrawal
    - Deferred vested
  - Mortality
    - Before and after retirement
    - Service, disability, beneficiary
- Percent married
- Member/spouse age difference
- Reciprocity
- Additional cashouts
- Assumptions can be distinct for General and Safety
  - Also for different Plans and different Rate Groups

# Setting Demographic Assumptions

- To determine rates for each assumption we count the "decrements" and "exposures" for that event
  - Exposures = Number of employees who could have terminated, retired, etc.
  - Decrements = Number of employees who actually terminated, retired, etc.
  - This gives the "actual" decrement rates during the period
- Compare to the "current" assumed rates (or to expected number of decrements based on those current rates)
- Develop "proposed" new assumption based on both "current" assumption and recent "actual" experience
  - Weight the "actual" based on "credibility"

# Setting Demographic Assumption – Retirement Rates

- Retirement Rates from Experience Study

# Age-based vs Service-based Retirement Assumptions

- Looked into developing retirement assumptions based on service instead of age
  - No discernable pattern
  - Improved if age used as additional variable
- CalPERS uses both age and service
  - Significantly larger entity with more exposures and decrements
- Would not have as much reliable experience for OCERS to develop credible retirement assumptions by age and service

# Recommendations - Demographic

- Retirement rates:
  - Maintain age-based assumptions
  - Overall, slight adjustments to retirement rates
- Termination rates:
  - Decrease in termination rates
  - Decrease assumption for how many members elect a refund
- Disability incidence:
  - Increase assumption overall
    - Decrease assumption for General OCTA members

# Setting Demographic Assumptions – Mortality

- Mortality Rates
  - Longer life expectancies
  - Mortality table
    - RP-2014: Headcount-Weighted vs. Benefit-Weighted
  - The Society of Actuaries has published scales to estimate future mortality improvements:
    - Scale AA - Has been standard since around 2000
      - Does not accurately reflect recent improvements in mortality
    - Scale BB - Interim standard scale issued in 2012
    - Scale MP-2014 – Issued in October 2014
    - Scale MP-2015 – Issued in October 2015
    - Scale MP-2016 – Issued in October 2016

# Setting Demographic Assumptions – Mortality

- Two ways to use mortality improvement scales to project future mortality improvements: Static or Generational
- Static projection to a future year - reflect mortality at a future date, not as of today
  - Preferable to have a margin of around 20%
    - Actual deaths during the study period should be around 20% greater than the expected deaths
  - Current assumption
    - RP-2000 projected to 2020 with Scale BB
      - For General, no age adjustment for males or females
      - For Safety, ages are set back two years for males and females

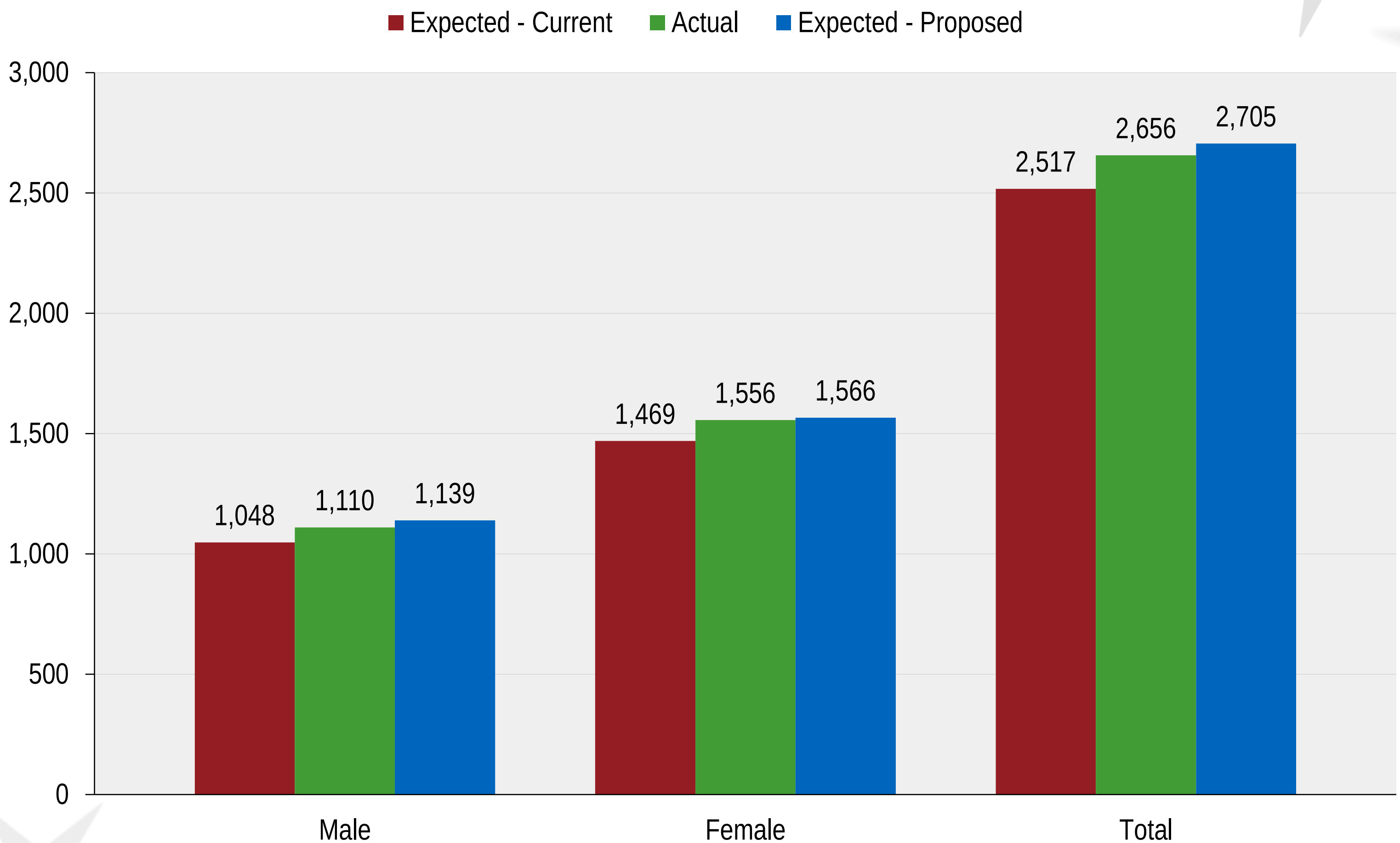
# Recommended Demographic Assumptions – Mortality

- Recommend generational mortality
  - Use most recent SOA tables as a starting point
  - Each future year has its own mortality table that reflects the forecasted improvements at every age
    - Probability of dying depends not only on age and sex but also what year it is
    - Younger participants have more future mortality improvement built in than for older participants
    - Current year tables reflect recent actual experience, with no margin
  - Headcount-Weighted RP-2014, projected generationally using the two-dimensional Scale MP-2016
    - For General, no age adjustment for males or females
    - For Safety, ages are set back four years for males and females
- Exception for member contribution rates for legacy tiers, and determination of optional benefits and reserves
  - Use static projection for 20 years
    - Approximates generational mortality

# Setting Demographic Assumptions – Mortality Rates

➢ Mortality Experience from Experience Study

CHART 15: POST-RETIREMENT DEATHS
NON-DISABLED GENERAL MEMBERS AND ALL BENEFICIARIES
(JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)



# Comparison to CalPERS' Mortality Table

- CalPERS does not develop separate mortality tables for different membership classes (i.e., General and Safety)
  - OCERS experience differs between General and Safety
  - CalPERS is considering moving towards separate tables
- CalPERS is considering moving to generational approach
  - Currently considering a 20% margin in selecting mortality assumptions
- All this considered, recommend continuing to use SOA tables as starting point for OCERS mortality assumption

# DISCUSSION

# Economic Assumptions

- Price Inflation (CPI):
  - Investment Return, Salary Increases, COLAs
- Salary Increases
  - Wage inflation (or payroll growth)
    - Includes price inflation plus “across the board” real wage growth
  - Promotional & Merit: based on experience
- Investment Return (Investment Earnings)
  - Components include price inflation, real return and investment expenses
  - Generally based on passive returns

# Current Economic Assumptions

- Last full review was for December 31, 2014 valuation
  - Price inflation (CPI): 3.00%
  - Wage inflation (includes price inflation plus real wage growth): 3.50%
    - So “across the board” real wage growth is 0.50%
  - Investment return: 7.25%
    - So net real return is 4.25%
    - Assumed return is net of investment and administrative expenses
- New assumptions will be used in December 31, 2017 valuation
  - Sets contributions for 2019 – 2020 fiscal year

# Economic Assumptions – Recommended and Alternative

- Price inflation (CPI)
  - Maintain at 3.00%
    - Alternative: decrease from 3.00% to 2.75%
- Salary increases – by component
  - Maintain price inflation component at 3.00%
    - Alternative: decrease price inflation from 3.00% to 2.75%
  - Maintain "across the board" real wage growth at 0.50%
  - Total wage inflation maintained at 3.50%
    - Alternative: total wage inflation reduced from 3.50% to 3.25%
  - Merit and promotional: Slight increases overall for General and slight decreases overall for Safety
  - Net impact on assumed future salary increases
    - Slight increase for General and slight decrease for Safety
      - Alternative: slight decrease for both General and Safety

# Economic Assumptions – Recommended and Alternative

- Investment return – depends on inflation component
  - Recommended based on 3.00% inflation
    - Recommended: Decrease from 7.25% to 7.00%
      - Reduces net real return from 4.25% to 4.00%
  - Alternatives based on 2.75% inflation
    - Alternative 1: Decrease from 7.25% to 7.00%
      - Maintains net real return at 4.25%
    - Alternative 2: Decrease from 7.25% to 6.75%
      - Reduces net real return from 4.25% to 4.00%

# Economic Assumptions – Recommended and Alternative

| | 12/31/2016 Valuation | | Recommended | | Alternative 1 | | Alternative 2 | |
|---|---|---|---|---|---|---|---|---|
| | Investment Return | Payroll Growth | Investment Return | Payroll Growth | Investment Return | Payroll Growth | Investment Return | Payroll Growth |
| **Price Inflation** | 3.00% | 3.00% | 3.00% | 3.00% | 2.75% | 2.75% | 2.75% | 2.75% |
| **Real Wages** | n/a | 0.50%* | n/a | 0.50%* | n/a | 0.50%* | n/a | 0.50%* |
| **Net Real Return** | 4.25%** | n/a | 4.00%** | n/a | 4.25%** | n/a | 4.00%** | n/a |
| **Total** | 7.25%** | 3.50%* | 7.00%** | 3.50%* | 7.00%** | 3.25%* | 6.75%** | 3.25%* |

* Assumed individual salaries increases also include "merit and promotion" component:
- Merit component varies by service
- For General, increase ultimate assumption from 0.75% to 1.00%
- For Safety, maintain ultimate assumption at 1.50%

** Return is net of investment and administrative expense

# Price Inflation (CPI)

- Historical Consumer Price Index
  - Median 15-year moving average = 3.4%
  - Median 30-year moving average = 3.9%
  - Averages have been declining due to recent low inflation
- NASRA Survey
  - Median inflation assumption is 3.00%
- Social Security Intermediate Forecast = 2.60%
- Market based inflation expectations = 1.87% (June 2017)
- Recommend maintaining at 3.00%
  - Segal's 2017 recommended inflation for all our California public system clients
  - Assumed COLAs remain unchanged (3.00%)
  - Considered but do not recommend stochastic approach to COLA assumption
- Alternatively, decreasing inflation to 2.75% is also reasonable
  - Assumed COLAs reduced from 3.00% to 2.75%

# Salary Increase Assumption - Recommended

- Three components
- Price inflation: maintain at 3.00%
  - Alternative: decrease from 3.00% to 2.75%
- "Across the board" real wage growth: maintain at 0.50%
  - Department of Labor: Annual State and Local Government real productivity increase: 0.6% - 0.9% over 10 - 20 years
- Promotional & Merit:
  - Based on years of service
  - General: 9.00% (0-1 years) to 1.00% (16+ years)
    - Small increases for some service categories
  - Safety: 14.00% (0-1 years) to 1.50% (16+ years)
    - Small decreases for some service categories
- Impact on total assumed future individual salary increases
  - Increase for General and decrease for Safety
    - Alternative: decrease for both General and Safety

# Payroll Growth Assumption

- Active member payroll growth based on wage inflation
  - Assumes constant future active headcount
  - Used to project total payroll for UAAL amortization
- Includes price inflation and “across the board” real wage growth
  - Price inflation: maintain at 3.00%
    - Alternative: decrease from 3.00% to 2.75%
  - “Across the board” real wage growth: maintain at 0.50%
  - Total is maintained at 3.50%
    - Alternative: total is reduced from 3.50% to 3.25%

# Investment Earnings Assumption

- Also called the discount rate, investment return
- Used for contribution requirements and financial reporting
- Affects timing of Plan cost
  - Lower assumed rate means higher current cost
  - Ultimately, actual earnings determine cost
    - **C + I = B + E**
  - "Can't pay benefits with assumed earnings!"

# Setting the Earnings Assumption

- Four components
  - Inflation: consistent with salary increase and COLA assumption
  - Real returns by asset class
    - Weighted by asset allocation
  - Reduced by assumed investment and administrative expenses
  - Reduced by "risk adjustment"
    - Margin for adverse deviation
    - Expressed as confidence level above 50%

# OCERS Earnings Assumption

## Preview:
## Components of Investment Return Assumption

| | Current from 2014 Study | Current, Restated Expenses | Recommended | Alternative 1 | Alternative 2 |
|---|---|---|---|---|---|
| Assumed Inflation | 3.00% | 3.00% | 3.00% | 2.75% | 2.75% |
| Portfolio Real Rate of Return | 5.33% | 5.33% | 5.27% | 5.27% | 5.27% |
| Assumed Expenses | (0.60%) | (0.80%) | (0.80%) | (0.80%) | (0.80%) |
| Risk Adjustment | (0.48%) | (0.28%) | (0.47%) | (0.22%) | (0.47%) |
| Assumed Investment Return | 7.25% | 7.25% | 7.00% | 7.00% | 6.75% |
| | | | | | |
| Confidence Level | 56% | 53% | 55% | 53% | 55% |

# Real Returns by Asset Class

- Segal uses an average of 8 investment advisory firms retained by Segal public clients
  - Used results from Meketa for asset categories unique to OCERS
- Small decrease in real return is due to a combination of:
  - Changes in the target asset allocation (-0.08%)
  - Changes in real return assumptions in survey (-0.07%)
  - Interaction of these two changes (+0.09%)

# OCERS Real Rate of Return

| Asset Class | Target Allocation | Real Return | Weighted Return |
|---|---|---|---|
| Global Equity | 35.0% | 6.38% | 2.23% |
| Core Bonds | 13.0% | 1.03% | 0.13% |
| High Yield Bonds | 4.0% | 3.52% | 0.14% |
| Bank Loan | 2.0% | 2.86% | 0.06% |
| TIPS | 4.0% | 0.96% | 0.04% |
| Emerging Market Debt | 4.0% | 3.78% | 0.15% |
| Real Estate | 10.0% | 4.33% | 0.43% |
| Core Infrastructure | 2.0% | 5.48% | 0.11% |
| Natural Resources | 10.0% | 7.86% | 0.79% |
| Risk Mitigation | 5.0% | 4.66% | 0.23% |
| Mezzanine/Distressed Debts | 3.0% | 6.53% | 0.20% |
| Private Equity | 8.0% | 9.48% | 0.76% |
| Total | 100.0% | | 5.27% |

# Survey of Investment Consultants

**Arithmetic Real Rate of Return**

| | Target Allocation | Average | Meketa | Other 7 Investment Consultants | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Global Equity | 35.00% | 6.38% | 7.11% | | | | | 6.70% | 6.30% | 5.40% |
| Investment Grade Bonds | 13.00% | 1.03% | 0.98% | 1.40% | 0.75% | 1.00% | 0.92% | 0.80% | 1.40% | 1.00% |
| High Yield Bonds | 4.00% | 3.52% | 4.18% | | 1.75% | 3.52% | 5.61% | 2.95% | 3.10% | 3.50% |
| Bank Loans | 2.00% | 2.86% | 3.40% | | | 2.18% | | | 3.00% | |
| TIPS | 4.00% | 0.96% | 1.18% | | 0.90% | | | 0.85% | 0.60% | 1.25% |
| Emerging Market Bonds[1] | 4.00% | 3.78% | 3.99% | 4.37% | | 4.01% | 3.75% | 2.60% | 4.50% | 3.25% |
| Real Estate | 10.00% | 4.33% | 5.92% | | 3.25% | 5.48% | 4.25% | 4.65% | 3.00% | 3.75% |
| **Use Meketa's Return:** | | | | | | | | | | |
| Core Infrastructure | 2.00% | 5.48% | 5.48% | | | | | | | |
| Natural Resources[2] | 10.00% | 7.86% | 7.86% | | | | | | | |
| Risk Mitigation[3] | 5.00% | 4.66% | 4.66% | | | | | | | |
| Mezzanine/Distressed Debts | 3.00% | 6.53% | 6.53% | | | | | | | |
| Private Equity | 8.00% | 9.48% | 9.48% | | | | | | | |
| **Total With Asset Allocation for OCERS** | **100.00%** | **5.27%** | **5.73%** | | | | | | | |
| Anticipated Inflation | | | 2.60% | 1.47% | 2.25% | 2.10% | 3.25% | 2.25% | 2.10% | 2.50% |
| Time Horizon (Years) | | | 20 | 10 | 10 | 10 | 30 | 1 | 10 | 10 or more |

[1] Emerging Market Bonds is a combination of Emerging Market Bonds (major) and Emerging Market Bonds (local).

[2] Natural Resources is a combination of Natural Resources (public) and Natural Resources (Private).

[3] Risk Mitigation is a combination of CTA Trend Following, System Risk Premia and Long Treasury.

# Administrative and Investment Expenses ($000s)

| Plan Year | Valuation Value of Assets[1] | Administrative Expenses | Investment Expenses | Administrative % | Investment % | Total % |
|---|---|---|---|---|---|---|
| 2009 | $7,748,380 | $10,893 | $34,819 | 0.14 | 0.45 | 0.69 |
| 2010 | 8,154,687 | 12,448 | 68,027[2] | 0.15 | 0.83 | 0.98[2] |
| 2011 | 8,672,592 | 15,479 | 39,023 | 0.18 | 0.45 | 0.63 |
| 2012 | 9,064,355 | 14,295 | 40,992 | 0.16 | 0.45 | 0.61 |
| 2013 | 9,469,208 | 14,904 | 38,759 | 0.16 | 0.41 | 0.57 |
| 2014 | 10,417,125 | 11,905 | 41,487 | 0.11 | 0.40 | 0.51 |
| 2015 | 11,449,911 | 12,521 | 54,532 | 0.11 | 0.48 | 0.59 |
| 2016 | 12,228,009 | 16,870 | 80,810[3] | 0.14 | 0.66 | 0.80[3] |
| Last Experience Study Five-Year Average (2009-2013) | | | | 0.16 | 0.52 | 0.68 |
| Current Experience Study Five-Year Average (2012-2016) | | | | 0.14 | 0.48 | 0.62 |

[1] As of the beginning of the plan year.
[2] Included some one-time expenses.
[3] **We understand that this increase reflects a change in how expenses are reported.**

- Based on this experience, we have increased the future total expense component from 0.60% to 0.80%.
  - For comparison purposes, we include 2014 analysis with restated expenses

# Risk Adjustment Model and Confidence Level

- Compares OCERS' risk position over time
- Confidence level is a relative, not absolute measure
  - Can be reevaluated and reset for future comparisons
- Confidence level is based on standard deviation
  - Measure of volatility based on portfolio assumptions
- Results should be evaluated for reasonableness

# Risk Adjustment Model and Confidence Level

- Most useful for comparing risk position over time
- Confidence level is based on standard deviation
  - Likelihood that actual average 15-year return will exceed investment return assumption

| Year Ending December 31 | Investment Return Assumption | Risk Adjustment | Confidence Level |
|---|---|---|---|
| 2004-2007 | 7.75% | 0.39% | 56% |
| 2008-2010 | 7.75% | 0.80% | 61% |
| 2011 | 7.75% | -0.23% | <50% |
| 2012-2013 | 7.25% | 0.34% | 55% |
| 2014-2016 | 7.25% | 0.48% | 56% |
| 2014-2016 (Restated) | 7.25% | 0.28% | 53% |
| 2017 (Recommended) | 7.00% | 0.47% | 55% |
| 2017 (Alternative 1) | 7.00% | 0.22% | 53% |
| 2017 (Alternative 2) | 6.75% | 0.47% | 55% |

# OCERS Earnings Assumption

## Components of Investment Return Assumption

| | Current from 2014 Study | Current, Restated Expenses | Recommended | Alternative 1 | Alternative 2 |
|---|---|---|---|---|---|
| Assumed Inflation | 3.00% | 3.00% | 3.00% | 2.75% | 2.75% |
| Portfolio Real Rate of Return | 5.33% | 5.33% | 5.27% | 5.27% | 5.27% |
| Assumed Expenses | (0.60%) | (0.80%) | (0.80%) | (0.80%) | (0.80%) |
| Risk Adjustment | (0.48%) | (0.28%) | (0.47%) | (0.22%) | (0.47%) |
| Assumed Investment Return | 7.25% | 7.25% | 7.00% | 7.00% | 6.75% |
| | | | | | |
| Confidence Level | 56% | 53% | 55% | 53% | 55% |

# Investment Earnings Assumption - 2017

- Recommend: 7.00% with 3.00% inflation
  - Gives confidence level of 55%
  - Inflation maintained at 3.00%
  - Portfolio real return decreased slightly from 5.33% to 5.27%
  - Reported expenses increased from 0.60% to 0.80%
- Alternative 1: 7.00% return with 2.75% inflation
  - Confidence level (53%) consistent with 7.25% in 2014 with restated expenses
- Alternative 2: 6.75% return with 2.75% inflation
  - Confidence level (55%) slightly lower than for 7.25% in 2016 before restated expenses (56%)
- Segal would find any of these sets of assumptions to be reasonable

# Investment Earnings Assumption - 2017

- Comparison with other systems
  - National median is 7.50% but continues to trend down nationwide
  - Most common for California county employees retirement systems
    - Nine systems have adopted 7.25%
  - Five California county employees retirement system have adopted 7.00% (Contra Costa, Fresno, Mendocino, Sacramento and Santa Barbara)
    - San Mateo is at 6.75% (with 2.50% inflation)
    - San Diego City system is at 7.00%
    - Both San Jose City systems are at 6.875%
  - CalPERS approved reduction from 7.50% to 7.00% over three years
  - CalSTRS approved reduction from 7.50% to 7.00% over two years

# Anticipated Impact on Valuation Results

- Modeled as of December 31, 2016 for illustration

| | Recommended (7.00% Return & 3.00% Inflation) | Alternative 1 (7.00% Return & 2.75% Inflation) | Alternative 2 (6.75% Return & 2.75% Inflation) |
|---|---|---|---|
| Impact on Average Employer Contributions | | | |
| Change due to demographic assumptions | 3.94% | 3.94% | 3.94% |
| Change due to economic assumptions | 4.00% | 0.70% | 4.08% |
| Total change in employer rate | 7.94% | 4.64% | 8.02% |
| Total estimated change in annual dollar amount ($000s) | $140,411 | $80,539 | $140,077 |
| Impact on Average Member Contributions | | | |
| Change due to demographic assumptions | 0.57% | 0.57% | 0.57% |
| Change due to economic assumptions | 1.04% | 0.20% | 1.02% |
| Total change in member rate | 1.61% | 0.77% | 1.59% |
| Total estimated change in annual dollar amount ($000s) | $28,559 | $13,232 | $27,567 |
| Impact on UAAL and Funded Percentage | | | |
| Change in UAAL | $1,404 million | $763 million | $1,385 million |
| Change in funded percentage | From 73.1% to 67.7% | From 73.1% to 70.1% | From 73.1% to 67.9% |

# Always remember

$$C + I = B + E$$

**Contributions + Investment Income**

**equals**

**Benefit Payments + Expenses**

- Actuarial valuation determines the current or “measured” cost, not the ultimate cost
- Assumptions and funding methods affect only the timing of costs

Segal Consulting

# Orange County Employees Retirement System

## ACTUARIAL EXPERIENCE STUDY

Analysis of Actuarial Experience
During the Period
January 1, 2014 through December 31, 2016

Segal Consulting

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T 415.263.8200 www.segalco.com

August 14, 2017

Board of Retirement
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701

**Re: Review of Actuarial Assumptions for the December 31, 2017 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience for the Orange County Employees Retirement System. This study utilizes the census data for the period January 1, 2014 to December 31, 2016 and provides the proposed actuarial assumptions, both economic and demographic, to be used in the December 31, 2017 valuation.

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.

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

Sincerely,

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

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# Table of Contents

**Actuarial Experience Study**
*Analysis of Actuarial Experience*
*During the Period January 1, 2014 through December 31, 2016*

# I. Introduction, Summary, and Recommendations

To project the cost and liabilities of the pension plan, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are modified, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions means that year's experience is treated as temporary and that, over the long run, experience will return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than recognizing gains or losses as they occur.

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying the promised benefit amounts to participants already retired and to those near retirement. The actuarial assumptions used do not determine the "actual cost" of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the economic and demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the three-year experience period from January 1, 2014 through December 31, 2016. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27 "Selection of Economic Assumptions for Measuring Pension Obligations" and ASOP No. 35, "Selection of Demographic and Other Non-Economic Assumptions for Measuring Pension Obligations." These Standards of Practice put forth guidelines for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the study's results and expected future experience, we are recommending various changes in the current actuarial assumptions.

We are recommending changes in the assumptions for investment return, salary increases, retirement from active employment, retirement age for inactive vested members, reciprocity, pre-retirement mortality, post-retirement healthy and disabled life mortality, termination (refunds and deferred vested retirements), disability (non-service connected and service connected) and additional cashouts.

Our recommendations for the major actuarial assumption categories are as follows, along with reasonable alternative economic assumptions also developed in this report.

| Pg # | Actuarial Assumption Categories | Recommendation |
|---|---|---|
| 6 | Inflation: Future increases in the Consumer Price Index (CPI), which drives investment returns and active member salary increases, as well as cost-of-living adjustments (COLAs) for retirees. | Maintain the assumed rate of price inflation at 3.00% per annum as discussed in Section III (A).<br><br>Alternative: Reduce price inflation to 2.75% per annum. |
| 10 | Investment Return: The estimated average future net rate of return on current and future assets of the System as of the valuation date. This rate is used to discount liabilities. | Reduce the current investment return assumption from 7.25% per annum to 7.00% per annum as discussed in Section III (B).<br><br>Alternative 1: 7.00% investment return with 2.75% inflation.<br><br>Alternative 2: 6.75% investment return with 2.75% inflation. |
| 17 | Individual Salary Increases: Increases in the salary of a member between the date of the valuation to the date of separation from active service. This assumption has three components:<br>• Inflationary salary increases<br>• Real "across the board" salary increases<br>• Merit and promotional increases | Maintain the current inflationary salary increase assumption at 3.00% and maintain the current real "across the board" salary increase assumption at 0.50%. This means that the combined inflationary and real "across the board" salary increases will remain unchanged at 3.50%.<br><br>Alternative: 2.75% inflation and 3.25% combined inflationary and real "across the board" salary increases.<br><br>We recommend adjusting the merit and promotional rates of salary increase as developed in Section III (C) to reflect past experience. The recommended assumptions anticipate slightly higher salary increases for General and slightly lower salary increases for Safety. |
| 24 | Retirement Rates: The probability of retirement at each age at which participants are eligible to retire.<br><br>Other Retirement Related Assumptions including:<br>• Percent married and spousal age differences for members not yet retired<br>• Retirement age for inactive vested members<br>• Future reciprocal members and reciprocal salary increases | We recommend adjusting the retirement rates to those developed in Section IV (A).<br><br>For active and inactive vested members, increase the percent married at retirement assumption for females from 50% to 55% and maintain the assumption at 75% for males. For inactive vested members, increase the assumed retirement age from 58 to 59 for General members and maintain the assumed retirement age at 53 for Safety members.<br><br>Reduce the current proportion of future terminated members expected to be covered by a reciprocal system from 20% to 15% for General members and from 30% to 25% for Safety members. In addition, increase the current reciprocal salary increase assumption from 4.25% to 4.50% for General members and maintain the current reciprocal salary increase assumption at 5.00% for Safety members. |

| Pg # | Actuarial Assumption Categories | Recommendation |
|---|---|---|
| 39<br><br><br><br><br><br>46 | Mortality Rates: The probability of dying at each age. Mortality rates are used to project life expectancies. | For members who retire from service, we recommend adjusting the rates as developed in Section IV (B) for General and Safety members and all beneficiaries to reflect a generational approach for anticipating future mortality improvement.<br>The disabled member mortality rates for General and Safety members have also been adjusted as developed in Section IV (C).<br>The recommended pre-retirement mortality assumptions for General and Safety members have been adjusted as developed in Section IV (B). In addition, we recommend maintaining the assumption that all General pre-retirement deaths and 90% of Safety pre-retirement deaths are assumed to be non-service connected deaths. |
| 49 | Termination Rates: The probability of leaving employment at each age and receiving either a refund of member contributions or a deferred vested retirement benefit. | We recommend adjusting the termination rates to those developed in Section IV (D) to reflect a slightly lower incidence of termination for General All Other (non-OCTA) members, General OCTA members and Safety members. In addition, a lower proportion of members is expected to elect a withdrawal of member contributions with a higher proportion electing instead to receive a deferred vested benefit under the recommended assumptions. |
| 55 | Disability Incidence Rates: The probability of becoming disabled at each age. | We recommend adjusting the disability rates to those developed in Section IV (E) to reflect slightly higher incidence of disability for General All Other and Safety members and slightly lower incidence of disability for General OCTA members. |
| 59 | Additional Cashouts: Additional pay elements that are expected to be received during the member's final average earnings period. | We recommend adjusting the additional cashout assumptions to those developed in Section IV (F) to reflect recent years' experience. |

We have estimated the impact of the recommended and alternative assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

| Cost Impact of Recommended Assumptions | | |
|---|---|---|
| **Change in Costs** | **Contribution Rate** | **Estimated Annual Dollar Amount in Thousands*** |
| Total Normal Cost | 3.68% | $65,260 |
| Member Normal Cost | 1.61% | $28,559 |
| Employer Normal Cost | 2.07% | $36,701 |
| Employer UAAL Payments | 5.87% | $103,710 |
| Total for Employer | 7.94% | $140,411 |

* *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

| Cost Impact of Alternative 1 Assumptions (7.00% Investment Return Assumption & 2.75% Inflation) | | |
|---|---|---|
| **Change in Costs** | **Contribution Rate** | **Estimated Annual Dollar Amount in Thousands*** |
| Total Normal Cost | 1.88% | $32,321 |
| Member Normal Cost | 0.77% | $13,232 |
| Employer Normal Cost | 1.11% | $19,089 |
| Employer UAAL Payments | 3.53% | $61,450 |
| Total for Employer | 4.64% | $80,539 |

* *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

| Cost Impact of Alternative 2 Assumptions (6.75% Investment Return Assumption & 2.75% Inflation) | | |
|---|---|---|
| **Change in Costs** | **Contribution Rate** | **Estimated Annual Dollar Amount in Thousands*** |
| Total Normal Cost | 3.77% | $65,566 |
| Member Normal Cost | 1.59% | $27,567 |
| Employer Normal Cost | 2.18% | $37,999 |
| Employer UAAL Payments | 5.84% | $102,078 |
| Total for Employer | 8.02% | $140,077 |

* *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

The breakdown of the contribution impacts due only to the recommended demographic assumption changes (as recommended in Section IV of this report) and the contribution rate impacts (after implementing the demographic assumption changes) due to the recommended and alternative economic assumption changes (as recommended in Section III of this report), as well as the changes in funded status, are summarized in the following table.

| Cost Impact | | | |
|---|---|---|---|
| | **Recommended (7.00% Return & 3.00% Inflation)** | **Alternative 1 (7.00% Return & 2.75% Inflation)** | **Alternative 2 (6.75% Return & 2.75% Inflation)** |
| **Impact on Employer** | | | |
| Change due to demographic assumptions | 3.94% | 3.94% | 3.94% |
| Change due to economic assumptions | 4.00% | 0.70% | 4.08% |
| Total change in employer rate | 7.94% | 4.64% | 8.02% |
| Total estimated change in annual dollar amount ($000s) | $140,411 | $80,539 | $140,077 |
| **Impact on Member** | | | |
| Change due to demographic assumptions | 0.57% | 0.57% | 0.57% |
| Change due to economic assumptions | 1.04% | 0.20% | 1.02% |
| Total change in member rate | 1.61% | 0.77% | 1.59% |
| Total estimated change in annual dollar amount ($000s) | $28,559 | $13,232 | $27,567 |
| **Impact on UAAL and Funded Percentage** | | | |
| Change in UAAL | $1,404 million | $763 million | $1,385 million |
| Change in funded percentage | From 73.1% to 67.7% | From 73.1% to 70.1% | From 73.1% to 67.9% |

Section II provides some background on the basic principles and methodology used for the experience study and for the review of the economic and demographic actuarial assumptions. A detailed discussion of each assumption and reasons for the proposed changes are found in Section III for the economic assumptions and Section IV for the demographic assumptions. The cost impact of the proposed changes is detailed in Section V.

# II. Background and Methodology

In this report, we analyzed both economic and demographic ("non-economic") assumptions. The primary economic assumptions reviewed are inflation, investment return, and salary increases. Demographic assumptions include the probabilities of certain events occurring in the population of members, referred to as "decrements," e.g., termination from service, disability retirement, service retirement, and death before and after retirement. In addition to decrements, other demographic assumptions reviewed in this study include the percentage of members with an eligible spouse or domestic partner, spousal age difference, percentage of members assumed to go on to work for a reciprocal system, reciprocal salary increases and additional cashouts.

## Economic Assumptions

Economic assumptions consist of:

- **Inflation:** Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members.

- **Investment Return:** Expected long-term rate of return on the System's investments after expenses. This assumption has a significant impact on contribution rates.

- **Salary Increases:** In addition to inflationary increases, it is assumed that salaries will also grow by "across the board" real pay increases in excess of price inflation. It is also assumed that employees will receive raises above these average increases as they advance in their careers. These are commonly referred to as merit and promotional increases. Payments to amortize any Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase each year by the price inflation rate plus any "across the board" real pay increases that are assumed.

The setting of these economic assumptions is described in Section III.

## Demographic Assumptions

In order to determine the probability of an event occurring, we examine the "decrements" and "exposures" of that event. For example, taking termination from service, we compare the number of employees who actually terminate in a certain age and/or service category (i.e., the number of "decrements") with those who could have terminated (i.e., the number of "exposures"). For example, if there were 500 active employees in the 20-24 age group at the beginning of the year and 50 of them terminate during the year, we would say the probability of termination in that age group is 50 ÷ 500 or 10%.

The reliability of the resulting probability is highly dependent on both the number of decrements and the number of exposures. For example, if there are only a few people in a high age category at the beginning of the year (number of exposures), we would not lend as much credibility to the probability of termination developed for that age category, especially if it is out of line with the pattern shown for the other age groups. Similarly, if we are considering the death decrement, there may be a large number of exposures in, say, the age 20-24 category, but very few decrements (actual deaths); therefore, we would not be able to rely heavily on the probability developed for that category.

One reason we use several years of experience for such a study is to have more exposures and decrements, and therefore more statistical reliability. Another reason for using several years of data is to smooth out fluctuations that may occur from one year to the next. However, we also calculate the rates on a year-to-year basis to check for any trend that may be developing in the later years.

# III. Economic Assumptions

## A. Inflation

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be times when “riskless” investments return more or less than inflation, but over the long term, investment market forces will generally require an issuer of fixed income securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so our analysis included a review of historical information. Following is an analysis of 15 and 30 year moving averages of historical inflation rates:

**HISTORICAL CONSUMER PRICE INDEX – 1930 TO 2016[1]**
**(U.S. City Average - All Urban Consumers)**

| | 25th Percentile | Median | 75th Percentile |
|---|---|---|---|
| 15-year moving averages | 2.5% | 3.4% | 4.5% |
| 30-year moving averages | 3.1% | 3.9% | 4.8% |

The average inflation rates have continued to decline gradually over the last several years due to the relatively low inflationary period over the past two decades. Also, the later of the 15-year averages during the period are lower as they do not include the high inflation years of the mid-1970s and early 1980s.

Based on information found in the Public Plans Data website, which is produced in partnership with the National Association of State Retirement Administrators (NASRA), the median inflation assumption used by 142 large public retirement funds in their 2015 fiscal year valuations was 3.00%. In California, San Mateo County uses an inflation assumption of 2.50%, CalPERS, CalSTRS, Contra Costa County, Los Angeles County, and two other 1937 Act CERL systems use an inflation assumption of 2.75%, San Joaquin County uses an inflation assumption of 2.90% while OCERS and eleven other 1937 Act CERL systems use an inflation assumption of 3.00%.

OCERS’ investment consultant, Meketa, anticipates an annual inflation rate of 2.60%, while the average inflation assumption provided by Meketa and seven other investment advisory firms retained by Segal’s California public sector clients was 2.32%. Note that, in general, investment consultants use a time horizon[2] for this assumption that is shorter than the time horizon of the actuarial valuation.

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1 Source: Bureau of Labor Statistics – Based on CPI for All items in U.S. city average, all urban consumers, not seasonally adjusted (Series Id: CUUR0000SA0)

2 After removing an outlier, the time horizon used by the remaining seven investment consultants included in our review range from 10 years to 30 years. Most of those investment consultants use 10 years and Meketa uses 20 years.

To find a forecast of inflation based on a longer time horizon, we referred to the 2017 report on the financial status of the Social Security program.[3] The projected average increase in the Consumer Price Index (CPI) over the next 75 years under the intermediate cost assumptions used in that report was 2.60%. (Besides projecting the results under the intermediate cost assumptions using an inflation of 2.60%, alternative projections were also made using a lower and a higher inflation assumption of 2.00% and 3.20%, respectively.)

We also compared the yields on the thirty-year inflation indexed U.S. Treasury bonds to comparable traditional U.S. Treasury bonds.[4] As of June 2017, the difference in yields is about 1.87%, which provides a measure of market expectations of inflation.

**Based on all of the above information, we recommend that the current 3.00% annual inflation assumption be maintained for the December 31, 2017 actuarial valuation.**

The setting of the inflation assumption using the information outlined above is a somewhat subjective process, and Segal does not apply a specific weight to each of the metrics in determining our recommended inflation assumption. Based on a consideration of all these metrics, we have recently been recommending the same 3.00% inflation assumption in our experience studies for our California based public retirement system clients.

However, we note that the metrics presented above could also lead to a lower inflation assumption, and that in particular Segal would find 2.75% to be a reasonable inflation assumption. As discussed on the previous page of this report, several large California public retirement systems have recently adopted a 2.75% inflation assumption in their valuations, including one system (Contra Costa County ERA) that is a Segal client.

## Retiree Cost of Living Increases

In the last valuation, as of December 31, 2016, consistent with the 3.00% annual inflation assumption used by the Board for that valuation, the Board used a 3.00% cost-of-living adjustment for all retirees.

**Consistent with our recommended inflation assumptions, we also recommend maintaining the current assumptions to value the post-retirement cost-of-living adjustments (COLA).**

In developing the COLA assumption, we also considered the results of a stochastic approach that would attempt to account for the possible impact of low inflation that could occur before COLA banks are able to be established for the member. Although the results of this type of analysis might justify the use of a lower COLA assumption, we are not recommending that at this time. The reasons for this conclusion include the following:

- The results of the stochastic modeling are significantly dependent on assuming that lower levels of inflation will persist in the early years of the projections. If this is not assumed, then the stochastic modeling will produce results similar to our proposed COLA assumptions.

[3] Source: Social Security Administration – The 2017 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds

[4] Source: Board of Governors of the Federal Reserve System

- Using a lower long-term COLA assumption based on a stochastic analysis would mean that an actuarial loss would occur even when the inflation assumption of 3.00% is met in a year. We question the reasonableness of this result.

We do not see the stochastic possibility of COLAs averaging less than those predicted by the assumed rate of inflation as a reliable source of cost savings that should be anticipated in our COLA assumptions. Therefore, we continue to recommend setting the COLA assumptions based on the long-term annual inflation assumption, as we have in prior years.

## B. Investment Return

The investment return assumption is comprised of two primary components, inflation and real rate of investment return, with adjustments for expenses and risk.

### Real Rate of Investment Return

This component represents the portfolio's incremental investment market returns over inflation. Theory has it that as an investor takes a greater investment risk, the return on the investment is expected to also be greater, at least in the long run. This additional return is expected to vary by asset class and empirical data supports that expectation. For that reason, the real rate of return assumptions are developed by asset class. Therefore, the real rate of return assumption for a retirement association's portfolio will vary with the Board's asset allocation among asset classes.

The following is the System's current target asset allocation and the assumed real rate of return assumptions by asset class. The first column of real rate of return assumptions are determined by reducing Meketa's total or "nominal" 2017 return assumptions by their assumed 2.60% inflation rate. The second column of returns (except for Core Infrastructure, Natural Resources, Risk Mitigation, Mezzanine/Distressed Debts and Private Equity) represents the average of a sample of real rate of return assumptions. The sample includes the expected annual real rate of return provided to us by Meketa and seven other investment advisory firms retained by Segal's public sector clients. We believe these averages are a reasonable consensus forecast of long-term future market returns in excess of inflation.[5]

[5] Note that, just as for the inflation assumption, in general the time horizon used by the investment consultants in determining the real rate of return assumption is shorter than the time horizon encompassed by the actuarial valuation.

## OCERS' TARGET ASSET ALLOCATION AND ASSUMED ARITHMETIC REAL RATE OF RETURN ASSUMPTIONS BY ASSET CLASS AND FOR THE PORTFOLIO

| Asset Class | Percentage of Portfolio | Meketa' Assumed Real Rate of Return[6] | Average Assumed Real Rate of Return from a Sample of Consultants to Segal's California Public Sector Clients[7] |
|---|---|---|---|
| Global Equity | 35.0% | 7.11% | 6.38% |
| Core Bonds | 13.0% | 0.98% | 1.03% |
| High Yield Bonds | 4.0% | 4.18% | 3.52% |
| Bank Loan | 2.0% | 3.40% | 2.86% |
| TIPS | 4.0% | 1.18% | 0.96% |
| Emerging Market Debt | 4.0% | 3.99% | 3.78% |
| Real Estate | 10.0% | 5.92% | 4.33% |
| Core Infrastructure | 2.0% | 5.48% | 5.48%[8] |
| Natural Resources | 10.0% | 7.86% | 7.86%[8] |
| Risk Mitigation | 5.0% | 4.66% | 4.66%[8] |
| Mezzanine/Distressed Debts | 3.0% | 6.53% | 6.53%[8] |
| Private Equity | 8.0% | 9.48% | 9.48%[8] |
| **Total** | **100.0%** | **5.73%** | **5.27%** |

The above are representative of "indexed" returns and do not include any additional returns ("alpha") from active management. This is consistent with the Actuarial Standard of Practice No. 27, Section 3.6.3.d, which states:

> "Investment Manager Performance - Anticipating superior (or inferior) investment manager performance may be unduly optimistic (or pessimistic). The actuary should not assume that superior or inferior returns will be achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy unless the actuary believes, based on relevant supporting data, that such superior or inferior returns represent a reasonable expectation over the measurement period."

The following are some observations about the returns provided above:

1. The investment consultants to our California public sector clients have each provided us with their expected real rates of return for each asset class, over various future periods of time. However, in general, the returns available from investment consultants are projected over time periods shorter than the durations of a retirement plan's liabilities.

2. Using a sample average of expected real rate of returns allows the System's investment return assumption to reflect a broader range of capital market information and should help reduce year to year volatility in the investment return assumption.

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6 Derived by reducing Meketa's nominal rate of return assumptions by their assumed 2.60% inflation rate.

7 These are based on the projected arithmetic returns provided by Meketa and seven other investment advisory firms serving the county retirement system of Orange and 16 other city and county retirement systems in California. These return assumptions are gross of any applicable investment expenses.

8 For these asset classes, Meketa's assumption is applied in lieu of the average because there is a larger disparity in returns for these asset classes among the firms surveyed and using Meketa's assumption should more closely reflect the underlying investments made specifically for OCERS.

3. Therefore, we recommend that the 5.27% portfolio real rate of return be used to determine the System's investment return assumption. This is 0.06% lower than the return that was used three years ago in the review to prepare the recommended investment return assumption for the December 31, 2014 valuation. The difference is due to changes in the System's target asset allocation (-0.08%), changes in the real rate of return assumptions provided to us by the investment advisory firms (-0.07%) and the interaction effect between these changes (+0.09%).

## System Expenses

For funding purposes, the real rate of return assumption for the portfolio needs to be adjusted for investment and administrative expenses expected to be paid from investment income. The following table provides the investment and administrative expenses in relation to the actuarial value of assets for the five years ending December 31, 2016.

**ADMINISTRATIVE AND INVESTMENT EXPENSES**
**AS A PERCENTAGE OF VALUATION VALUE OF ASSETS (Dollars in 000's)**

| Plan Year | Valuation Value of Assets[9] | Administrative Expenses | Investment Expenses[10] | Administrative % | Investment % | Total % |
|---|---|---|---|---|---|---|
| 2009 | $7,748,380 | $10,893 | $34,819 | 0.14 | 0.45 | 0.59 |
| 2010 | 8,154,687 | 12,448 | 68,027[11] | 0.15 | 0.83 | 0.98[11] |
| 2011 | 8,672,592 | 15,479 | 39,023 | 0.18 | 0.45 | 0.63 |
| 2012 | 9,064,355 | 14,295 | 40,992 | 0.16 | 0.45 | 0.61 |
| 2013 | 9,469,208 | 14,904 | 38,759 | 0.16 | 0.41 | 0.57 |
| 2014 | 10,417,125 | 11,905 | 41,487 | 0.11 | 0.40 | 0.51 |
| 2015 | 11,449,911 | 12,521 | 54,532 | 0.11 | 0.48 | 0.59 |
| 2016 | 12,228,009 | 16,870 | 80,810[12] | 0.14 | 0.66 | 0.80[12] |
| **Last Experience Study Five-Year Average (2009 – 2013)** | | | | 0.16 | 0.52 | 0.68 |
| **Current Experience Study Five-Year Average (2012 – 2016)** | | | | 0.14 | 0.48 | 0.62 |
| | | | | | **Recommendation** | 0.80 |

The average administrative and investment expenses percentage over this five-year period in the current experience study is 0.62% of the valuation value of assets (over the five-year period in the last experience study, that average was 0.68%). However, the total expenses percentage went up to 0.80% for plan year 2016 when the "at-source" investment managed fees started to be disclosed in the financial statements instead of being treated as a reduction in the investment

9 As of beginning of plan year.

10 Net of securities lending expenses. Because we do not assume any additional net return for this program, we effectively assume that any securities lending expenses will be offset by related income.

11 We understand that the 2010 investment expenses included some one-time expenses such as foreign tax expense that is expected to be offset by future tax reclaim.

12 Per OCERS, the increase in the investment expenses for plan year 2016 is primarily due to the reporting of the "at-source" investment management fees in the financial statement that were previously netted against the investment returns.

returns. Taking into account how the investment expenses are reported starting with the 2016 plan year, we believe that it is reasonable to increase the future expense component from 0.60% used in the last review in 2014 to 0.80%.

We understand that this increase reflects a change in how expensed are reported, and not an increase in the level of actual expenses. This means that, for comparison purposes, it may be helpful to consider a restatement of our 2014 analysis reflecting the higher 0.80% expense component. We have included those restated values in the analysis that follows.

Note related to investment expenses paid to active managers – As cited above, under Section 3.6.3.d of ASOP No. 27, the effect of an active investment management strategy should be considered “net of investment expenses…unless the actuary believes, based on relevant data, that such superior or inferior returns represent a reasonable expectation over the measurement period.” For OCERS, nearly all of the investment expenses were paid for expenses associated with active managers.

We have not performed a detailed analysis to measure how much of the investment expenses paid to active managers might have been offset by additional returns (“alpha”) earned by that active management. However, we observed based on information provided in the CAFR that the total fund return on a net of investment expense basis was lower than the policy benchmark by about 0.6% over the last five years. We will work with the System’s staff to determine whether future studies might potentially exclude the level of investment expenses for active managers that are expected to be offset by investment returns. For now, we will continue to use the current approach that any “alpha” that may be identified would be treated as an increase in the risk adjustment and corresponding confidence level. For example, 0.25% of alpha would increase the confidence level by 3% (see discussions that follow on definitions of risk adjustment and confidence level).

## Risk Adjustment

The real rate of return assumption for the portfolio is adjusted to reflect the potential risk of shortfalls in the return assumptions. The System’s asset allocation determines this portfolio risk, since risk levels are driven by the variability of returns for the various asset classes and the correlation of returns among those asset classes. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment.

The purpose of the risk adjustment (as measured by the corresponding confidence level) is to increase the likelihood of achieving the actuarial investment return assumption in the long term.[13] The 5.27% expected real rate of return developed earlier in this report was based on expected mean or average arithmetic returns. This means there is a 50% chance of the actual return in each year being at least as great as the average (assuming a symmetrical distribution of future returns). The risk adjustment is intended to increase that probability somewhat above the 50% level. This is consistent with our experience that retirement plan fiduciaries would generally prefer that returns exceed the assumed rate more often than not. Note that, based on the investment return assumptions recently adopted by systems that have been analyzed under this model, we observe a confidence level generally in the range of 50% to 60%.

[13] This type of risk adjustment is sometimes referred to as a “margin for adverse deviation.”

Three years ago, the Board adopted an investment return assumption of 7.25%. That return implied a risk adjustment of 0.48%, reflecting a confidence level of 56% that the actual average return over 15 years would not fall below the assumed return, assuming that the distribution of returns over that period follows the normal statistical distribution.[14]

In our model, the confidence level associated with a particular risk adjustment represents the likelihood that the actual average return would equal or exceed the assumed value over a 15-year period. For example, if we set our real rate of return assumption using a risk adjustment that produces a confidence level of 60%, then there would be a 60% chance (6 out of 10) that the average return over 15 years will be equal to or greater than the assumed value. The 15-year time horizon represents an approximation of the "duration" of the fund's liabilities, where the duration of a liability represents the sensitivity of that liability to interest rate variations.

If we use the same 56% confidence level from our last study to set this year's risk adjustment, based on the current long-term portfolio standard deviation of 12.95% provided by Meketa, the corresponding risk adjustment would be 0.51%. Together with the other investment return components, this would result in an investment return assumption of 6.96%, which is lower than the current assumption of 7.25%.

Based on the general practice of using one-quarter percentage point increments for economic assumptions, we evaluated the effect on the confidence level of other alternative investment return assumptions. In particular, a net investment return assumption of 7.00%, together with the other investment return components, would produce a risk adjustment of 0.47%, which corresponds to a confidence level of 55%. This is slightly lower than the confidence level of 56% used in OCERS' last study for the December 31, 2014 valuation. This analysis supports reducing the current assumption from 7.25% to 7.00%. Note that this comparison does not reflect any restatement of the 2014 analysis for higher reported investment expenses.

The table below shows OCERS' investment return assumptions and for the years when this analysis was performed, the risk adjustments and corresponding confidence levels compared to the values for prior studies. For comparison purposes we have included values for 2014-2016 both as originally developed and after restatement for higher reported investment expenses. For any given investment return assumption, higher expenses will mean a lower risk adjustment and so a lower confidence level. As shown below, with an expense component of 0.80% instead of 0.60% the 2014-2016 investment return of 7.25% would have had a confidence level of 53% rather than 56%.

[14] Based on an annual portfolio return standard deviation of 12.30% provided by the prior investment consultant in 2014. Strictly speaking, future compounded long-term investment returns will tend to follow a log-normal distribution. However, we believe the Normal distribution assumption is reasonable for purposes of setting this type of risk adjustment.

## HISTORICAL INVESTMENT RETURN ASSUMPTIONS, RISK ADJUSTMENTS AND CONFIDENCE LEVELS BASED ON ASSUMPTIONS ADOPTED BY THE BOARD

| Year Ending December 31 | Investment Return | Risk Adjustment | Corresponding Confidence Level |
|---|---|---|---|
| 2004 - 2007 | 7.75% | 0.39% | 56% |
| 2008 - 2010 | 7.75% | 0.80% | 61% |
| 2011 | 7.75% | -0.23% | <50% |
| 2012 - 2013 | 7.25% | 0.34% | 55% |
| 2014 - 2016 | 7.25% | 0.48% | 56% |
| 2014 - 2016 (restated) | 7.25% | 0.28% | 53% |
| 2017 (Recommended) | 7.00% | 0.47% | 55% |

As we have discussed in prior experience studies, the risk adjustment model and associated confidence level is most useful as a means for comparing how the System has positioned itself relative to risk over periods of time.[15] The use of a 55% confidence level should be considered in context with other factors, including:

- As noted above, the confidence level is more of a relative measure than an absolute measure, and so can be reevaluated and reset for future comparisons.
- The confidence level is based on the standard deviation of the portfolio that is determined and provided to us by Meketa. The standard deviation is a statistical measure of the future volatility of the portfolio and so is itself based on assumptions about future portfolio volatility and can be considered somewhat of a "soft" number.
- A confidence level of 55% is within the range of about 50% to 60% that corresponds to the risk adjustments used by most of Segal's other California public retirement system clients. Most public retirement systems that have recently reviewed their investment return assumptions have seen decreases in their confidence level even though they adopted more conservative investment return assumptions for their valuations.
- As with any model, the results of the risk adjustment model should be evaluated for reasonableness and consistency. This is discussed in the later section on "Comparison with Other Public Retirement Systems".

Taking into account the factors above, our recommendation is to reduce the net investment return assumption from 7.25% to 7.00%. As noted above, this return implies a 0.47% risk adjustment, reflecting a confidence level of 55% that the actual average return over 15 years would not fall below the assumed return.

15 In particular, it would not be appropriate to use this type of risk adjustment as a measure of determining an investment return rate that is "risk-free."

## Recommended Investment Return Assumption

The following table summarizes the components of the investment return assumption developed in the previous discussion. For comparison purposes, we have also included similar values from the last study, both before and after restatement for higher reported investment expenses.

### CALCULATION OF NET INVESTMENT RETURN ASSUMPTION

| | Recommended Value | Restated Expenses | Adopted Value |
|---|---|---|---|
| **Assumption Component** | **December 31, 2017** | **December 31, 2014** | **December 31, 2014** |
| Inflation | 3.00% | 3.00% | 3.00% |
| Plus Average Real Rate of Return | 5.27% | 5.33% | 5.33% |
| Minus Expense Adjustment | (0.80%) | (0.80%) | (0.60%) |
| Minus Risk Adjustment | (0.47%) | (0.28%) | (0.48%) |
| **Total** | **7.00%** | **7.25%** | **7.25%** |
| **Confidence Level** | **55%** | **53%** | **56%** |

**Based on this analysis, our recommended investment return assumption is a decrease from 7.25% to 7.00% per annum to maintain a confidence level associated with this assumption at a level consistent with values developed in prior reviews of this assumption.**

## Comparing with Other Public Retirement Systems

One final test of the recommended investment return assumption is to compare it against those used by other public retirement systems, both in California and nationwide.

We note that a 7.00% investment return assumption is becoming more common among California public sector retirement systems. In particular, five County employees retirement systems (Contra Costa, Fresno, Mendocino, Sacramento and Santa Barbara) use a 7.00% earnings assumption. Furthermore, the CalPERS Board has approved a reduction in the earnings assumption from 7.50% to 7.00% over the next three years. In addition, CalSTRS recently adopted a 7.25% earnings assumption for the 2016 valuation (down from 7.50%) and a 7.00% earnings assumption for the 2017 valuation.

The following table compares OCERS' recommended net investment return assumption against those of the nationwide public retirement systems that participated in the National Association of State Retirement Administrators (NASRA) 2016 Public Fund Survey for 142 large public retirement funds in their 2015 fiscal year valuations:

| | | NASRA 2016 Public Fund Survey[16] | | |
|---|---|---|---|---|
| **Assumption** | **OCERS** | **Low** | **Median** | **High** |
| Net Investment Return | 7.00% | 4.29% | 7.50% | 8.50% |

The detailed survey results show that more than one-half of the systems have an investment return assumption in the range of 6.75% to 7.75%, and over half of those systems have used an

[16] Public Plans Data website – Produced in partnership with the National Association of State Retirement Administrators (NASRA)

assumption of 7.50%. The survey also notes that several plans have reduced their investment return assumption during the last year. State systems outside of California tend to change their economic assumptions less frequently and so may lag behind emerging practices in this area.

In summary, we believe that both the risk adjustment model and other considerations indicate a lower earnings assumption. The recommended assumption of 7.00% provides for a risk margin within the risk adjustment model consistent with recent OCERS practice, and it is consistent with OCERS' current practice relative to other public systems.

### Alternative Economic Assumptions

As we noted above in our discussion of the inflation assumption, the metrics presented in that section could also lead to an inflation assumption lower that our recommended 3.00%, and in particular Segal would find 2.75% to be a reasonable inflation assumption. In this section we present for the Board's consideration alternative investment return assumptions based on an inflation component of 2.75%.

We note that several California public retirement systems have lowered their inflation assumptions at the same time that they lowered their investment return assumptions. Whether this results in more conservative or more aggressive assumptions depends on the change in the real return, i.e., the difference between the two assumptions. We have analyzed two sets of alternative economic assumptions in the table below.

**ALTERNATIVE INFLATION AND INVESTMENT RETURN ASSUMPTIONS**

| Assumption Component | Recommended 7.00% Investment 3.00% Inflation | Alternative 1 7.00% Investment 2.75% Inflation | Alternative 2 6.75% Investment 2.75% Inflation |
|---|---|---|---|
| Inflation | 3.00% | 2.75% | 2.75% |
| Plus Portfolio Real Rate of Return | 5.27% | 5.27% | 5.27% |
| Minus Expense Adjustment | (0.80%) | (0.80%) | (0.80%) |
| Minus Risk Adjustment | (0.47%) | (0.22%) | (0.47%) |
| **Total** | **7.00%** | **7.00%** | **6.75%** |
| **Confidence Level** | **55%** | **53%** | **55%** |

Segal would find any of these three sets of economic assumptions to be reasonable.

## C. Salary Increase

Salary increases impact plan costs in two ways: (i) by increasing members' benefits (since benefits are a function of the members' highest average pay) and future normal cost collections; and (ii) by increasing total active member payroll which in turn generates lower UAAL contribution rates. The components of the salary increase assumption are discussed below.

As an employee progresses through his or her career, increases in pay are expected to come from three sources:

1. **Inflation:** Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces will require an employer to maintain its employees' standards of living.

   **As discussed earlier in this report, we are recommending that the assumed rate of inflation be maintained at 3.00% per annum. This inflation component is used as part of the salary increase assumption.**

2. **Real "Across the Board" Pay Increases:** These increases are typically termed productivity increases since they are considered to be derived from the ability of an organization or an economy to produce goods and services in a more efficient manner. As that occurs, at least some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees "across the board". The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real "across the board" pay increases have averaged about 0.6% - 0.9% annually during the last ten to twenty years.

   We also referred to the annual report on the financial status of the Social Security program published in July 2017. In that report, real "across the board" pay increases are forecast to be 1.2% per year under the intermediate assumptions.

   The real pay increase assumption is generally considered a more "macroeconomic" assumption, that is not necessarily based on individual plan experience. We note that the actual pay increases over the past five years were less than CPI increases, as shown below. However, this recent experience may not be a credible predictor of future experience.

| Valuation Date | Actual Average Pay Increase[17] | Actual Change in CPI[18] |
|---|---|---|
| December 31, 2012 | 0.03% | 2.04% |
| December 31, 2013 | -0.83% | 1.08% |
| December 31, 2014 | 2.22% | 1.35% |
| December 31, 2015 | -1.22% | 0.91% |
| December 31, 2016 | 6.66% | 1.89% |
| **Average[19]** | **1.37%** | **1.45%** |

   **Considering these factors, we recommend maintaining the real "across the board" salary increase assumption at 0.50%. This means that the combined inflation and "across the board" salary increase assumption will remain unchanged at 3.50%.**

   Note that under the alternative 2.75% inflation assumption, the combined inflation and "across the board" salary increase assumption would decrease from 3.50% to 3.25%.

[17] Reflects the increase in average salary for members at the beginning of the year versus those at the end of the year. It does not reflect the average salary increases received by members who worked the full year.

[18] Based on the change in the Annual CPI for the Los Angeles-Riverside-Orange County area compared to the prior year.

[19] In the last experience study, the actual average increased in salary was 1.56% while the actual average change in CPI was 1.24% during the five-year period ending on December 31, 2013.

3. **Merit and Promotional Increases:** As the name implies, these increases come from an employee's career advances. This form of pay increase differs from the previous two, since it is specific to the individual. For OCERS, there are service-specific merit and promotional increases.

   The annual merit and promotional increases are determined by measuring the actual increases received by members over the experience period, net of the inflationary and real "across the board" pay increases. Increases are measured separately for General and Safety members. This is accomplished by:

   a. Measuring each continuing member's actual salary increase over each year of the experience period;

   b. Excluding any members with large increases (in the case of OCERS, we have excluded increases greater than 50%) or any decreases during any particular year;

   c. Categorizing these increases according to member demographics;

   d. Removing the wage inflation component from these increases (assumed to be equal to the increase in the members' average salary during the year);

   e. Averaging these annual increases over the three-year experience period; and

   f. Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

   To be consistent with the other economic assumptions, these merit and promotional assumptions should be used in combination with the 3.50% assumed inflation and real "across the board" increases.

   The following table shows the General members' actual average merit and promotional increases by years of service over the three-year period from January 1, 2014 through December 31, 2016 along with the actual average increases based on combining the current three-year period with the three years from the prior experience study. The current and proposed assumptions are also shown. The actual average total salary increases for the most recent three-year period were reduced by the actual average inflation plus "across the board" increase (i.e., wage inflation, estimated as the increase in average salaries) for each year over the current three-year experience period (2.4% on average).

## GENERAL
## MERIT AND PROMOTIONAL INCREASES
## (Actual vs. Proposed Assumption)

| | Rate (%) | | | |
|---|---|---|---|---|
| Years of Service | Current Assumption | Actual Average Increase (Last 3 Years) | Actual Average Increase from Current and Prior Study | Proposed Assumption |
| Less than 1 | 10.00 | 6.48 | 7.78 | 9.00 |
| 1 | 7.25 | 7.14 | 7.67 | 7.25 |
| 2 | 6.00 | 6.61 | 6.05 | 6.00 |
| 3 | 4.75 | 5.76 | 4.90 | 5.00 |
| 4 | 4.00 | 4.62 | 4.13 | 4.00 |
| 5 | 3.25 | 3.70 | 3.48 | 3.50 |
| 6 | 2.25 | 3.17 | 2.99 | 2.50 |
| 7 | 2.00 | 2.91 | 2.69 | 2.25 |
| 8 | 1.50 | 2.76 | 2.29 | 1.75 |
| 9 | 1.25 | 2.55 | 1.97 | 1.50 |
| 10 | 1.25 | 1.95 | 1.64 | 1.50 |
| 11 | 1.25 | 2.04 | 1.55 | 1.50 |
| 12 | 1.25 | 1.83 | 1.43 | 1.50 |
| 13 | 1.25 | 1.81 | 1.45 | 1.50 |
| 14 | 1.25 | 1.64 | 1.57 | 1.50 |
| 15 | 1.25 | 1.72 | 1.54 | 1.50 |
| 16 | 0.75 | 1.51 | 1.14 | 1.00 |
| 17 | 0.75 | 1.56 | 1.11 | 1.00 |
| 18 | 0.75 | 1.87 | 1.28 | 1.00 |
| 19 | 0.75 | 1.48 | 0.91 | 1.00 |
| 20 & over | 0.75 | 1.37 | 1.09 | 1.00 |

The following table provides the same information for Safety members. The actual average total salary increases for the most recent three-year period were reduced by the actual average inflation plus "across the board" increase (i.e., wage inflation, estimated as the increase in average salaries) for each year over the current three-year experience period (3.8% on average).

## SAFETY
## MERIT AND PROMOTIONAL INCREASES
## (Actual vs. Proposed Assumption)

| | Rate (%) | | | |
|---|---|---|---|---|
| Years of Service | Current Assumption | Actual Average Increase (Last 3 Years) | Actual Average Increase from Current and Prior Study | Proposed Assumption |
| Less than 1 | 14.00 | 13.91 | 13.92 | 14.00 |
| 1 | 10.00 | 6.23 | 10.66 | 10.00 |
| 2 | 8.50 | 5.67 | 7.13 | 7.75 |
| 3 | 6.75 | 4.80 | 5.18 | 6.00 |
| 4 | 5.25 | 6.61 | 6.06 | 5.50 |
| 5 | 4.50 | 4.22 | 4.86 | 4.50 |
| 6 | 3.50 | 3.93 | 4.26 | 3.75 |
| 7 | 3.25 | 3.12 | 3.53 | 3.25 |
| 8 | 2.25 | 2.68 | 2.64 | 2.50 |
| 9 | 2.25 | 2.21 | 2.41 | 2.25 |
| 10 | 1.75 | 1.61 | 2.14 | 1.75 |
| 11 | 1.75 | 1.59 | 1.70 | 1.75 |
| 12 | 1.75 | 1.24 | 1.60 | 1.75 |
| 13 | 1.75 | 1.69 | 1.68 | 1.75 |
| 14 | 1.75 | 1.41 | 1.69 | 1.75 |
| 15 | 1.75 | 1.67 | 2.26 | 1.75 |
| 16 | 1.50 | 1.53 | 1.65 | 1.50 |
| 17 | 1.50 | 1.89 | 2.07 | 1.50 |
| 18 | 1.50 | 2.23 | 2.26 | 1.50 |
| 19 | 1.50 | 2.19 | 2.00 | 1.50 |
| 20 & over | 1.50 | 1.28 | 1.78 | 1.50 |

Charts 1 and 2 provide a graphical comparison of the actual merit and promotional increases, compared to the proposed and current assumptions. The charts also show the actual merit and promotional increases based on an average of both the current and previous three-year experience periods. This is discussed above. Chart 1 shows this information for General members and Chart 2 for Safety members.

**Based on this experience, we are proposing slight increases overall in the merit and promotional salary increases for General and slight decreases overall in the merit and promotional increases for Safety members. Overall, salary increases are assumed to be higher for General members and lower for Safety members since we are not recommending a change to the price inflation assumption or the "across the board" assumption.**

## Active Member Payroll

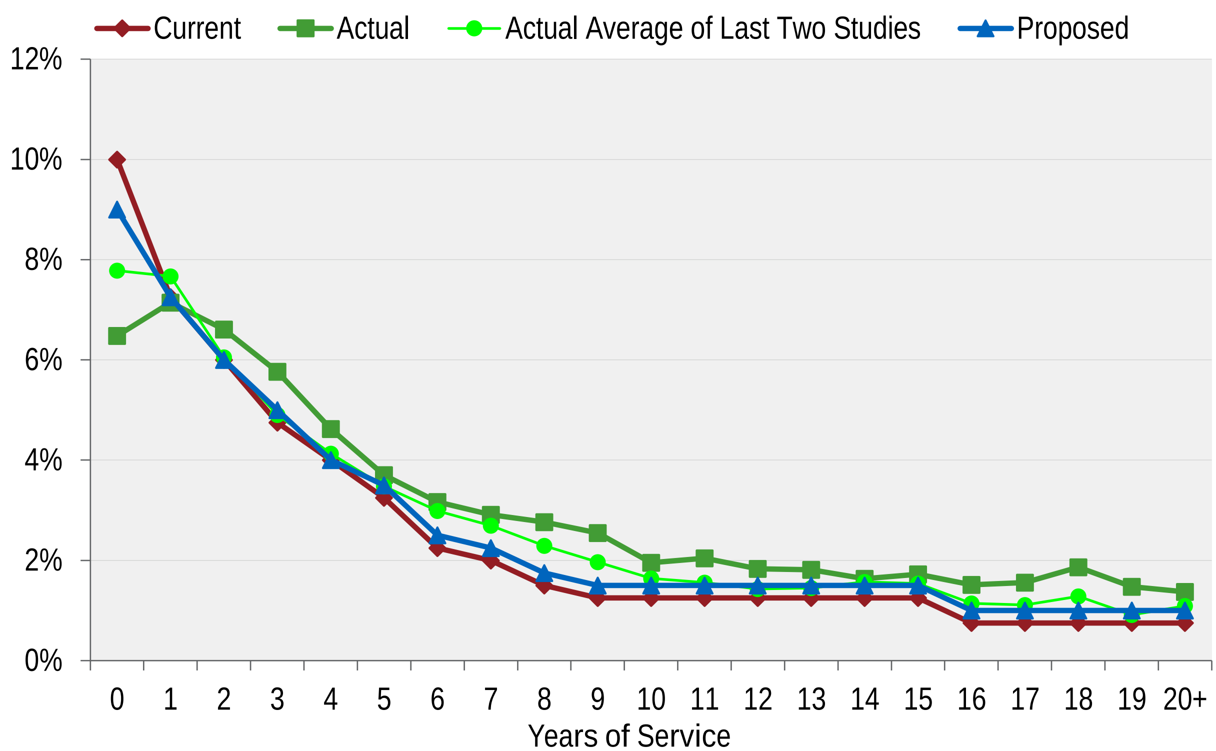
Projected active member payrolls are used to develop the UAAL contribution rate. Future values are determined as a product of the number of employees in the workforce and the average pay for all employees. The average pay for all employees increases only by inflation and real "across the board" pay increases. The merit and promotional increases are not an influence, because this average pay is not specific to an individual.

Under the Board's current practice, the UAAL contribution rate is developed by assuming that the total payroll for all active members will increase annually over the amortization periods at the same assumed rates of inflation plus real "across the board" salary increase assumptions as are used to project the members' future benefits.

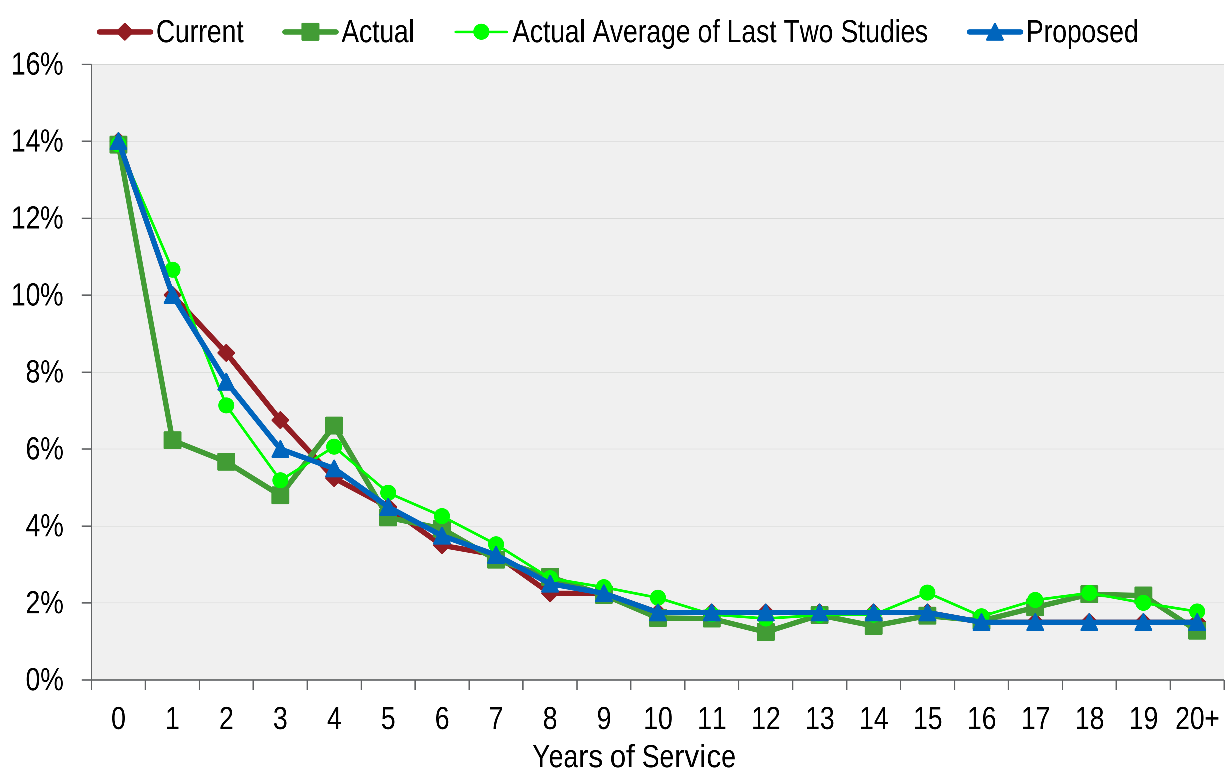
**We recommend that the active member payroll increase assumption be maintained at 3.50% annually, consistent with the combined inflation plus real "across the board" salary increase assumptions.**

Note that under the alternative 2.75% inflation assumption, the active member payroll increase assumption would decrease from 3.50% to 3.25%.

## CHART 1: MERIT AND PROMOTIONAL SALARY INCREASE RATES GENERAL MEMBERS




## CHART 2: MERIT AND PROMOTIONAL SALARY INCREASE RATES SAFETY MEMBERS



# IV. Demographic Assumptions

## A. Retirement Rates

The age at which a member retires from service (i.e., who did not retire on a disability pension) will affect both the amount and duration of the benefits that will be paid to that member as well as the period over which funding must take place. Following prior practice, we have continued to use age as a predictor as to when a member would retire from OCERS. Subsequent to our last experience study, we were asked to consider whether other factors such as service could be a better predictor in determining when a member would retire. We have reviewed the retirement experience using service and documented in the following sub-section why we would not recommend a change to use service at this time.

The System's current retirement rates for the non-CalPEPRA Plans[20] are separated into:

(1) General Enhanced

(2) General Non-Enhanced[21]

(3) General SJC (2.0% @ 57 under §31676.12)

(4) Safety Law Enforcement (3.0% @ 50 under §31664.1)

(5) Safety Law Enforcement (3.0% @ 55 under §31664.2)

(6) Safety Fire (3.0% @ 50 under §31664.1)

(7) Safety Fire (3.0% @ 55 under §31664.2)

(8) Safety Probation (3.0% @ 50 under §31664.1)

For members who are covered under the CalPEPRA Plans, the retirement rates are separated into:

(1) CalPEPRA General

(2) CalPEPRA Safety Probation

(3) CalPEPRA Safety Law Enforcement

(4) CalPEPRA Safety Fire

The tables on the following pages show the observed service retirement rates for each of the above non-CalPEPRA categories based on the actual experience over the past three years. The observed service retirement rates were determined by comparing those members who actually retired from service to those eligible to retire from service. This same methodology is followed throughout this report and was described in Section II. Also shown are the current rates assumed and the rates we propose:

[20] CalPEPRA or California Public Employees' Pension Reform Act of 2013 imposed lower benefit tiers for General and Safety members together with other changes.

[21] These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (§31676.01).

| | Rate of Retirement (%) | | | | | |
|---|---|---|---|---|---|---|
| | General Enhanced | | | General Non-Enhanced | | |
| Age | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| Under 49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 49* | 0.00 | 55.56** | 30.00 | 0.00 | 100.00*** | 25.00 |
| 50 | 2.50 | 2.69 | 2.50 | 2.50 | 1.42 | 2.00 |
| 51 | 2.00 | 1.92 | 2.00 | 2.50 | 0.00 | 2.00 |
| 52 | 2.00 | 2.98 | 2.50 | 2.50 | 0.58 | 2.00 |
| 53 | 2.00 | 2.67 | 2.50 | 2.50 | 3.47 | 2.75 |
| 54 | 5.00 | 7.46 | 5.50 | 2.50 | 3.61 | 2.75 |
| 55 | 15.00 | 15.11 | 15.00 | 3.00 | 3.80 | 3.25 |
| 56 | 10.00 | 9.73 | 10.00 | 3.50 | 3.98 | 3.50 |
| 57 | 10.00 | 9.20 | 10.00 | 5.00 | 6.09 | 5.50 |
| 58 | 10.00 | 11.51 | 11.00 | 5.00 | 6.84 | 5.50 |
| 59 | 11.00 | 10.78 | 11.00 | 7.00 | 5.50 | 6.50 |
| 60 | 12.00 | 13.28 | 12.00 | 9.00 | 9.47 | 9.25 |
| 61 | 12.00 | 11.35 | 12.00 | 10.00 | 17.16 | 12.00 |
| 62 | 15.00 | 12.75 | 14.00 | 16.00 | 16.94 | 16.00 |
| 63 | 16.00 | 13.79 | 16.00 | 16.00 | 12.28 | 16.00 |
| 64 | 16.00 | 16.83 | 16.00 | 18.00 | 16.82 | 18.00 |
| 65 | 21.00 | 26.80 | 22.00 | 21.00 | 24.72 | 22.00 |
| 66 | 22.00 | 21.75 | 22.00 | 26.00 | 32.84 | 28.00 |
| 67 | 23.00 | 23.81 | 23.00 | 21.00 | 26.32 | 24.00 |
| 68 | 23.00 | 21.67 | 23.00 | 21.00 | 30.23 | 24.00 |
| 69 | 23.00 | 16.67 | 23.00 | 21.00 | 10.00 | 20.00 |
| 70 | 40.00 | 19.67 | 25.00 | 30.00 | 26.67 | 20.00 |
| 71 | 40.00 | 15.31 | 25.00 | 30.00 | 29.63 | 25.00 |
| 72 | 40.00 | 7.41 | 25.00 | 30.00 | 15.38 | 25.00 |
| 73 | 40.00 | 13.70 | 25.00 | 30.00 | 37.50 | 25.00 |
| 74 | 40.00 | 20.75 | 25.00 | 30.00 | 14.29 | 25.00 |
| 75 & Over | 100.00 | 21.85 | 100.00 | 100.00 | 30.00 | 100.00 |

* *These rates are applicable to General members with 30 or more years of service.*

** *Based on 5 members who retired during the last 3 years.*

*** *Based on 1 member who retired during the last 3 years.*

As shown above, we are recommending slight increases in the retirement rates at early ages and decreases in the retirement rates at later ages for General Enhanced members and overall slight increases in the retirement rates for General Non-Enhanced members.

Chart 3 that follows later in this section compares actual experience with the current and proposed rates of retirement for General Enhanced members and Chart 4 has the same data for General Non-Enhanced members.

| | Rate of Retirement (%) | | | | | |
|---|---|---|---|---|---|---|
| | Safety Law Enforcement (31664.1)* | | | Safety Fire (31664.1)** | | |
| Age | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| 49*** | 10.00 | 16.39 | 12.00 | 0.00 | 1.56 | 2.00 |
| 50 | 16.00 | 20.30 | 18.00 | 6.00 | 4.60 | 5.00 |
| 51 | 16.00 | 20.57 | 18.00 | 8.00 | 6.15 | 7.00 |
| 52 | 16.00 | 16.91 | 17.00 | 9.00 | 10.13 | 9.50 |
| 53 | 16.00 | 18.49 | 17.00 | 10.00 | 12.00 | 10.50 |
| 54 | 22.00 | 17.20 | 22.00 | 16.00 | 7.23 | 15.00 |
| 55 | 22.00 | 22.06 | 22.00 | 19.00 | 14.49 | 18.00 |
| 56 | 20.00 | 13.64 | 20.00 | 20.00 | 21.43 | 20.00 |
| 57 | 20.00 | 25.81 | 20.00 | 23.00 | 14.63 | 21.00 |
| 58 | 20.00 | 22.73 | 20.00 | 30.00 | 25.58 | 28.00 |
| 59 | 26.00 | 25.00 | 26.00 | 30.00 | 26.09 | 28.00 |
| 60 | 45.00 | 18.18 | 35.00 | 45.00 | 20.00 | 30.00 |
| 61 | 45.00 | 26.32 | 35.00 | 45.00 | 11.11 | 30.00 |
| 62 | 45.00 | 40.00 | 40.00 | 45.00 | 18.18 | 35.00 |
| 63 | 45.00 | 28.57 | 40.00 | 45.00 | 25.00 | 35.00 |
| 64 | 45.00 | 40.00 | 40.00 | 45.00 | 0.00 | 35.00 |
| 65 & Over | 100.00 | 43.75 | 100.00 | 100.00 | 0.00 | 100.00 |

* *Retirement rate is 100% after a Safety Law Enforcement member accrues a benefit of 100% of final average earnings.*

** *Retirement rate is currently assumed at 100% after a Safety Fire member accrues a benefit of 100% of final average earnings. However, we are recommending removing this assumption as we only observed a 20% retirement rate for those Safety Fire members who accrued a benefit of 100% of final average earnings during the last three years.*

*** *These rates are applicable to Safety members with 20 or more years of service.*

As shown above, we are recommending slight increases in the retirement rates at early ages and decreases in the retirement rates at later ages for Safety Law Enforcement (3.0% @ 50 under §31664.1) members and decreases overall in the retirement rates for Safety Fire (3.0% @ 50 under §31664.1) members.

Chart 5 that follows later in this section compares actual experience with the current and proposed rates of retirement for Safety Law Enforcement (3.0% @ 50 under §31664.1) members and Chart 6 has the same data for Safety Fire (3.0% @ 50 under §31664.1) members.

| | Rate of Retirement (%) | | |
|---|---|---|---|
| | Safety Probation (31664.1)* | | |
| Age | Current Rate | Actual Rate | Proposed Rate |
| 49 | 0.00 | 2.86 | 0.00 |
| 50 | 3.00 | 6.90 | 3.25 |
| 51 | 3.00 | 3.70 | 3.25 |
| 52 | 4.00 | 8.51 | 4.25 |
| 53 | 4.00 | 4.26 | 4.25 |
| 54 | 6.00 | 13.16 | 7.00 |
| 55 | 11.00 | 14.71 | 12.00 |
| 56 | 11.00 | 9.38 | 12.00 |
| 57 | 17.00 | 21.43 | 18.00 |
| 58 | 20.00 | 17.39 | 18.00 |
| 59 | 20.00 | 14.29 | 18.00 |
| 60 | 20.00 | 23.81 | 20.00 |
| 61 | 20.00 | 7.69 | 20.00 |
| 62 | 25.00 | 33.33 | 25.00 |
| 63 | 50.00 | 30.00 | 40.00 |
| 64 | 50.00 | 20.00 | 40.00 |
| 65 & Over | 100.00 | 33.33 | 100.00 |

* *Retirement rate is 100% after a Safety Probation member accrues a benefit of 100% of final average earnings.*

As shown above, we are recommending slight increases in the retirement rates at early ages and decreases in the retirement rates at later ages for Safety Probation members.

Chart 7 that follows later in this section compares actual experience with the current and proposed rates of retirement for Safety Probation members.

For General SJC under (2.0% @ 57 under §31676.12), Safety Law Enforcement (3.0% @ 55 under §31664.2) and Safety Fire (3.0% @ 55 under §31664.2), we do not have credible experience from the past three years to propose new rates based on actual retirement from members of the newer plans. However, we are recommending lowering some of the rates at later ages currently used for those plans to commensurate with the overall later retirement assumptions that we observed and are recommending from the other older plans.

| | Rate of Retirement (%) | | | | | |
|---|---|---|---|---|---|---|
| | General SJC (31676.12) | | Safety Law Enforcement (31664.2)* | | Safety Fire (31664.2)** | |
| Age | Current Rate | Proposed Rate | Current Rate | Proposed Rate | Current Rate | Proposed Rate |
| 50 | 3.00 | 3.00 | 11.50 | 11.50 | 8.00 | 8.00 |
| 51 | 3.00 | 3.00 | 12.00 | 12.00 | 10.00 | 10.00 |
| 52 | 3.00 | 3.00 | 12.70 | 12.70 | 11.00 | 11.00 |
| 53 | 3.00 | 3.00 | 17.90 | 17.90 | 12.00 | 12.00 |
| 54 | 3.00 | 3.00 | 18.80 | 18.80 | 14.00 | 14.00 |
| 55 | 4.00 | 4.00 | 30.70 | 30.70 | 24.00 | 24.00 |
| 56 | 5.00 | 5.00 | 20.00 | 20.00 | 23.00 | 23.00 |
| 57 | 6.00 | 6.00 | 20.00 | 20.00 | 27.00 | 27.00 |
| 58 | 7.00 | 7.00 | 25.00 | 25.00 | 27.00 | 27.00 |
| 59 | 9.00 | 9.00 | 30.00 | 30.00 | 36.00 | 36.00 |
| 60 | 11.00 | 11.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 61 | 13.00 | 13.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 62 | 15.00 | 15.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 63 | 15.00 | 15.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 64 | 20.00 | 20.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 65 | 20.00 | 20.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 66 | 24.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 67 | 24.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 68 | 24.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 69 | 24.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 70 | 100.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 71 | 100.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 72 | 100.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 73 | 100.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 74 | 100.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 75 & Over | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

* *Retirement rate is 100% after a Safety Law Enforcement member accrues a benefit of 100% of final average earnings.*

** *Retirement rate is currently assumed at 100% after a Safety Fire member accrues a benefit of 100% of final average earnings. However, we are recommending removing this assumption to be consistent to what we proposed for the Non-CalPEPRA Safety Fire members covered under §31664.1.*

Chart 8 compares the current rates with the proposed rates of retirement for General SJC under (2.0% @ 57 under §31676.12). Chart 9 has the same data for Safety Law Enforcement (3.0% @ 55 under §31664.2). Chart 10 has the same data for Safety Fire (3.0% @ 55 under §31664.2).

Note that effective January 1, 2013, new CalPEPRA formulas were implemented for new General and Safety tiers. For these new formulas, we do not have credible experience from the past three years to propose new rates based on actual retirement from members of the newer plans. However, we have lowered our recommended rates for CalPEPRA General and Safety formulas at later ages so that those rates will remain comparable to the proposed retirement rates we are recommending for the non-CalPEPRA General and Safety formulas.

| | Rate of Retirement (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CalPEPRA – General | | CalPEPRA – Safety Probation* | | CalPEPRA – Safety Law Enforcement* | | CalPEPRA – Safety Fire** | |
| Age | Current Rate | Proposed Rate | Current Rate | Proposed Rate | Current Rate | Proposed Rate | Current Rate | Proposed Rate |
| 50 | 0.00 | 0.00 | 2.50 | 2.50 | 11.00 | 11.00 | 6.50 | 6.00 |
| 51 | 0.00 | 0.00 | 2.50 | 2.50 | 11.50 | 11.50 | 8.00 | 7.00 |
| 52 | 4.00 | 4.00 | 3.00 | 3.00 | 12.00 | 12.00 | 9.00 | 9.00 |
| 53 | 1.50 | 1.50 | 3.00 | 3.00 | 16.00 | 16.00 | 10.00 | 10.00 |
| 54 | 1.50 | 1.50 | 5.50 | 5.50 | 17.00 | 17.00 | 12.00 | 11.50 |
| 55 | 2.50 | 2.50 | 10.00 | 10.00 | 28.00 | 28.00 | 21.00 | 21.00 |
| 56 | 3.50 | 3.50 | 10.00 | 10.00 | 18.00 | 18.00 | 20.00 | 20.00 |
| 57 | 5.50 | 5.50 | 15.00 | 15.00 | 17.50 | 17.50 | 22.00 | 22.00 |
| 58 | 7.50 | 7.50 | 20.00 | 20.00 | 22.00 | 22.00 | 25.00 | 25.00 |
| 59 | 7.50 | 7.50 | 20.00 | 20.00 | 26.00 | 26.00 | 31.50 | 30.00 |
| 60 | 7.50 | 7.50 | 100.00 | 40.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 61 | 7.50 | 7.50 | 100.00 | 40.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 62 | 14.00 | 14.00 | 100.00 | 40.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 63 | 14.00 | 14.00 | 100.00 | 40.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 64 | 14.00 | 14.00 | 100.00 | 40.00 | 100.00 | 40.00 | 100.00 | 40.00 |
| 65 | 18.00 | 18.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 66 | 22.00 | 22.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 67 | 23.00 | 23.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 68 | 23.00 | 23.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 69 | 23.00 | 23.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 70 | 30.00 | 25.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 71 | 30.00 | 25.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 72 | 30.00 | 25.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 73 | 30.00 | 25.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 74 | 30.00 | 25.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 75 & Over | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

* *Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.*

** *Retirement rate is currently assumed at 100% after a Safety Fire member accrues a benefit of 100% of final average earnings. However, we are recommending removing this assumption to be consistent to what we proposed for the Non-CalPEPRA Safety Fire members.*

For ages where we are extending the retirement rates in the two tables above, we did not reduce the retirement rates to the level used for the older plans with credible experience since the current rates for those plans are already less than 100%.

Chart 11 compares the current rates with the proposed rates of retirement for CalPEPRA General members. Chart 12 has the same data for CalPEPRA Safety Probation members. Chart 13 has the same data for CalPEPRA Safety Law Enforcement members. Chart 14 has the same data for CalPEPRA Safety Fire members.

## Use of Age-Based Versus Service-Based Retirement Assumptions

We have also looked into the desirability of developing and applying the retirement assumptions based on service instead of age at retirement. The table below is based on a high-level review by combining the retirement experience for all OCERS General members covered under various formulas and all OCERS Safety members covered under various formulas. For General members, the actual retirement experience shows relatively higher retirement rates for members immediately upon reaching the minimum age or service requirement for a retirement benefit (i.e., attaining age 70 regardless of service or attaining age 50 with 10 or more years of retirement service credit) whereas from 10 years of service to 25 years of service, the retirement rates are very flat. For Safety members, the retirement rates are very volatile with no discernable pattern for members with less than 25 years of service.

The above analyses can be improved if we introduce age as additional variable to use in summarizing the experience. This is exactly the case for CalPERS as their retirement assumptions are developed and applied based on both a member's age and service. We believe CalPERS is able to develop retirement assumptions based on both age and service because it is a significantly larger entity with more exposures and decrements, allowing them to break down the experience into smaller groups. If we were to split the experience for OCERS by age and service, we do not believe we would have as much reliable experience to make credible recommended retirement assumptions.

| | Rate of Retirement (%) | |
|---|---|---|
| **Years of Service** | **Actual Rate - General Members** | **Actual Rate - Safety Members** |
| 0 - 4 | 0.00 | 0.00 |
| 5 - 9 | 47.59 | 100.00 |
| 10 – 14 | 6.64 | 8.11 |
| 15 – 19 | 6.75 | 8.54 |
| 20 – 14 | 8.63 | 4.29 |
| 25 – 19 | 11.87 | 15.59 |
| 30 – 14 | 18.57 | 31.77 |
| 35 – 39 | 29.17 | 20.59 |
| 40 & over | 29.17 | 0.00 |

### Deferred Vested Members

In prior valuations, deferred vested General and Safety members were assumed to retire at age 58 and 53, respectively. The average age at retirement over the current three years period in this experience study was 58.8 for General and 53.1 for Safety. We recommend increasing the assumption for General members from age 58 to age 59 and maintaining the current assumption for Safety members at age 53.

For members who terminate with less than five years of service after January 1, 2003 and are not vested, we assume they would retire at age 70 for both General and Safety if they decide to leave their contributions on deposit as permitted by §31629.5.

### Reciprocity

It is currently assumed that 20% of future General and 30% of future Safety deferred vested members would go on to work for a reciprocal system and receive 4.25% compensation increases for General and 5.00% for Safety per annum from termination until their date of retirement. Based on the actual experience that 13% of General and 23% of Safety members went on to work for a reciprocal system as of December 31, 2016, we recommend decreasing the reciprocity assumption for General members from 20% to 15% and decreasing the reciprocity assumption for Safety members from 30% to 25%. Based on our ultimate recommended merit and promotional salary increase assumption of 1.00% for General and 1.50% for Safety (and our recommended economic assumptions), we propose that a 4.50% (i.e., 3.00% inflation plus 0.50% "across the board" plus 1.00% merit and promotional) for General and 5.00% (i.e., 3.00% inflation plus 0.50% "across the board" plus 1.50% merit and promotional) salary increase assumption be utilized to anticipate salary increases (under the reciprocal system) from termination from OCERS to the expected date of retirement.

### Survivor Continuance Under Unmodified Option

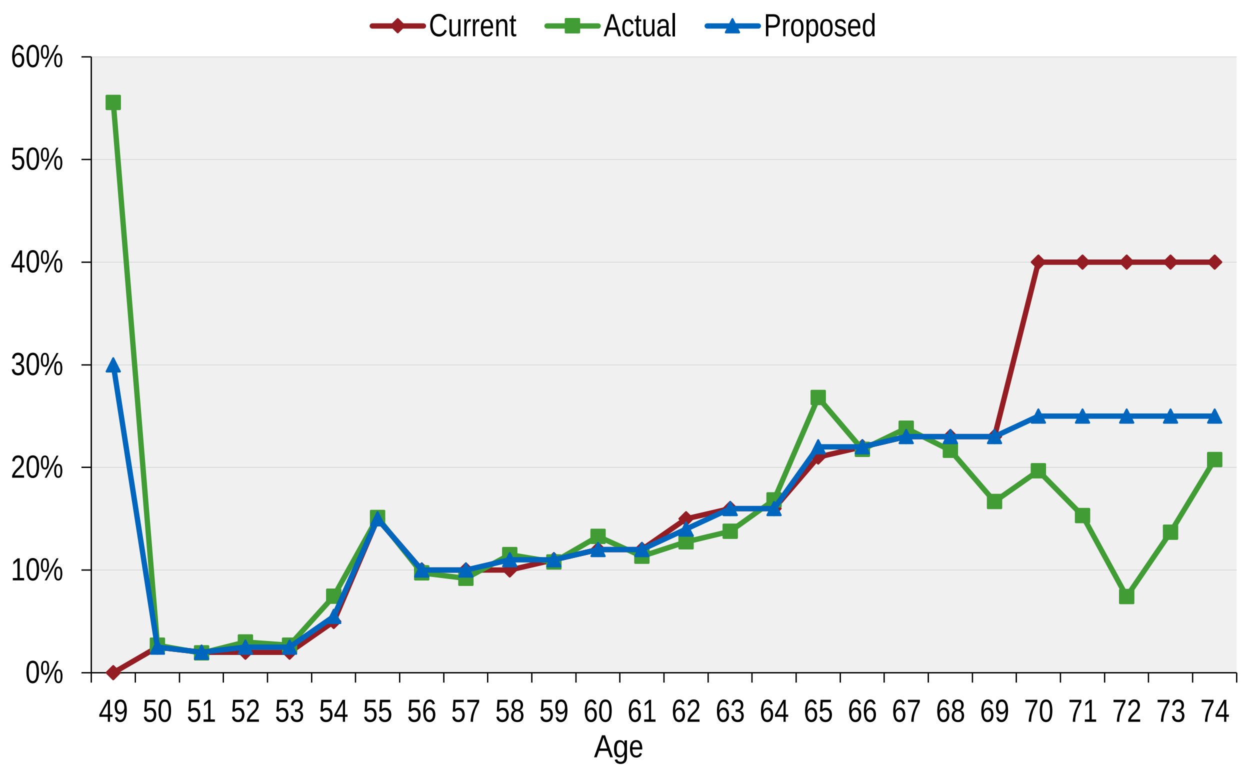
In prior valuations, it was assumed that 75% of all active male members and 50% of all active female members who selected the unmodified option would be married or have an eligible domestic partner when they retired. According to the experience of members who retired during the last three years, about 72% of all male members and 55% of all female members were married or had a domestic partner at retirement. We recommend continuing the assumptions that 75% of active male members will be married or have a domestic partner when they retire and increasing the assumption that 50% of active female members will be married or have a domestic partner when they retire to 55%.

Since the value of the survivor's continuance benefit is dependent on the survivor's age and sex, we must also have assumptions for the age and sex of the survivor. Based on the experience during the three-year period, we believe that it is reasonable to continue to assume a three-year age difference for the survivors age as compared to the member's age. Since the majority of survivors are expected to be of the opposite sex, even with the inclusion of domestic partners, we will continue to assume that the survivor's sex is the opposite of the member.

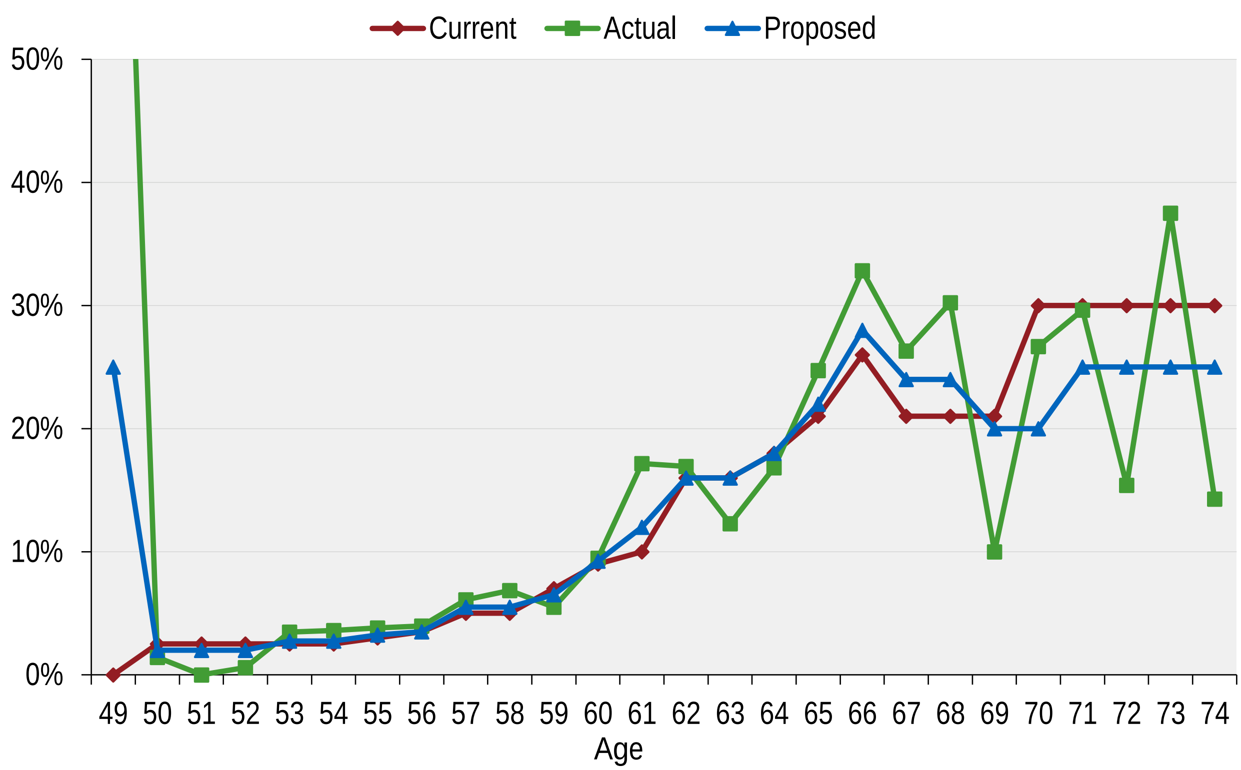
The proposed assumption for the age of the survivor and recommended assumption are shown below. These assumptions will continue to be monitored in future experience studies.

| Survivor Ages – Current Assumptions | | | |
|---|---|---|---|
| | Survivor's Age as Compared to Member's Age | | |
| Beneficiary Sex | Current Assumption | Actual Age Difference | Recommended Assumption |
| Male | 3 years older | 2.8 years older | No change |
| Female | 3 years younger | 2.5 years younger | No change |

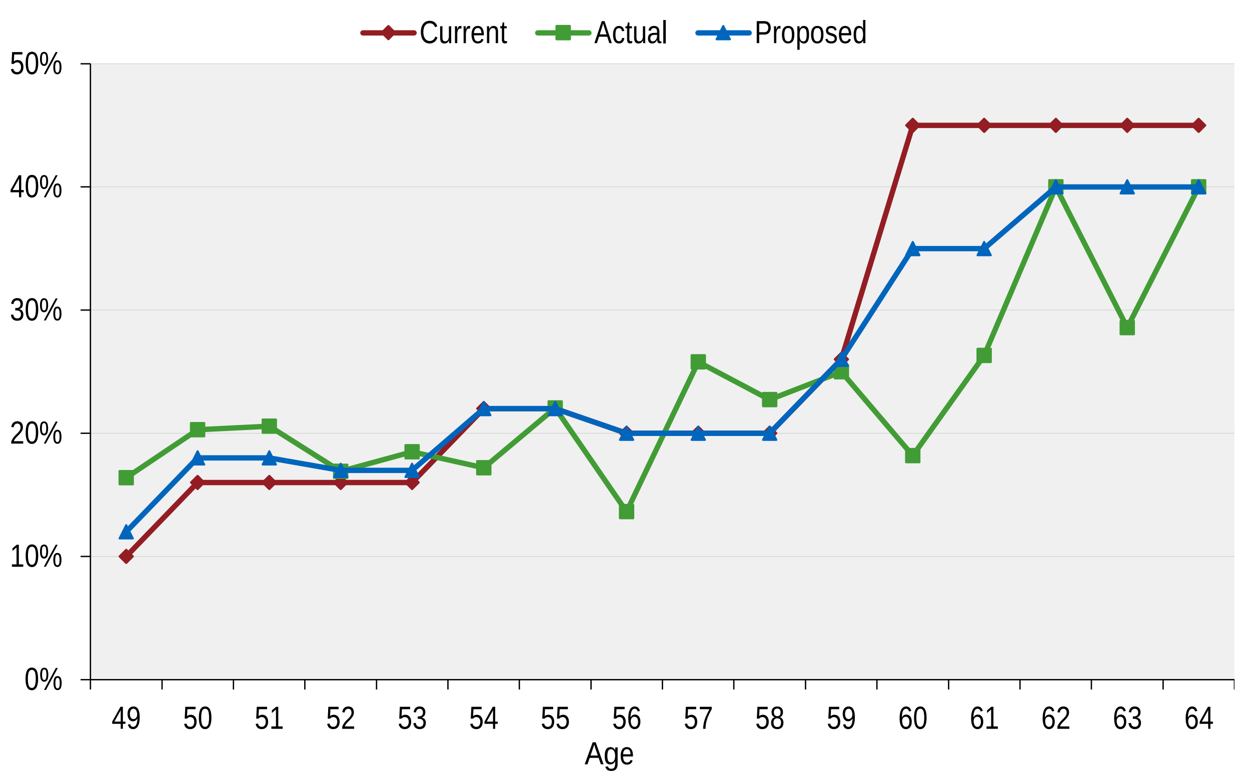
**CHART 3: RETIREMENT RATES**
**GENERAL ENHANCED MEMBERS**



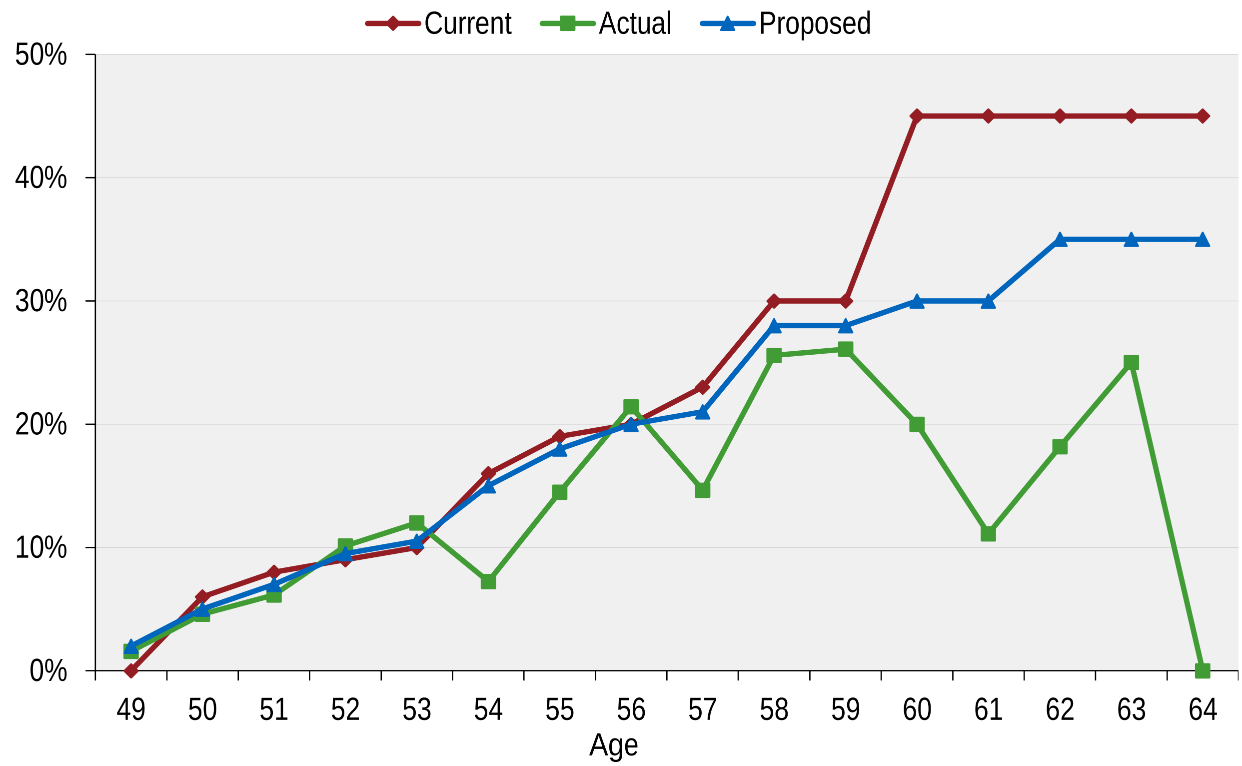
## CHART 4: RETIREMENT RATES
## GENERAL NON-ENHANCED MEMBERS




## CHART 5: RETIREMENT RATES
## SAFETY LAW ENFORCEMENT MEMBERS (31664.1)



## CHART 6: RETIREMENT RATES
## SAFETY FIRE AUTHORITY MEMBERS (31664.1)




## CHART 7: RETIREMENT RATES
## SAFETY PROBATION MEMBERS (31664.1)

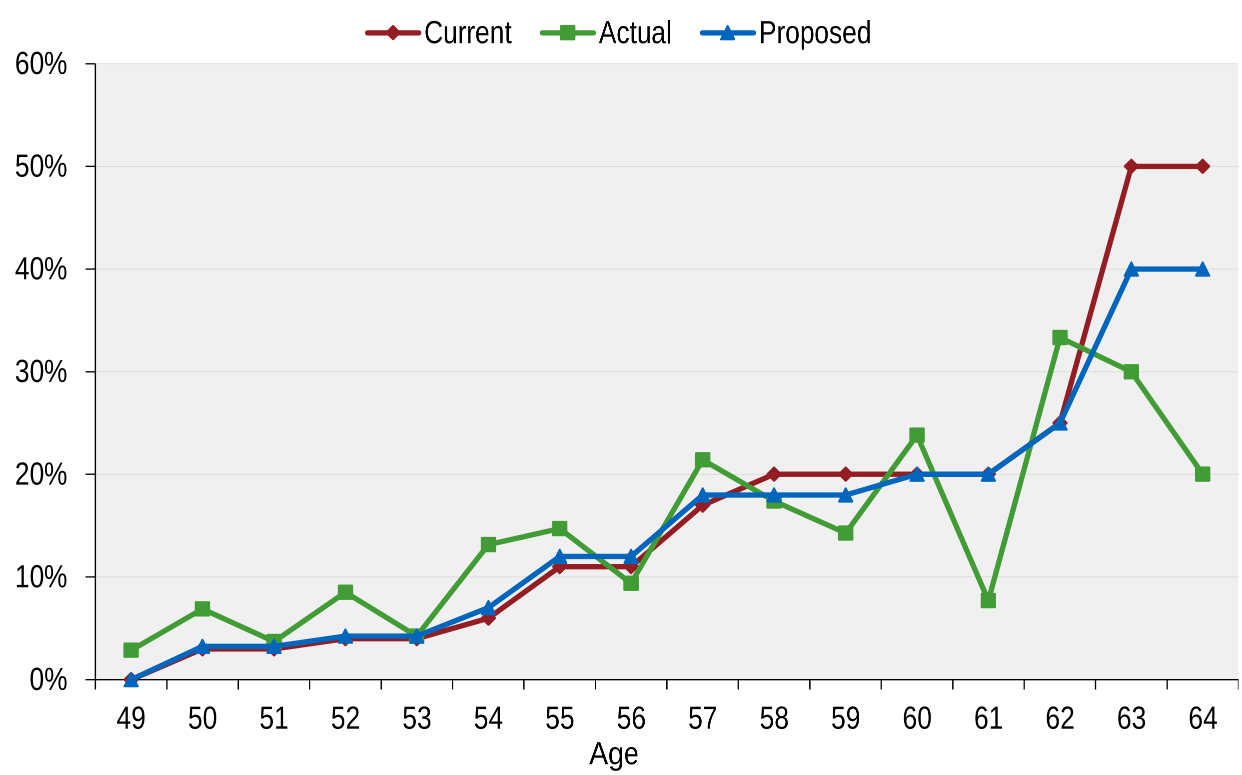


**CHART 8: RETIREMENT RATES**
**GENERAL SJC MEMBERS (31676.12)**

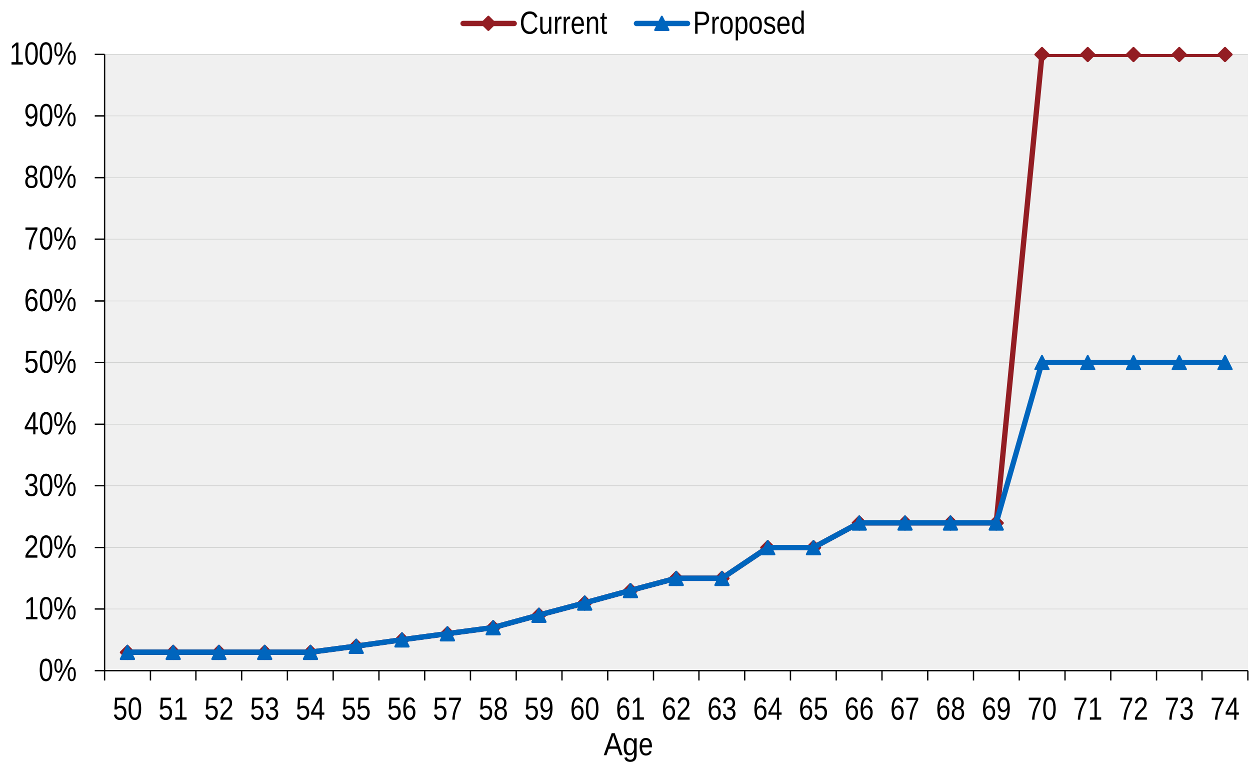
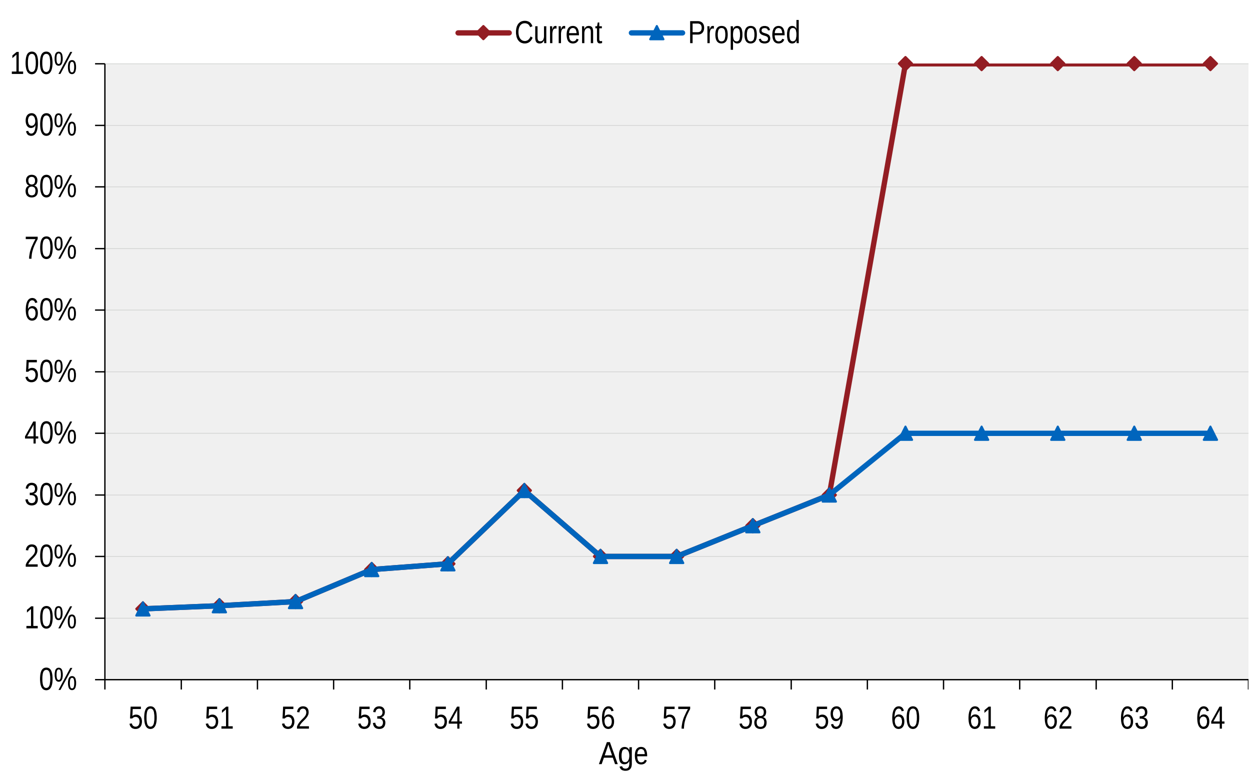
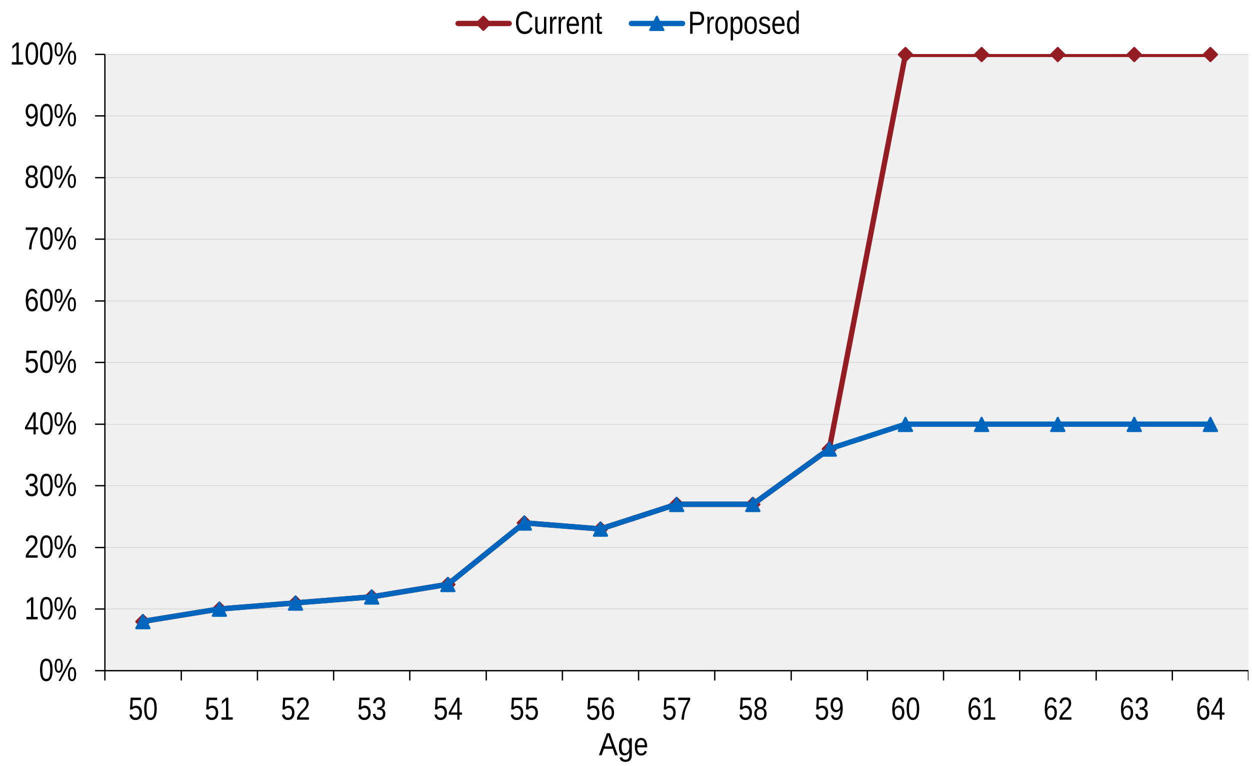



**CHART 9: RETIREMENT RATES**
**SAFETY LAW ENFORCEMENT MEMBERS (31664.2)**



## CHART 10: RETIREMENT RATES
## SAFETY FIRE AUTHORITY MEMBERS (31664.2)




## CHART 11: RETIREMENT RATES
## CALPEPRA GENERAL MEMBERS

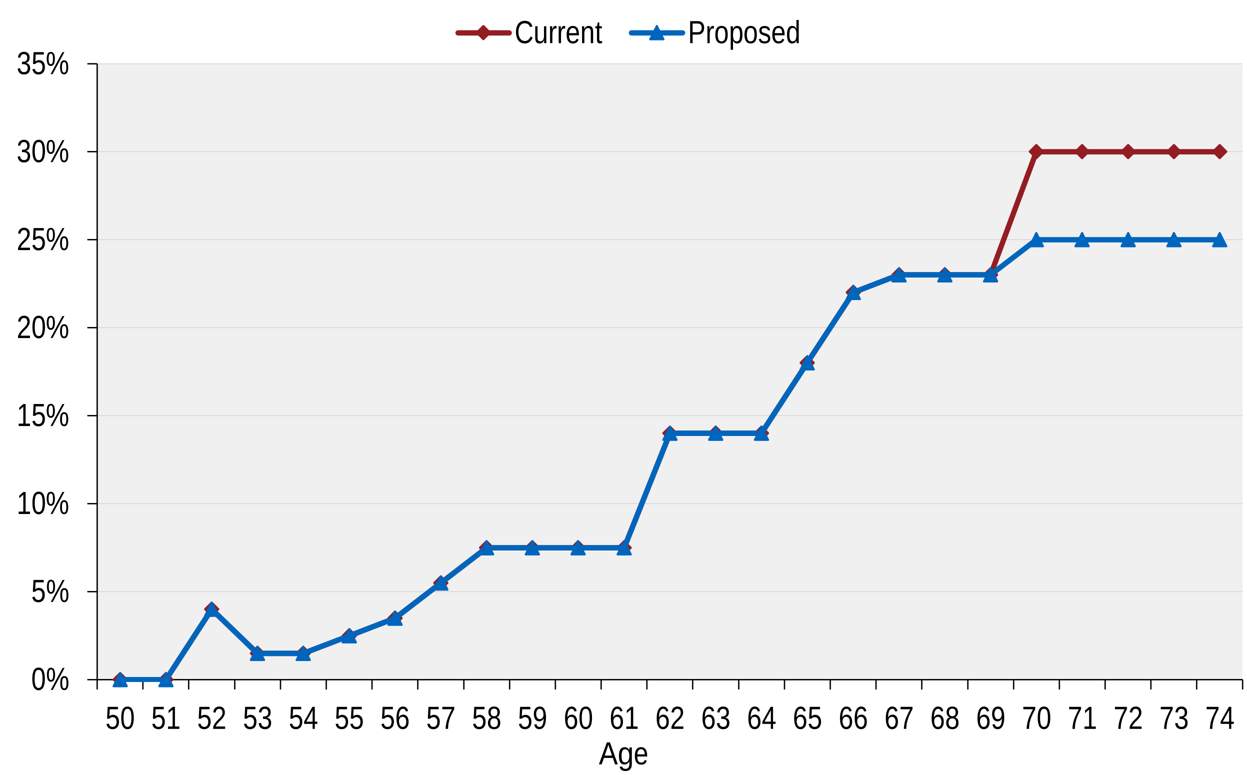


**CHART 12: RETIREMENT RATES**
**CALPEPRA SAFETY PROBATION MEMBERS**

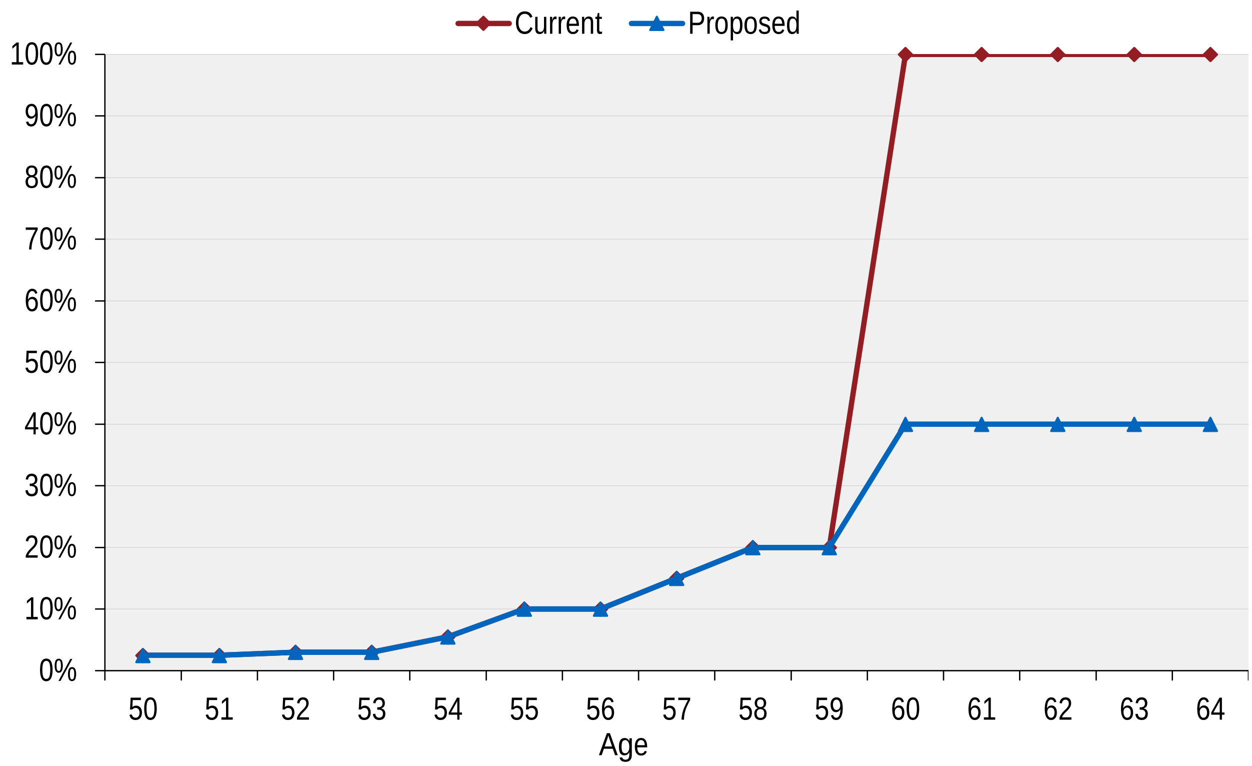
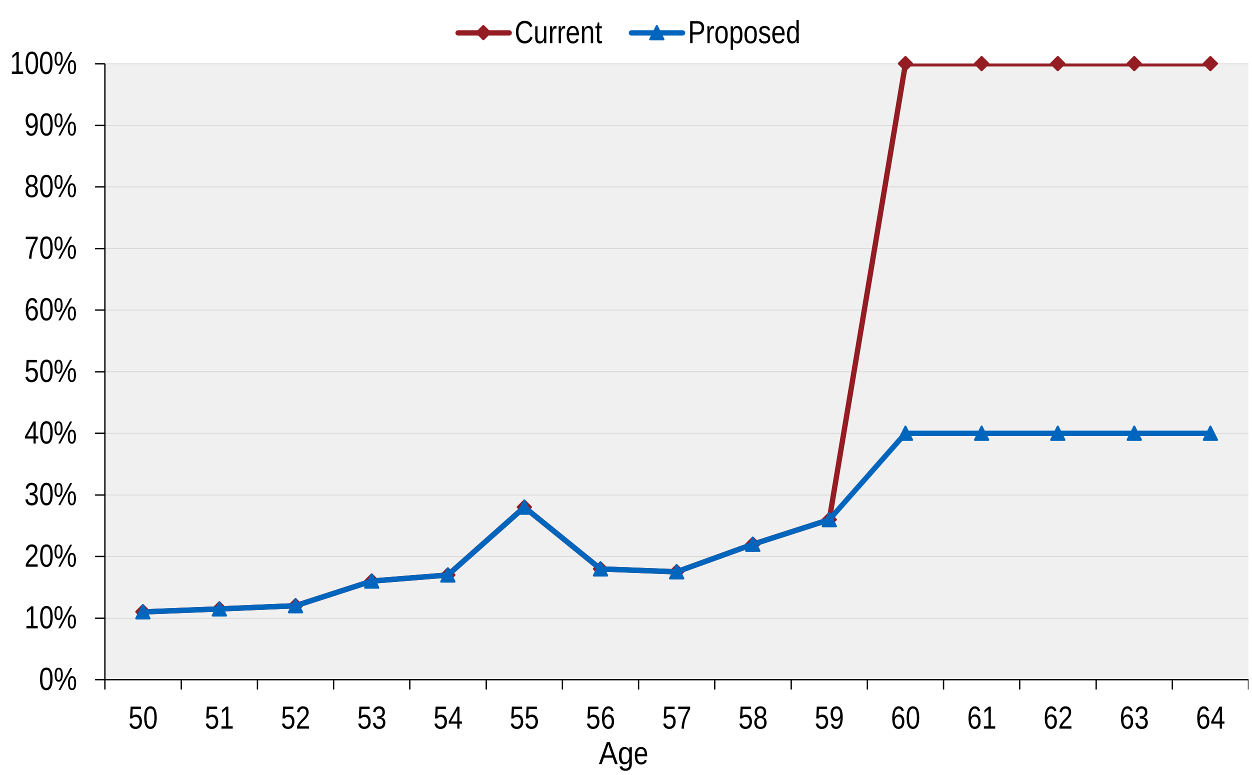
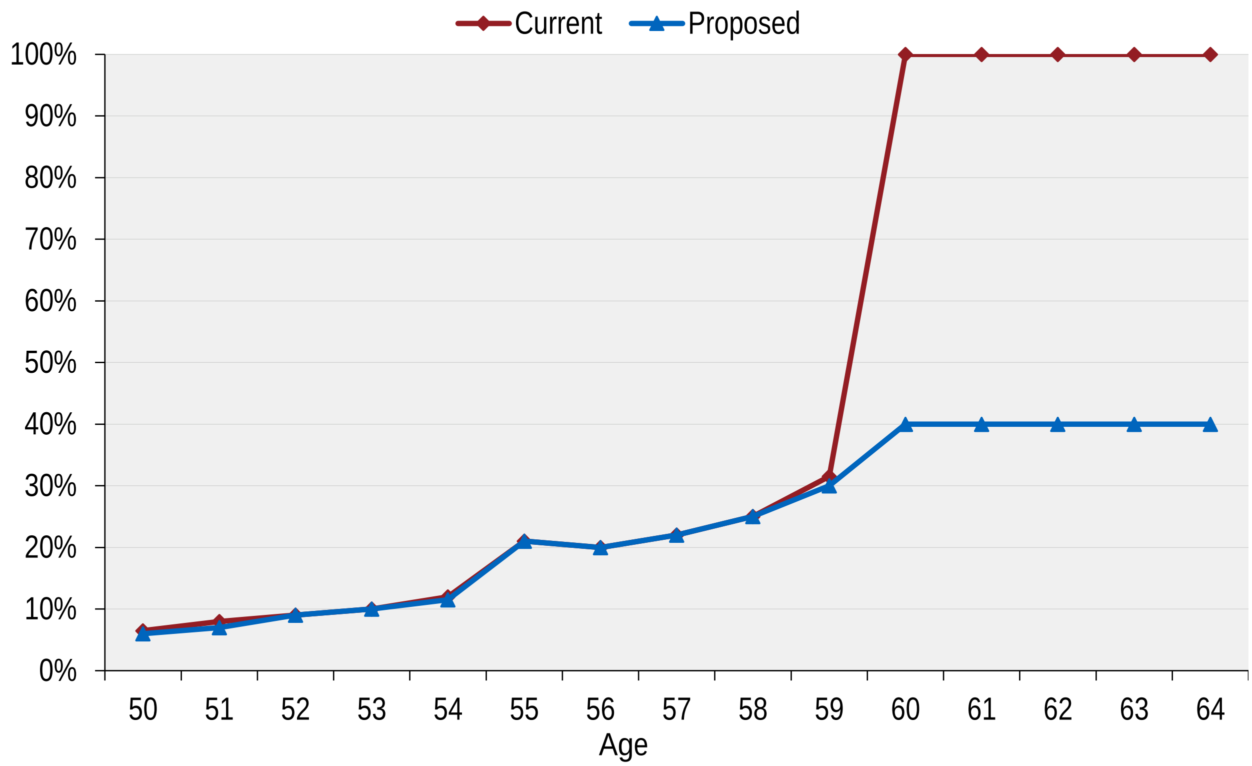



**CHART 13: RETIREMENT RATES**
**CALPEPRA SAFETY LAW ENFORCEMENT MEMBERS**



## CHART 14: RETIREMENT RATES
## CALPEPRA SAFETY FIRE AUTHORITY MEMBERS



## B. Mortality Rates - Healthy

The "healthy" mortality rates project the life expectancy of a member who retires from service (i.e., who did not retire on a disability pension). Also, the "healthy" pre-retirement mortality rates project what proportion of members will die before retirement. For General members, the table currently being used for post-service retirement mortality rates is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale BB to 2020 with no age adjustments. For Safety members, the table currently being used for post-service retirement mortality rates is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale BB to 2020 with ages set back two years. All General and Safety beneficiaries are assumed to have the same mortality of a General member of the opposite sex who has taken a service (non-disabled) retirement.

The Society of Actuaries (SOA) has published the RP-2014 family of mortality tables and associated mortality improvement scales. Within that family of mortality tables, there are mortality rates developed for annuitants on a "headcount" weighted basis that weight all retirees at the same age the same way without regard to the level of benefits those annuitants are receiving from a retirement plan. Mortality rates are also developed for annuitants on a "benefit" weighted basis, with higher credibility assigned to experience from annuitants receiving larger benefits. The headcount-weighted basis is the more common practice currently and is the approach used by Segal in the past for its California public system clients (including OCERS) and by other public sector actuaries in California.

As for the mortality improvement scales, they can be applied in one of two ways. Historically, the more common application is to use a "static" approach to anticipate a fixed level of mortality improvement for all annuitants receiving benefits from a retirement plan. This is in contrast to a "generational" approach where each future year has its own mortality table that reflects the forecasted improvements, using the published improvement scales. While the static approach is still used by some of Segal's California public system clients, as well as CalPERS, the "generational" approach is the emerging practice within the actuarial profession.

A generational mortality table provides dynamic projections of mortality experience for each cohort of retirees. For example, the mortality rate for someone who is 65 next year will be slightly less than for someone who is 65 this year. In general, using generational mortality anticipates increases in the cost of the Plan over time as participants' life expectancies are projected to increase. This is in contrast to updating a static mortality assumption with each experience study as we have proposed in prior experience studies.

The SOA is in the process of collecting data from public sector plans so that they can develop mortality tables based on public sector experience comparable to the RP-2014 mortality tables developed using data collected from private and multi-employer plans. Furthermore, after publishing the two-dimensional MP-2014 life expectancy improvement scale, the SOA replaced it with the two-dimensional MP-2015 life expectancy improvement scales to remove some of the conservatism built into the MP-2014 scale and to better reflect the most recent data of mortality improvement from the Social Security Administration. We understand that the Retirement Plans Experience Committee of the Society of Actuaries (RPEC) intends to publish annual updates to their mortality improvement scales. Improvement scale MP-2016 is the latest improvement scale available.

We recommend that given the trend in the retirement industry to move towards generational mortality, it would be reasonable for the Board to adopt the Headcount-Weighted RP-2014 mortality table (adjusted for OCERS experience), and project the mortality improvement generationally using the MP-2016 mortality improvement scale. Once the SOA has included data from public sector plans in developing the new tables, we will also include a discussion with the Board on whether to consider the benefit weighted mortality rates in a future experience study.

As an illustration of the relative effect of these approaches, we have provided in the table below the approximate change in the total employer and member contribution rates based on the different approaches to build in margin for future mortality improvements.

| | Employer and Member Contribution Rate Impact Combined |
|---|---|
| Headcount Weighted RP-2014 Family of Tables – Static Approach with Increased Margin* | 3.5% of payroll |
| Benefit Weighted RP-2014 Family of Tables – Static Approach without Increased Margin | 5.1% of payroll |
| Headcount Weighted RP-2014 Family of Tables – Generational Approach | 4.3% of payroll |

* *Includes an increased margin of 20% to anticipate the move towards a "generational" approach.*

In order to use more actual OCERS experience in our analysis, we have used experience for a nine-year period by using data from the current (from January 1, 2014 to December 31, 2016) and the last two (from January 1, 2011 to December 31, 2013 and January 1, 2008 to December 31, 2010) experience study periods to study this assumption. We have continued to examine the mortality experience with all beneficiaries included since combining General healthy retirees and all General and Safety beneficiaries would provide more exposures and would increase the credibility of the results.

## Pre-Retirement Mortality

In prior experience studies, the pre-retirement mortality rates for active members were set equal to the post-retirement mortality rates for retirees since the actual number of deaths among active members was not large enough to provide a statistically credible analysis. However, this approach is not compatible with our current proposal because the post-retirement RP-2014 Healthy Annuitant table does not include rates for ages below 50.

From the RP-2014 family of tables, we recommend that pre-retirement mortality follow the Headcount-Weighted RP-2014 Employee Mortality Table (separate tables for males and females) times 80%, projected generationally with the two-dimensional scale MP-2016. The 80% scaling factor is to account for the lower incidences of observed pre-retirement death on the combined General and Safety workforce relative to the standard table.

Currently, our assumption is that all General member pre-retirement deaths are non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected and the other 10% are assumed to be service connected. Based on actual experience during the last three years (with 100% non-service connected deaths for General and 90% non-service connected deaths for Safety), we recommended maintaining the current assumption for both General and Safety members.

## Post- Retirement Mortality (Service Retirements)

Among all retired members, the actual deaths compared to the expected deaths under the current assumptions for the last nine years is shown in the table below. We also show the deaths under proposed assumptions. In prior years we have generally set the mortality assumption using a static mortality projection so that actual deaths will be at least 10% greater than those assumed. As noted above, we are recommending the use of a generational mortality table rather than static mortality. A generational mortality table incorporates a more explicit assumption for future mortality improvement. Accordingly, the goal is to start with a mortality table that closely matches the current experience (without a margin for future mortality improvement), and then reflect mortality improvement by projecting lower mortality rates in future years. That is why the current actual to expected ratios shown in the table below for General (including all beneficiaries) and Safety are 98% and 97%, respectively. In future years these ratios should remain around 100%, as long as actual mortality improved at the same rates as anticipated in the generational mortality tables. The actual deaths compared to the expected deaths under the current and proposed assumptions for the last nine years are as follows:

| | General Members – Healthy | | | Safety Members - Healthy | | |
|---|---|---|---|---|---|---|
| **Gender** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** |
| Male | 913 | 921 | 1,000 | 115 | 126 | 130 |
| Female | 1,029 | 1,081 | 1,098 | 10 | 11 | 11 |
| **Total** | **1,942** | **2,002** | **2,098** | **125** | **137** | **141** |
| Actual / Expected | 103% | | 95% | 110% | | 97% |

| | All Beneficiaries – Healthy | | |
|---|---|---|---|
| **Gender** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** |
| Male | 135 | 179 | 139 |
| Female | 440 | 475 | 468 |
| **Total** | **575** | **654** | **607** |
| Actual / Expected | 114% | | 108% |

| | General Members and All Beneficiaries – Healthy | | | Safety Members - Healthy | | |
|---|---|---|---|---|---|---|
| **Gender** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** |
| Male | 1,048 | 1,100 | 1,139 | 115 | 126 | 130 |
| Female | 1,469 | 1,556 | 1,566 | 10 | 11 | 11 |
| **Total** | **2,517** | **2,656** | **2,705** | **125** | **137** | **141** |
| Actual / Expected | 106% | | 98% | 110% | | 97% |

For General service retirees and all beneficiaries, the ratio of actual to expected deaths was 106% during the nine-year period. We recommend updating the current table to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) with no age adjustments. This will bring the current actual to expected ratio to 98%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

For Safety service retirees, the ratio of actual to expected deaths was 110% during the nine-year period. We recommend updating the current table to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) with ages set back four years. This will bring the current actual to expected ratio to 97%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

All of this is consistent with ASOP 35 as we anticipate expected future improvement in life expectancy using the generational approach.

Chart 15 compares actual to expected deaths for General members and all beneficiaries under the current and proposed assumptions over the last nine years. Experience shows that there were more deaths than predicted by the current table.

Chart 16 has the same comparison for Safety members. Experience shows that there were more deaths than predicted by the current table.

Chart 17 shows the life expectancies (i.e. expected future lifetime) under the current and the proposed tables for General members and all beneficiaries.

Chart 18 shows the same information for Safety members.

The expected deaths (Charts 15 and 16) and life expectancies (Charts 17 and 18) under the proposed generational mortality table are based on mortality rates from 2014 which is the base year of the table. In practice, life expectancies will be assumed to increase based on applying the mortality improvement scale.

### Comparison to CalPERS' Mortality Table

Following prior practice, we have continued to use the mortality tables published by the SOA but adjusted to reflect OCERS' mortality experience in recommending the post-retirement mortality tables. Subsequent to our last experience study, we were asked whether or not it could have been appropriate to start with the mortality tables used by CalPERS for their participating employers and members and modify them for use at OCERS. We have addressed that question in this section.

When comparing OCERS' mortality experience over the past nine years against the CalPERS mortality table with no age adjustment, the actual to expected ratios are 115% for General members (including beneficiaries), 96% for Safety members and 114% when combining both General and Safety members. The reason why the actual and expected ratios differed significantly between General and Safety members is that CalPERS does not develop separate mortality tables between different membership classes (i.e., General and Safety) for members who retired from service retirement.

It is our understanding from conversations with CalPERS staff that CalPERS is considering moving towards using different mortality tables for General and Safety members in their valuations at some future time. In addition, they are also considering moving to a generational approach to anticipate future mortality improvements which is our understanding of the reason why they are currently considering about a 20% margin in selecting their mortality assumptions. After taking the above factors into account, we believe that the tables we have proposed (using the SOA mortality tables as a starting point) provide a better predictor for mortality experience for OCERS.

### Mortality Table for Member Contributions, Optional Forms of Payment and Reserves

There are administrative reasons why a generational mortality table is more difficult to implement for determining age-based member contribution rates, optional forms of payment and reserves. One emerging practice is to approximate the use of a generational mortality table by the use of a static table with projection of the mortality improvement over a period that is close to the duration of the benefit payments for active members. We would recommend the use of this approximation.

We recommend that the mortality table used for determining contributions for General members be updated to a blended table based on the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 40% male and 60% female. This is based on the proposed valuation mortality table for General members and the actual gender distribution of General members. For all beneficiaries, we recommend the same tables as General members but weighted 60% male and 40% female.

We also recommend an update to the mortality table for Safety members to be the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016 set back four years, weighted 80% male and 20% female. This is based on the proposed mortality table for Safety members and the actual gender distribution for the current Safety members.

**CHART 15: POST-RETIREMENT DEATHS**
**NON – DISABLED GENERAL MEMBERS AND ALL BENEFICIARIES**
**(JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)**

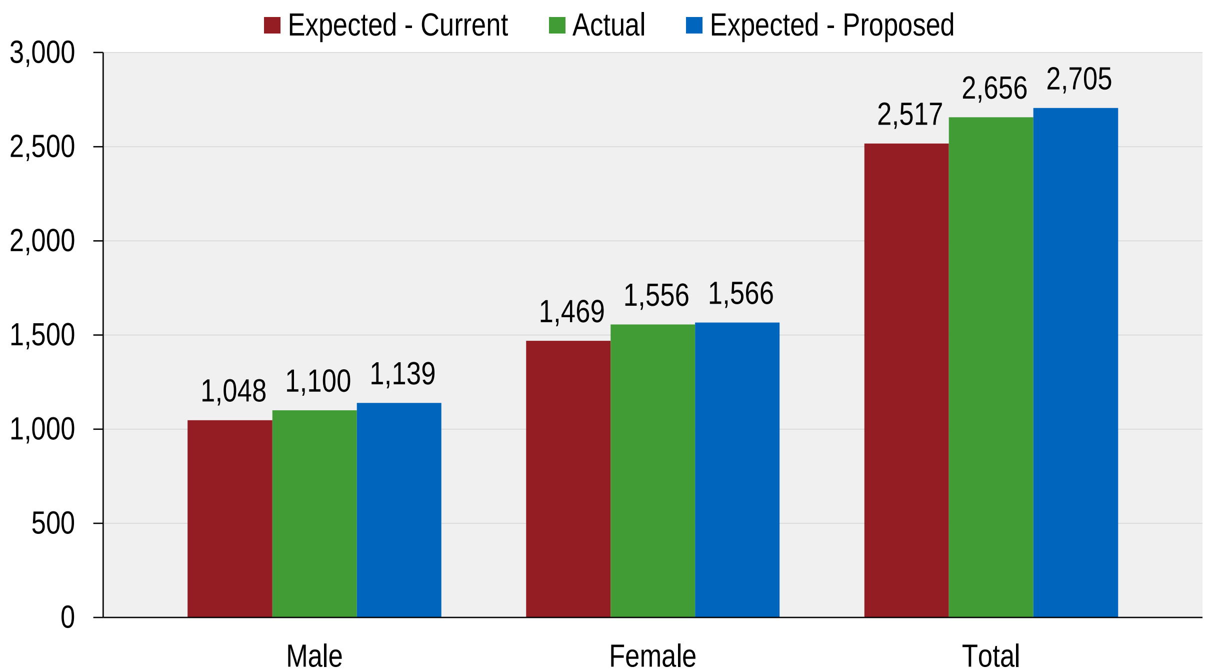
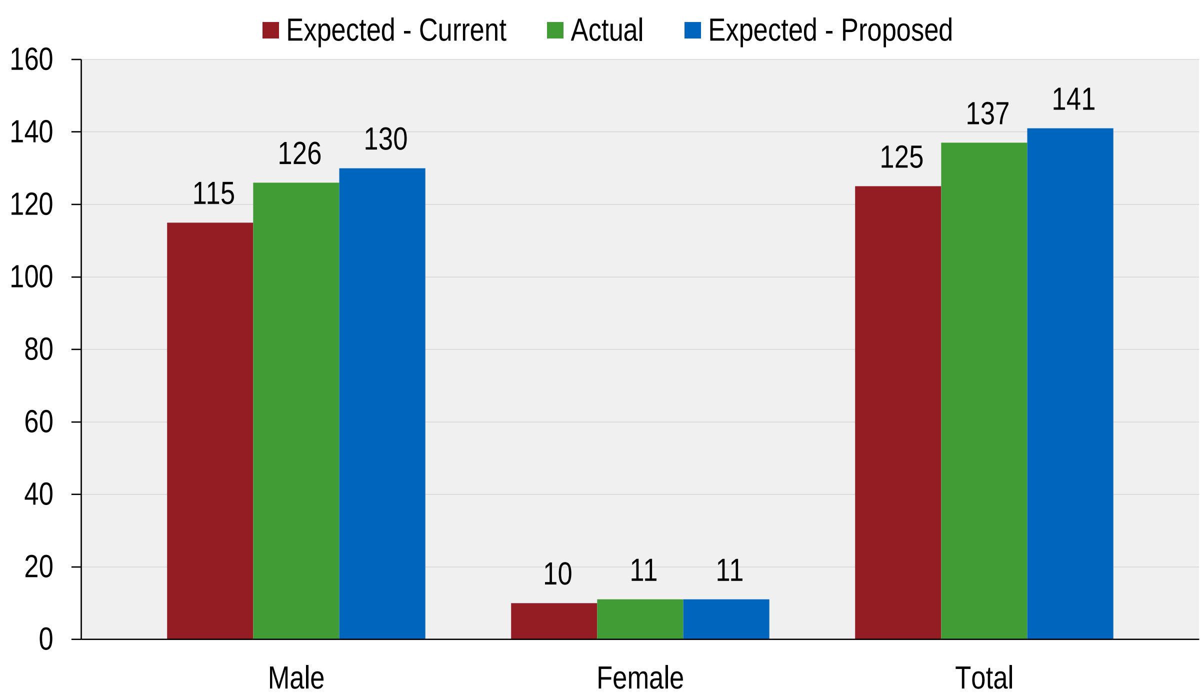
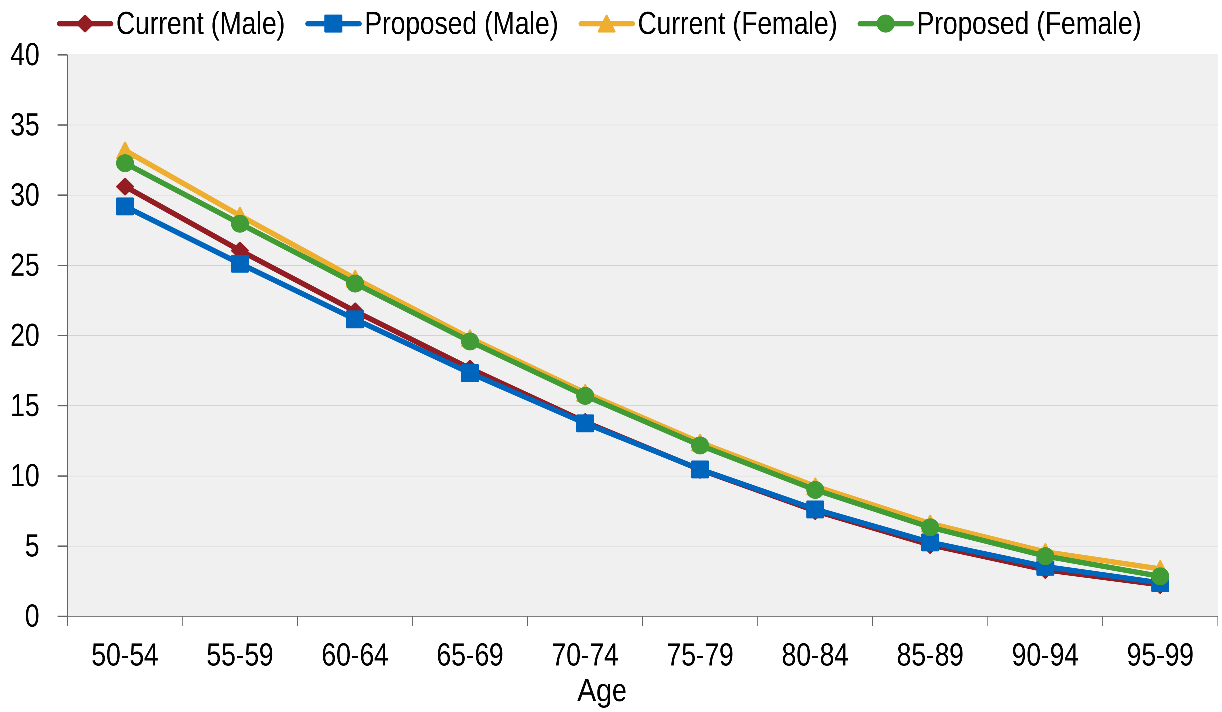


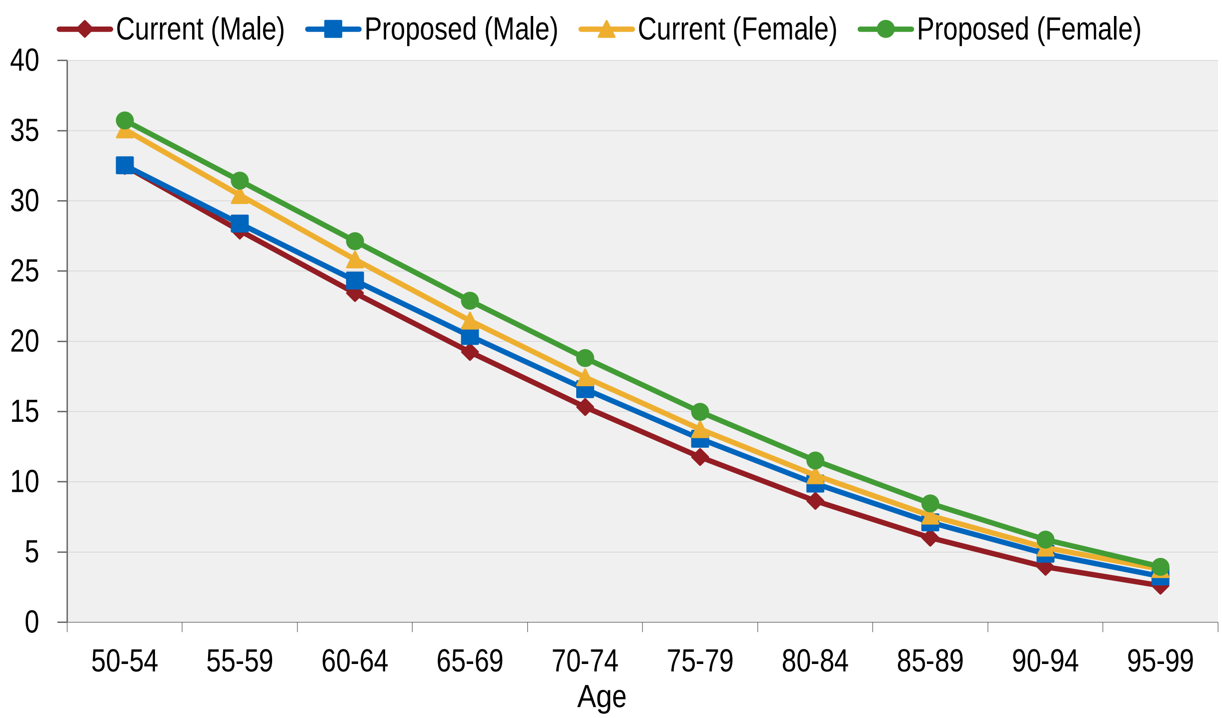

**CHART 16: POST-RETIREMENT DEATHS**
**NON – DISABLED SAFETY MEMBERS**
**(JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)**



## CHART 17: LIFE EXPECTANCIES
## NON – DISABLED GENERAL MEMBERS AND BENEFICIARIES




## CHART 18: LIFE EXPECTANCIES
## NON – DISABLED SAFETY MEMBERS



## C. Mortality Rates - Disabled

Since mortality rates for disabled members can vary from those of healthy members, a different mortality assumption is often used. For General members, the table currently being used is the RP-2000 Combined Healthy Mortality Table, projected with scale BB to 2020, set forward six years for males and set forward three years for females. For Safety members, the table currently being used is the RP-2000 Combined Healthy Mortality Table, projected with scale BB to 2020.

The number of actual deaths compared to the number expected under the current and proposed assumption for the last nine years are as provided in the table below.

| | General - Disabled | | | Safety - Disabled | | |
|---|---|---|---|---|---|---|
| **Gender** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** | **Current Expected Deaths** | **Actual Deaths** | **Proposed Expected Deaths** |
| Male | 124 | 122 | 121 | 37 | 52 | 48 |
| Female | 73 | 93 | 97 | 3 | 1 | 5 |
| **Total** | **197** | **215** | **218** | **40** | **53** | **53** |
| Actual / Expected | 109% | | 99% | 132% | | 100% |

Based on the actual experience from the last nine years, we recommend changing the mortality table for General disabled members to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) set forward five years. This will bring the current actual to expected ratio to 99%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

Likewise, based on the actual experience, we recommend changing the mortality table for Safety disabled members to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females). This will bring the current actual to expected ratio to 100%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

Chart 19 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last nine years. Experience shows that there were more deaths than predicted by the current table.

Chart 20 has the same comparison for Safety members. Experience shows that there were more deaths than predicted by the current table.

Chart 21 shows the life expectancies under both the current and proposed tables for General members.

Chart 22 shows the same information for Safety members.

**CHART 19: POST-RETIREMENT DEATHS
DISABLED GENERAL MEMBERS**

**(JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)**

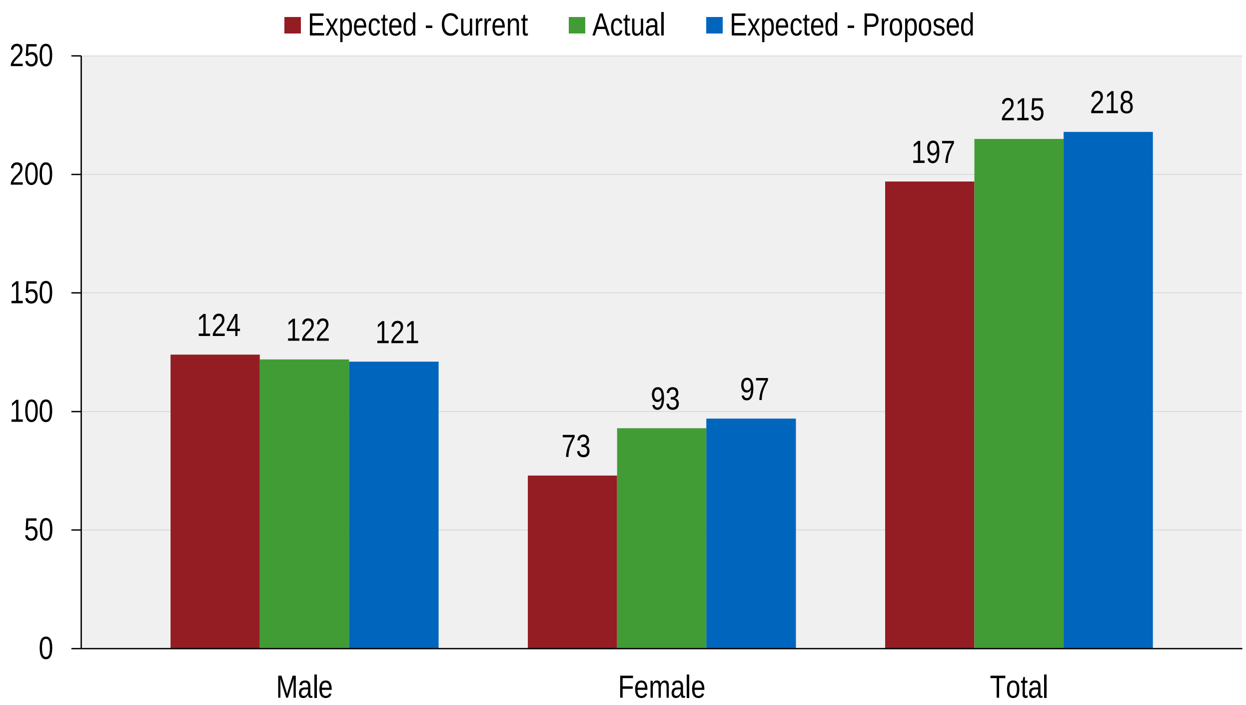
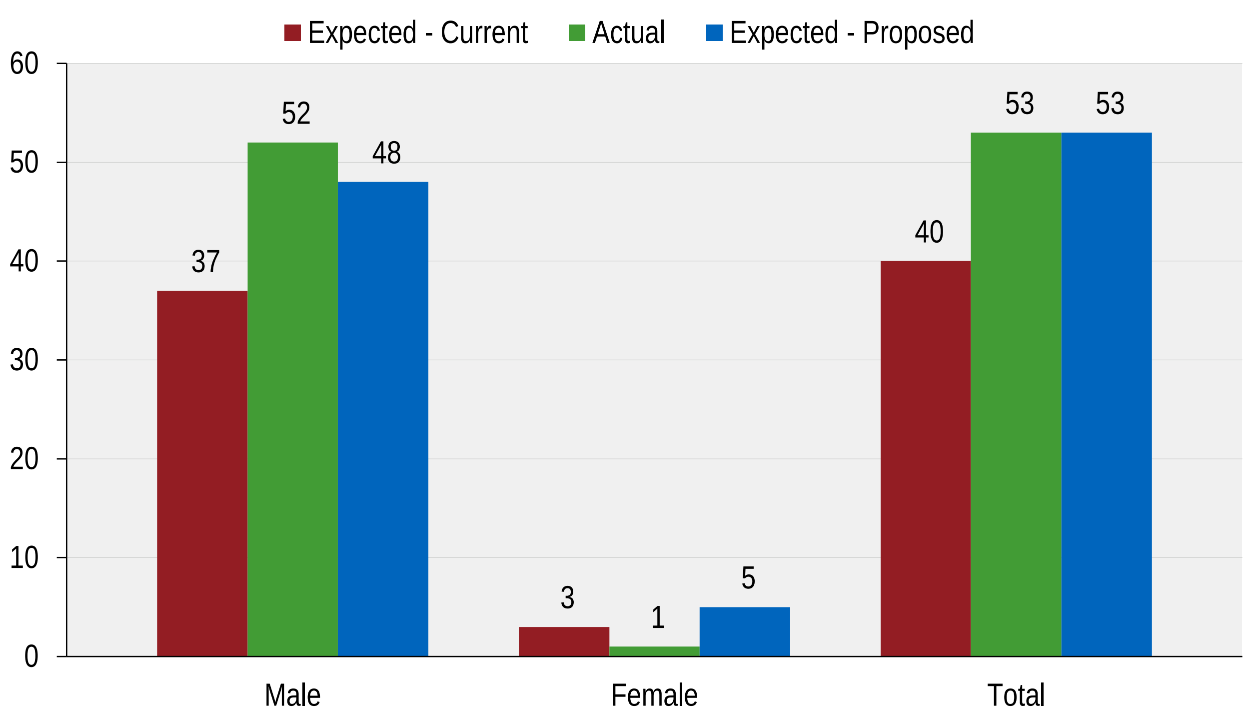
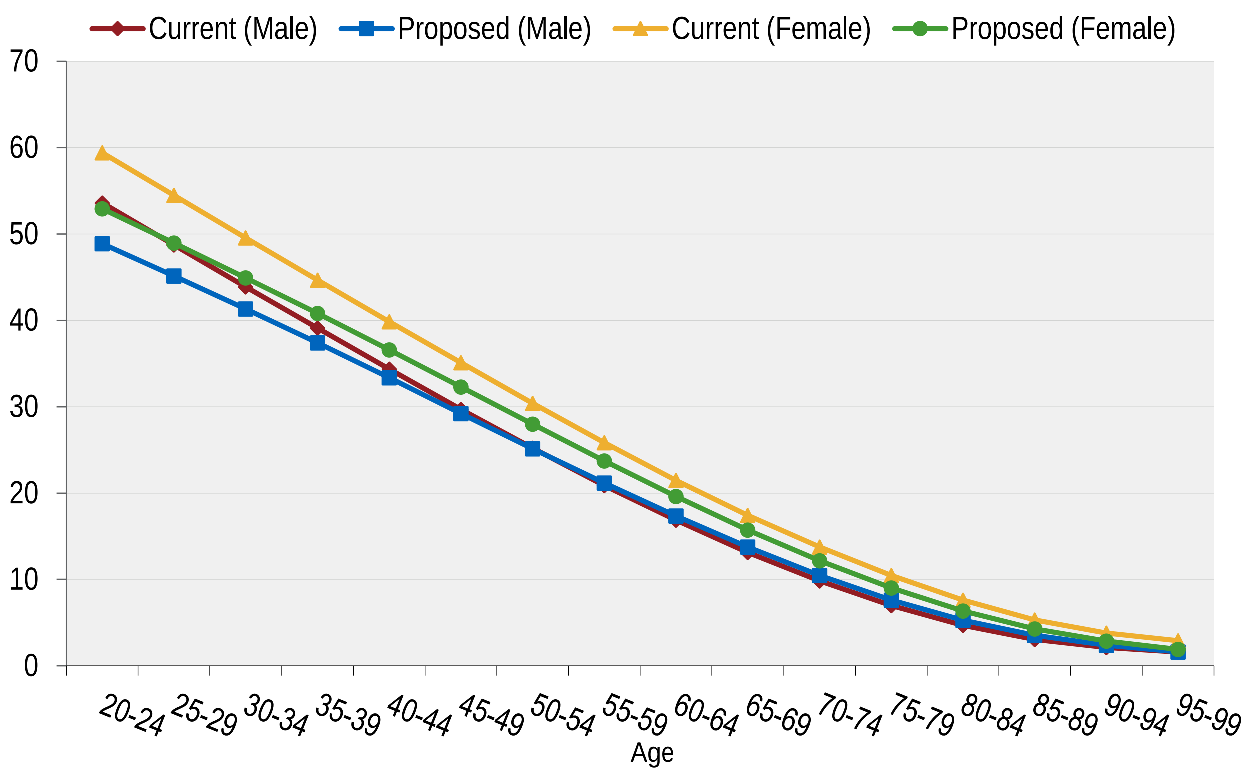



**CHART 20: POST-RETIREMENT DEATHS
DISABLED SAFETY MEMBERS**

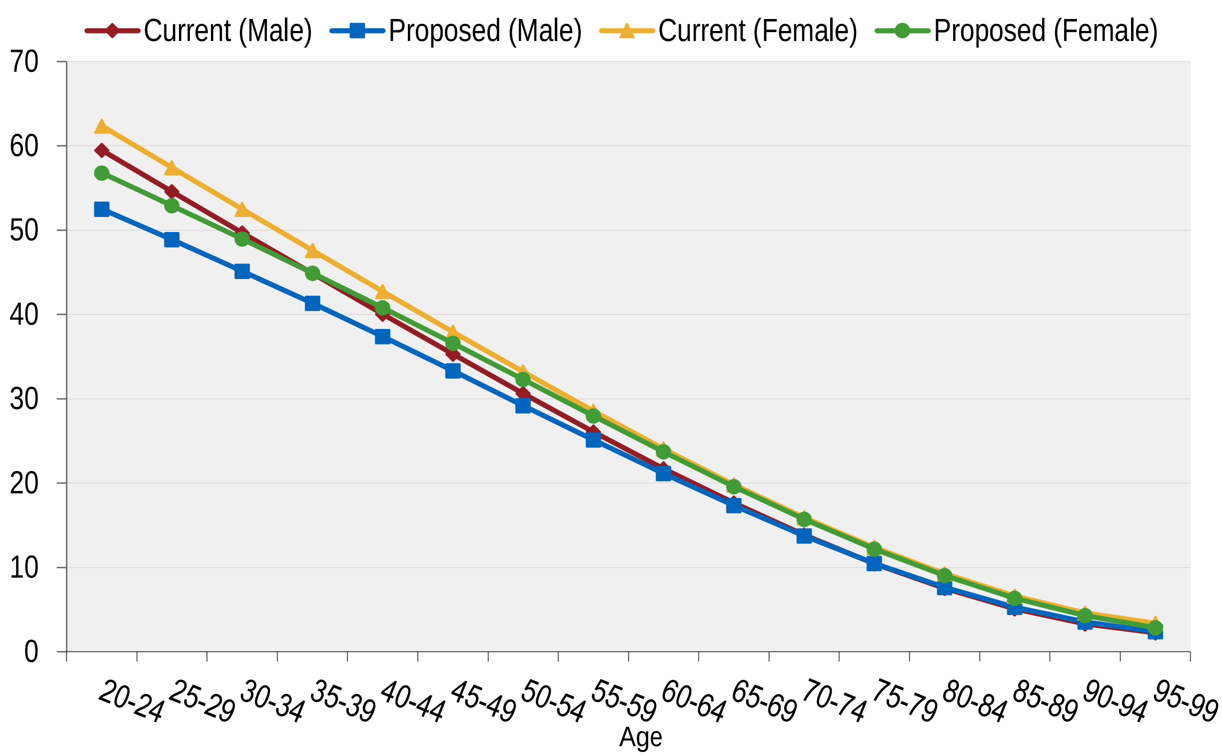
**(JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)**



## CHART 21: LIFE EXPECTANCIES
## DISABLED GENERAL MEMBERS




## CHART 22: LIFE EXPECTANCIES
## DISABLED SAFETY MEMBERS



## D. Termination Rates

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions there is an overall incidence of termination assumed, combined with assumptions, based on the plan membership and years of service. There is also another set of assumptions to anticipate the percentage of members who will withdraw their contributions and members who will leave their contributions on deposit and receive a deferred vested benefit.

We have developed rates for the following four groups: (1) General All Other, (2) General OCTA, (3) Safety Law Enforcement and Fire and (4) Safety Probation. The termination experience over the last three years is shown by years of service in the following tables. We also show the current and proposed assumptions.

| | Termination Rate (%) | | | | | |
|---|---|---|---|---|---|---|
| | General All Other | | | General OCTA | | |
| Years of Service | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| Less than 1 | 11.00 | 11.13 | 11.00 | 17.50 | 18.29 | 17.50 |
| 1 | 8.00 | 6.93 | 7.50 | 13.50 | 7.73 | 11.00 |
| 2 | 7.00 | 6.17 | 6.50 | 10.50 | 6.63 | 9.00 |
| 3 | 5.00 | 5.05 | 5.00 | 10.00 | 3.96 | 8.50 |
| 4 | 4.00 | 6.26 | 4.50 | 9.00 | 1.69 | 7.50 |
| 5 | 3.75 | 5.70 | 4.25 | 7.00 | 10.00 | 7.00 |
| 6 | 3.50 | 4.25 | 3.75 | 5.00 | 2.33 | 4.50 |
| 7 | 3.00 | 3.62 | 3.25 | 5.00 | 2.48 | 4.00 |
| 8 | 2.75 | 3.51 | 3.00 | 4.00 | 2.91 | 3.50 |
| 9 | 2.50 | 2.87 | 2.75 | 3.50 | 2.50 | 3.00 |
| 10 | 2.25 | 2.56 | 2.50 | 3.50 | 2.83 | 3.00 |
| 11 | 2.00 | 2.00 | 2.00 | 3.50 | 1.37 | 3.00 |
| 12 | 2.00 | 1.79 | 2.00 | 3.00 | 3.57 | 3.00 |
| 13 | 1.75 | 1.94 | 1.75 | 3.00 | 0.76 | 2.50 |
| 14 | 1.75 | 1.01 | 1.50 | 3.00 | 2.42 | 2.50 |
| 15 | 1.75 | 1.27 | 1.40 | 3.00 | 2.82 | 2.50 |
| 16 | 1.50 | 0.95 | 1.30 | 3.00 | 0.00 | 2.00 |
| 17 | 1.50 | 1.00 | 1.20 | 2.75 | 1.04 | 1.80 |
| 18 | 1.50 | 0.67 | 1.10 | 2.75 | 2.86 | 1.60 |
| 19 | 1.50 | 0.75 | 1.00 | 2.75 | 1.79 | 1.40 |
| 20 or more | 1.25 | 0.41 | 0.90 | 1.75 | 0.63 | 1.20 |

| | Termination Rate (%) | | | | | |
|---|---|---|---|---|---|---|
| | Safety Law and Fire | | | Safety Probation | | |
| Years of Service | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| Less than 1 | 4.00 | 6.28 | 4.50 | 16.00 | 10.00 | 14.00 |
| 1 | 3.00 | 1.06 | 2.50 | 13.00 | 15.15 | 13.00 |
| 2 | 2.00 | 1.83 | 2.00 | 10.00 | 10.00 | 10.00 |
| 3 | 1.00 | 2.67 | 1.50 | 6.00 | 0.00 | 5.00 |
| 4 | 1.00 | 1.52 | 1.25 | 4.00 | 0.00 | 4.00 |
| 5 | 1.00 | 0.00 | 1.00 | 3.50 | 10.00 | 3.50 |
| 6 | 0.95 | 1.83 | 0.95 | 3.00 | 0.00 | 2.75 |
| 7 | 0.90 | 0.24 | 0.90 | 2.50 | 0.91 | 2.00 |
| 8 | 0.85 | 0.23 | 0.85 | 2.25 | 1.83 | 2.00 |
| 9 | 0.80 | 0.86 | 0.80 | 2.00 | 0.00 | 1.75 |
| 10 | 0.75 | 1.20 | 0.75 | 1.75 | 2.83 | 1.75 |
| 11 | 0.65 | 1.36 | 0.65 | 1.75 | 0.00 | 1.50 |
| 12 | 0.60 | 0.88 | 0.60 | 1.50 | 0.54 | 1.25 |
| 13 | 0.50 | 0.00 | 0.55 | 1.25 | 0.50 | 1.00 |
| 14 | 0.50 | 0.32 | 0.50 | 1.00 | 0.56 | 0.75 |
| 15 | 0.50 | 0.00 | 0.45 | 1.00 | 1.26 | 0.75 |
| 16 | 0.50 | 0.00 | 0.40 | 1.00 | 0.00 | 0.75 |
| 17 | 0.50 | 0.67 | 0.35 | 0.50 | 0.00 | 0.25 |
| 18 | 0.50 | 0.00 | 0.30 | 0.50 | 0.00 | 0.25 |
| 19 | 0.50 | 0.00 | 0.25 | 0.50 | 0.00 | 0.25 |
| 20 or more | 0.25 | 0.08 | 0.20 | 0.50 | 0.00 | 0.25 |

Chart 23 compares actual to expected terminations over the past three years for both the current and proposed assumptions for General All Other, General OCTA, Safety Law Enforcement and Fire and Safety Probation members.

Chart 24 shows the actual termination rates over the past three years compared to the current and proposed assumptions for General All Other members.

Chart 25-27 shows the same information as Chart 24, but for General OCTA, Safety Law and Fire and Safety Probation members.

Based upon the recent experience, we have decreased the termination rates overall for General All Other members, General OCTA members, Safety Law and Fire members and Safety Probation members.

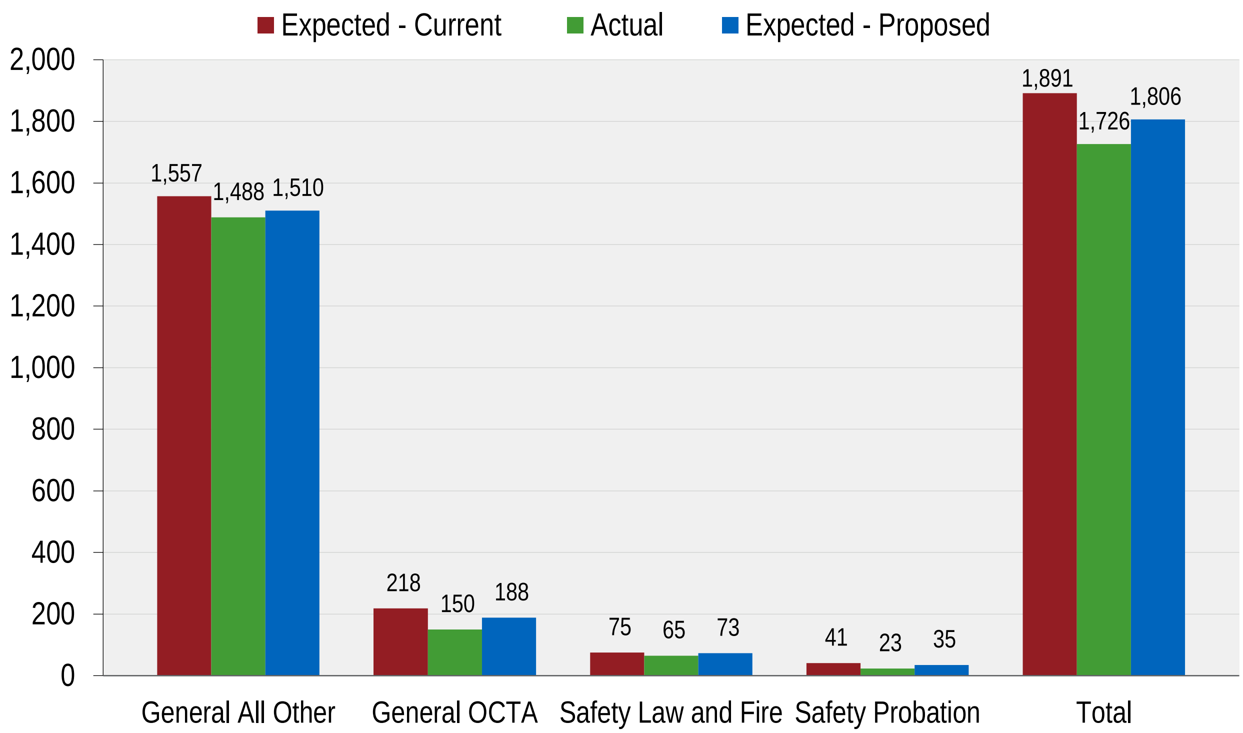
The following table shows the currently assumed, actual and proposed assumed percentages for members who withdraw their contributions. In the past, for the four membership categories just discussed, there was a separate assumption for members with fewer than five years of service versus those with five or more years of service. Based on the experience observed during the past three years, we are recommending a more detailed assumption for members with five or more years of service. The assumed percentages for members who leave their contributions on deposit and receive a deferred vested benefit is equal to 100% minus the percentage of those assumed to withdraw.

| | Election for Withdrawal of Contributions | | | | | |
|---|---|---|---|---|---|---|
| | General All Other | | | General OCTA | | |
| Years of Service | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| 0-4 | 40% | 25% | 35% | 45% | 33% | 40% |
| 5-9 | 25% | 31% | 30% | 35% | 33% | 35% |
| 10-14 | 25% | 27% | 25% | 35% | 28% | 30% |
| 15 or more | 25% | 18% | 20% | 35% | 13% | 20% |

| | Election for Withdrawal of Contributions | | | | | |
|---|---|---|---|---|---|---|
| | Safety Law and Fire | | | Safety Probation | | |
| Years of Service | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| 0-4 | 20% | 12% | 20% | 40% | 20% | 25% |
| 5-9 | 20% | 55% | 20% | 30% | 0% | 25% |
| 10-14 | 20% | 11% | 20% | 30% | 0% | 25% |
| 15 or more | 20% | 25% | 20% | 30% | 50% | 25% |

## CHART 23: ACTUAL NUMBER OF TERMINATIONS COMPARED TO EXPECTED

## (JANUARY 1, 2014 THROUGH DECEMBER 31, 2016)




## CHART 24: TERMINATION RATES GENERAL ALL OTHER MEMBERS

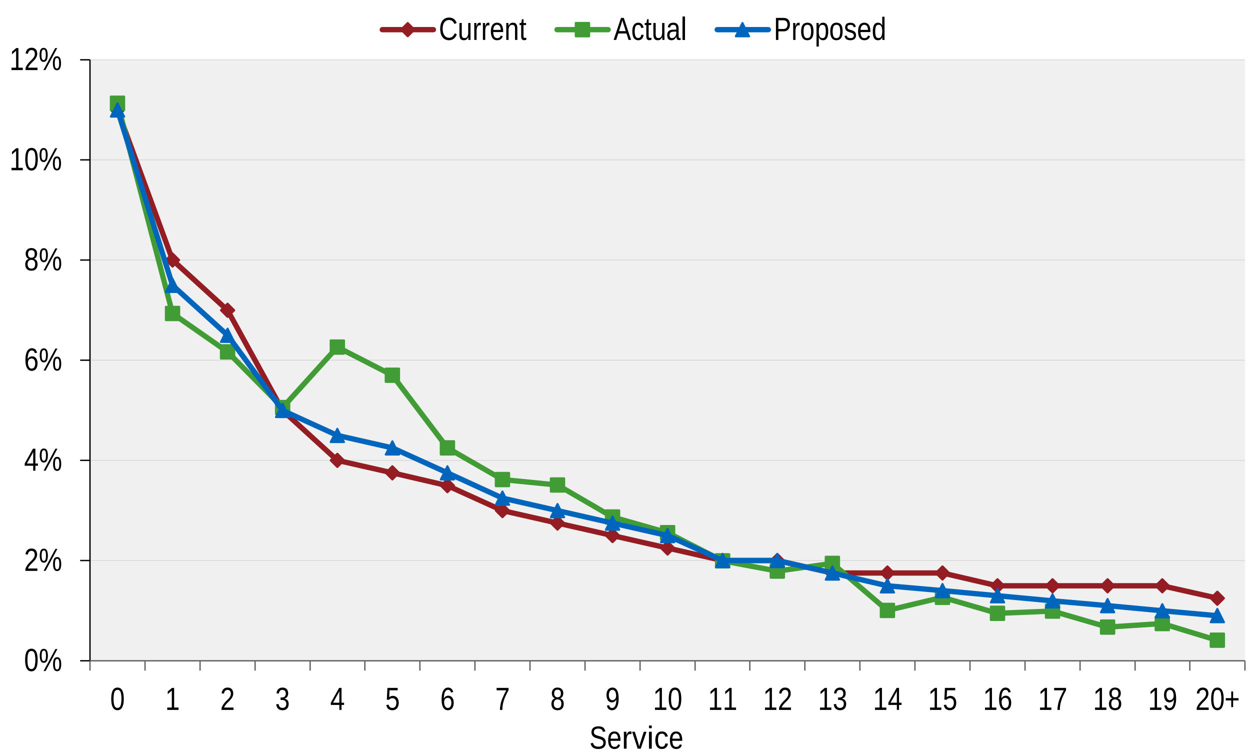


**CHART 25: TERMINATION RATES**
**GENERAL OCTA MEMBERS**

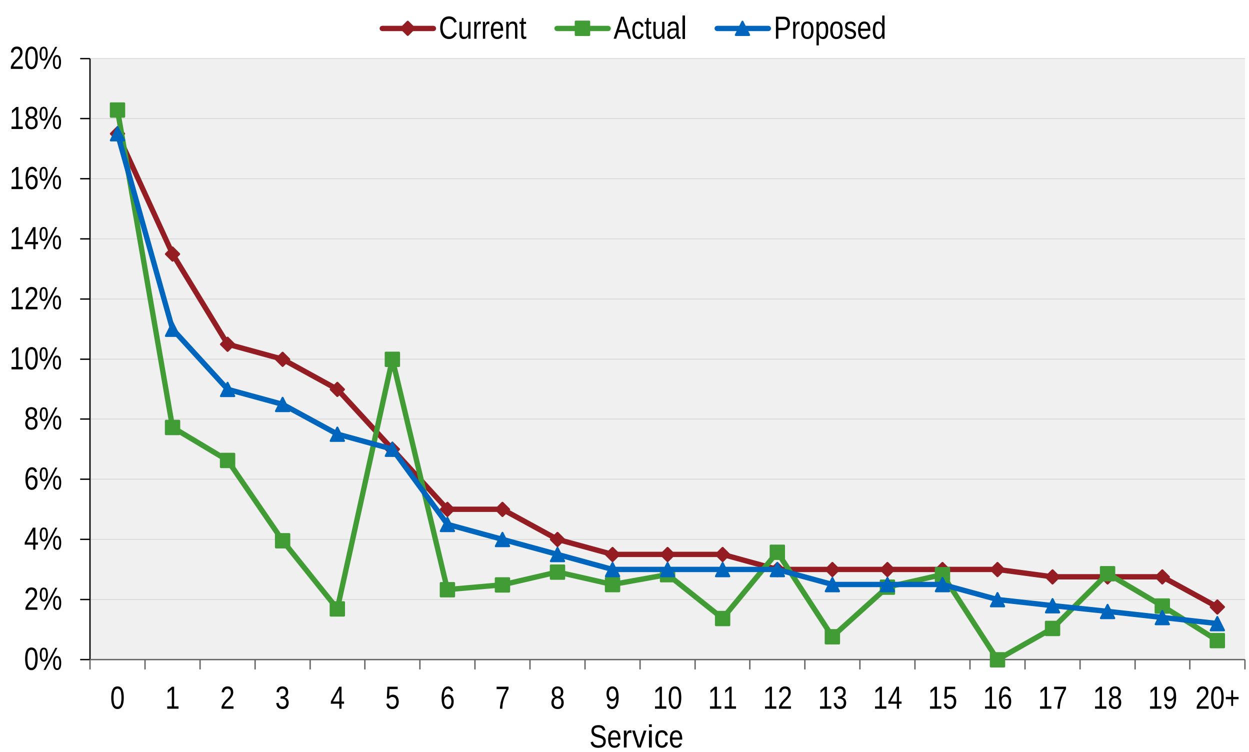
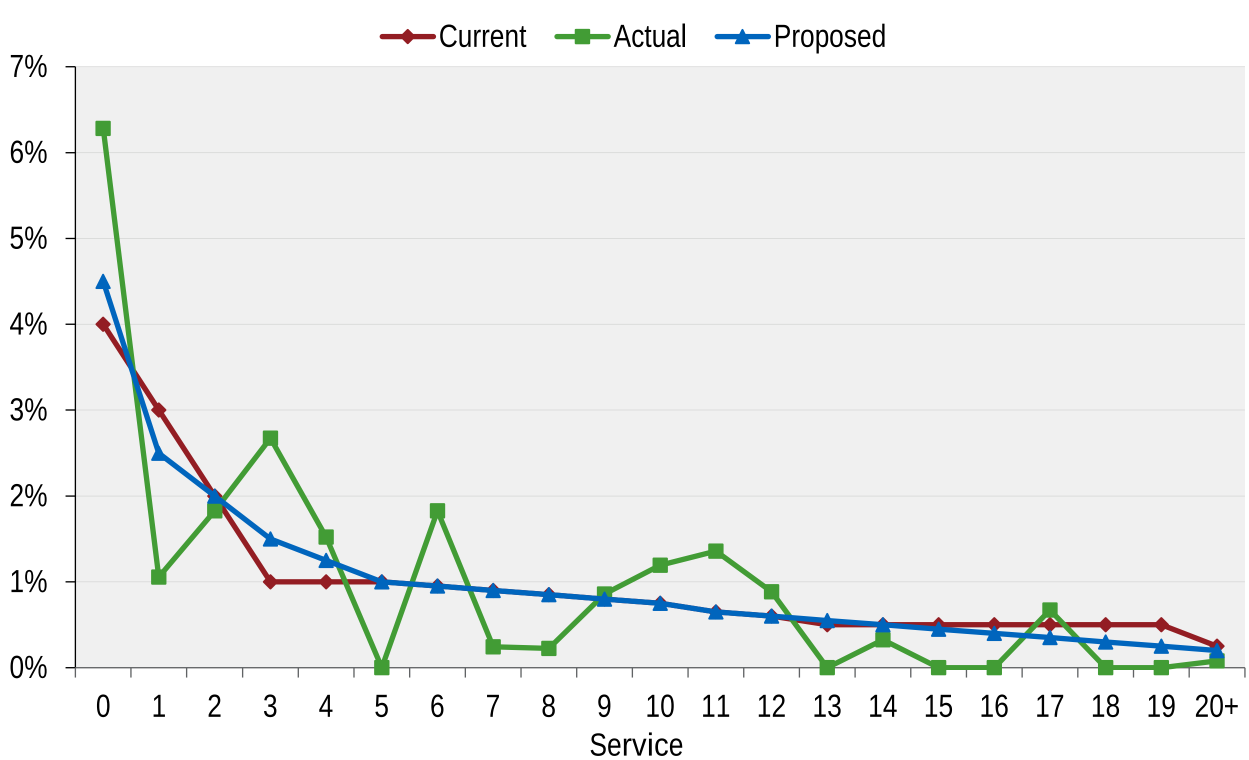
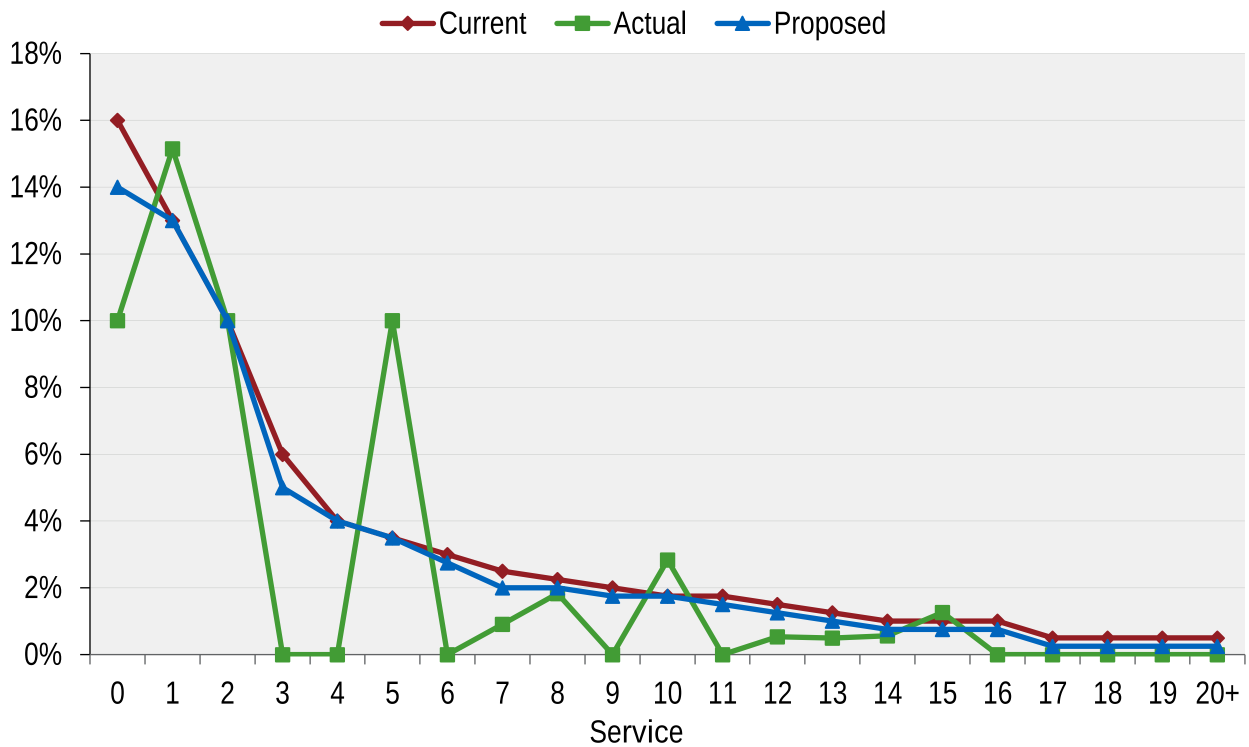



**CHART 26: TERMINATION RATES**
**SAFETY LAW AND FIRE MEMBERS**



## CHART 27: TERMINATION RATES
## SAFETY PROBATION MEMBERS



## E. Disability Incidence Rates

When a member becomes disabled, he or she may be entitled to at least a 50% pension (service connected disability), or a pension that depends upon the member's years of service (non-service connected disability). The following summarizes the actual incidence of combined service and non-service connected disabilities over the past three years compared to the current and proposed assumptions for both service connected and non-service connected disability incidence:

| | Disability Incidence Rate (%) | | | | | |
|---|---|---|---|---|---|---|
| | General All Other | | | General OCTA | | |
| Age | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| 20 – 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 – 29 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 – 34 | 0.01 | 0.00 | 0.01 | 0.05 | 0.00 | 0.05 |
| 35 – 39 | 0.05 | 0.05 | 0.05 | 0.30 | 0.00 | 0.30 |
| 40 – 44 | 0.10 | 0.09 | 0.10 | 0.40 | 0.00 | 0.40 |
| 45 – 49 | 0.12 | 0.16 | 0.15 | 0.45 | 0.91 | 0.45 |
| 50 – 54 | 0.15 | 0.19 | 0.20 | 0.50 | 0.24 | 0.50 |
| 55 – 59 | 0.20 | 0.37 | 0.25 | 0.90 | 0.72 | 0.75 |
| 60 – 64 | 0.35 | 0.28 | 0.35 | 1.75 | 1.54 | 1.60 |
| 65 – 69 | 0.35 | 0.24 | 0.35 | 1.75 | 0.53 | 1.60 |

| | Disability Incidence Rate (%) | | | | | |
|---|---|---|---|---|---|---|
| | Safety Law and Fire | | | Safety Probation | | |
| Age | Current Rate | Actual Rate | Proposed Rate | Current Rate | Actual Rate | Proposed Rate |
| 20 – 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 – 29 | 0.02 | 0.00 | 0.02 | 0.05 | 0.00 | 0.05 |
| 30 – 34 | 0.05 | 0.00 | 0.05 | 0.10 | 0.00 | 0.10 |
| 35 – 39 | 0.20 | 0.15 | 0.20 | 0.10 | 0.16 | 0.10 |
| 40 – 44 | 0.30 | 0.07 | 0.25 | 0.10 | 0.48 | 0.15 |
| 45 – 49 | 0.50 | 0.49 | 0.50 | 0.20 | 0.65 | 0.25 |
| 50 – 54 | 1.20 | 1.98 | 1.50 | 0.20 | 0.40 | 0.30 |
| 55 – 59 | 2.50 | 3.70 | 3.00 | 0.25 | 0.67 | 0.50 |
| 60 – 64 | 7.00 | 5.45 | 6.00 | 0.00 | 0.00 | 0.00 |
| 65 – 69 | 0.00 | 7.32 | 7.00 | 0.00 | 0.00 | 0.00 |

Chart 28 compares the actual number of service connected and non-service connected disabilities over the past three years to that expected under both the current and proposed assumptions. The proposed disability rates were adjusted to reflect the past three years experience.

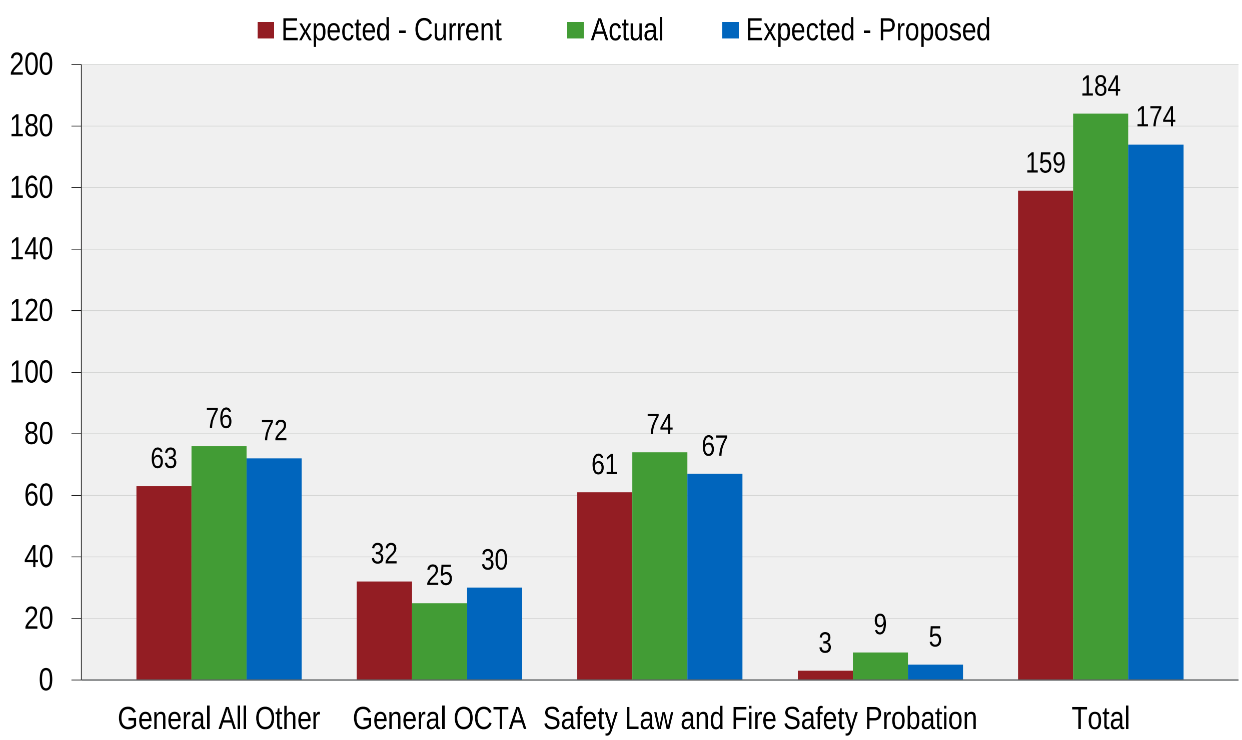
Chart 29 shows actual disablement rates, compared to the assumed and proposed rates for General All Other members. Charts 30-32 graph the same information as Chart 29, but for General OCTA, Safety Law and Fire and Safety Probation members.

The following table shows the currently assumed, actual and proposed assumed percentages for service versus non-service connected disability for the groups.

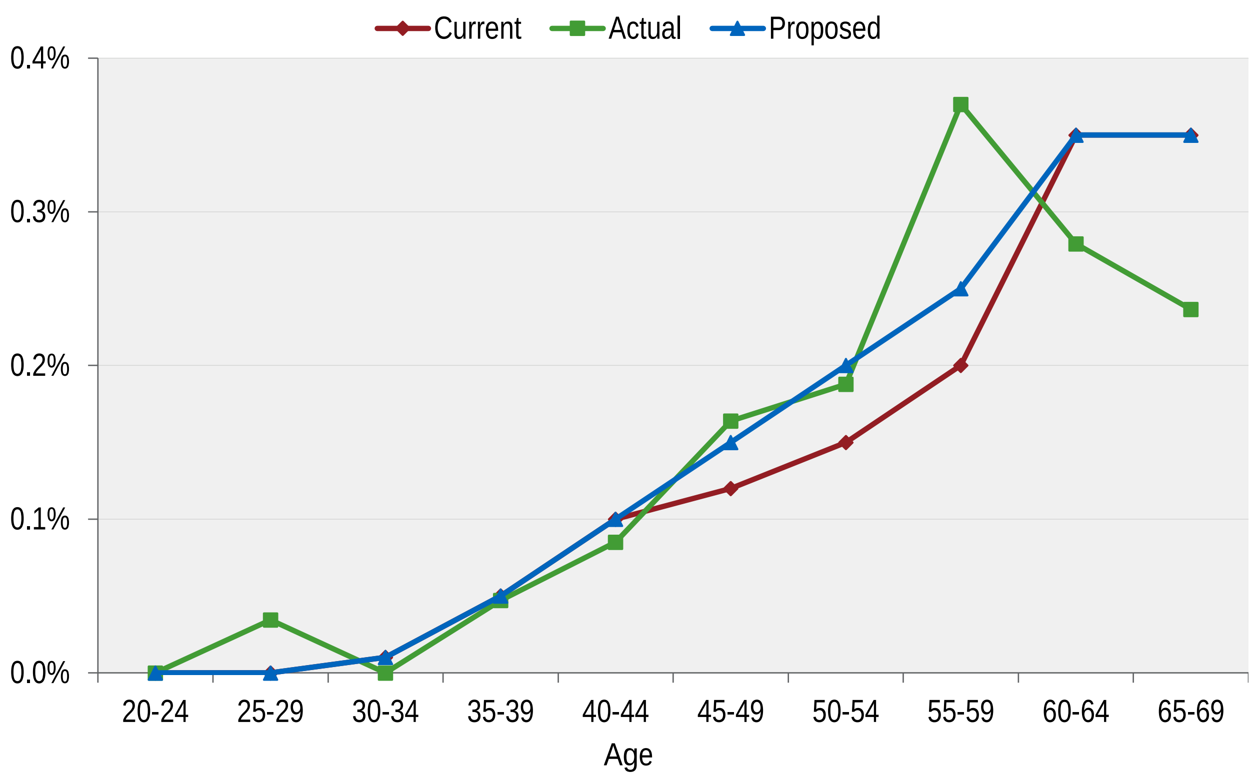
| | Service vs. Non-Service Connected Disability | | | |
|---|---|---|---|---|
| | Disablements Receiving Service Connected Disability | | | Disablements Receiving Non-Service Connected Disability |
| | Current Assumption | Actual Percentage | Proposed Assumption | Proposed Assumption |
| **General All Other** | 55% | 61% | 60% | 40% |
| **General OCTA** | 65% | 68% | 65% | 35% |
| **Safety Law and Fire** | 100% | 100% | 100% | 0% |
| **Safety Probation** | 100% | 67% | 75% | 25% |

## CHART 28: ACTUAL NUMBER OF DISABILITIES COMPARED TO EXPECTED

## (JANUARY 1, 2014 THROUGH DECEMBER 31, 2016)



## CHART 29: DISABILITY INCIDENCE RATES
## GENERAL ALL OTHER MEMBERS




## CHART 30: DISABILITY INCIDENCE RATES
## GENERAL OCTA MEMBERS

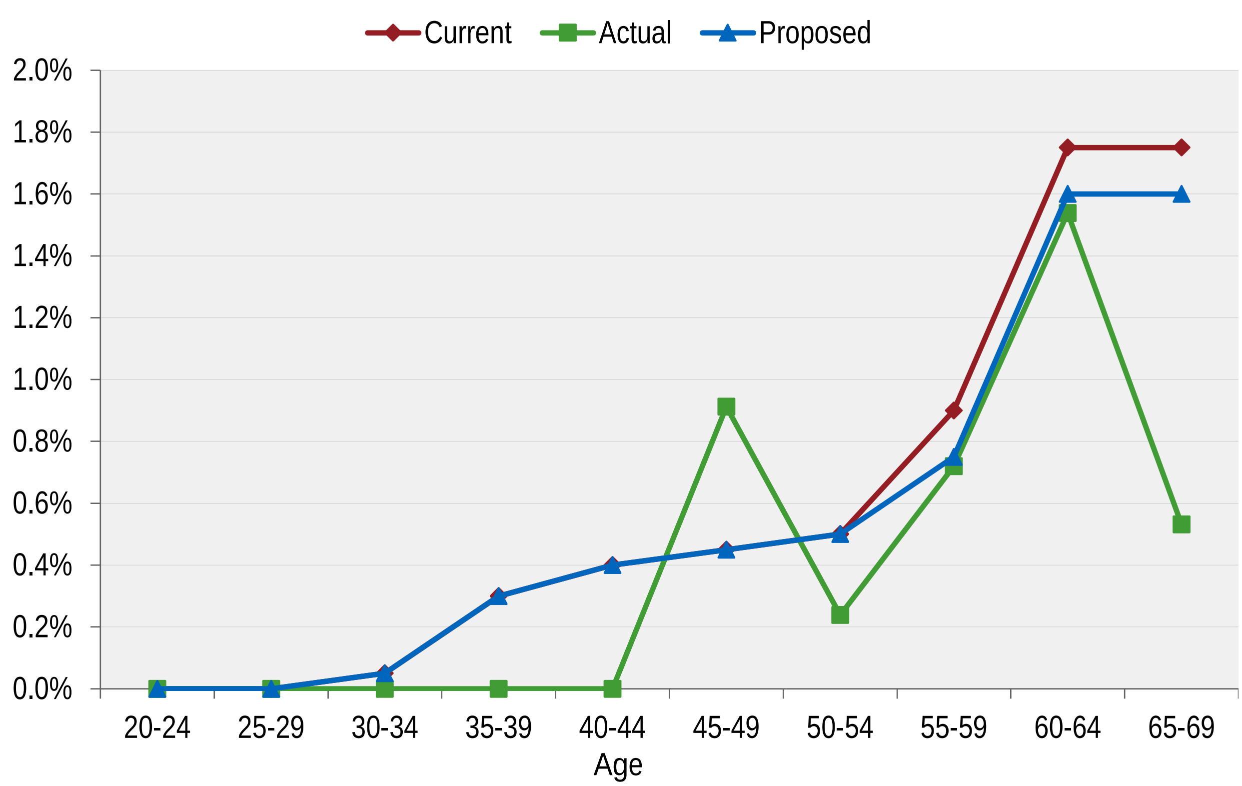


**CHART 31: DISABILITY INCIDENCE RATES**
**SAFETY LAW AND FIRE MEMBERS**

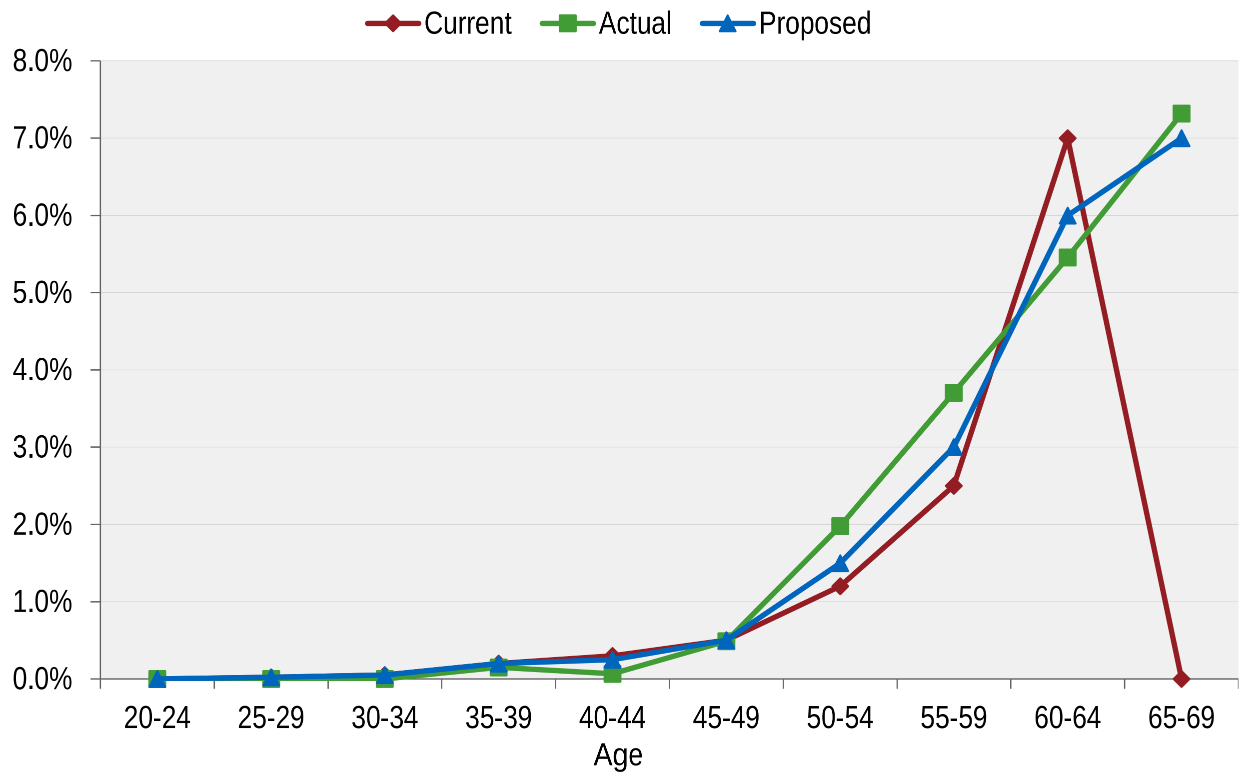
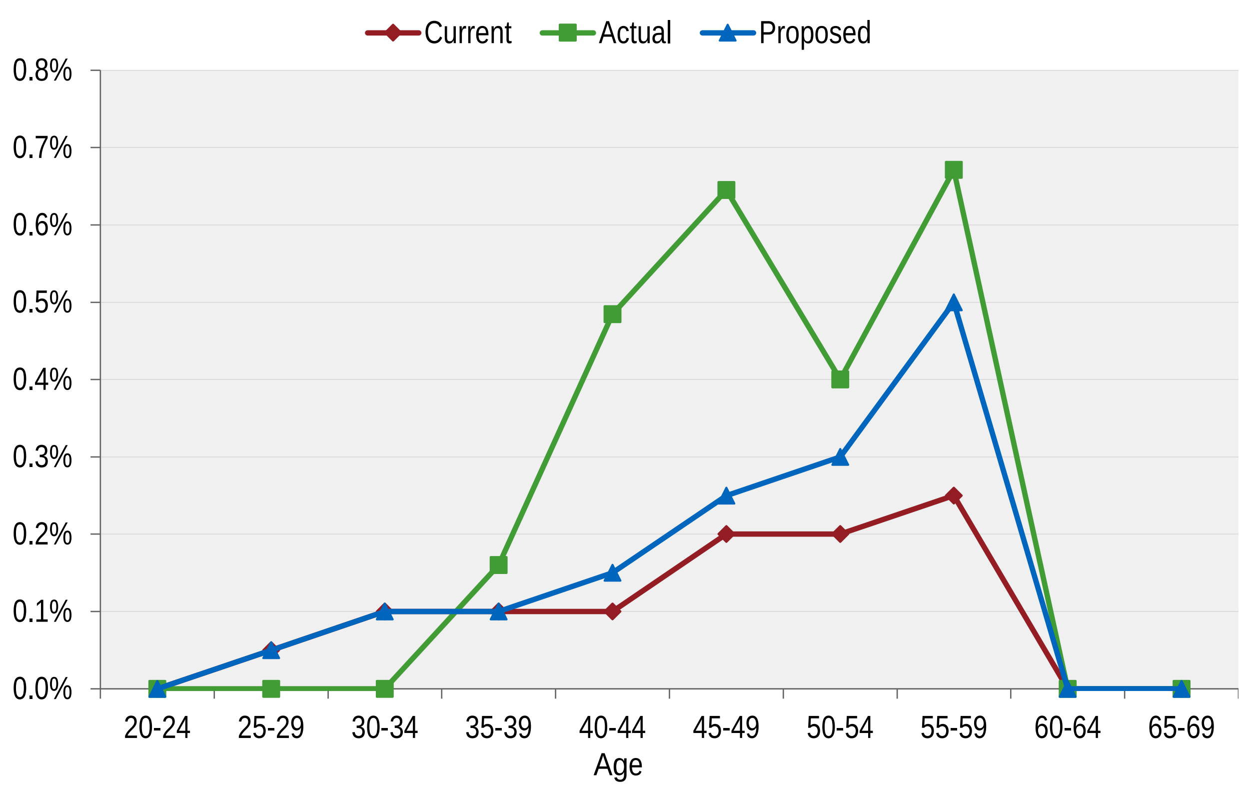



**CHART 32: DISABILITY INCIDENCE RATES**
**SAFETY PROBATION MEMBERS**



## F. Additional Cashouts

In response to the California Court ruling in the Ventura cases, several additional pay elements were included as Earnable Compensation.[22] These additional pay elements fall into two categories:

- Ongoing Pay Elements – Those that are expected to be received relatively uniformly over a member's employment years; and
- Terminal Pay Elements – Those that are expected to be received only during the member's final average earnings pay period.

The first category is recognized in the actuarial calculations by virtue of being included in the current pay of active members. The second category requires a separate actuarial assumption to anticipate its impact on a member's retirement benefit.

In this study, we have been provided with final average salaries determined by OCERS before ("FAS – Base")[23] as well as after ("FAS – Final")[24] including the terminal pay elements for members who retired during the last three years. We have studied the impact of including these pay elements by taking the ratio of "FAS – Final" to "FAS – Base". Members covered under CalPEPRA plans are not eligible to receive leave cashouts.

The current and recommended additional cashout assumptions are provided in the following table:

| | Final One Year Salary | | | Final Three Year Salary | | |
|---|---|---|---|---|---|---|
| **Membership** | **Current Assumption** | **Actual Rate** | **Proposed Assumption** | **Current Assumption** | **Actual Rate** | **Proposed Assumption** |
| General Members | 3.50% | 2.46% | 3.00% | 2.80% | 2.85% | 2.80% |
| Safety Probation | 3.80% | 5.98% | 3.80% | 2.80% | 3.43% | 3.40% |
| Safety Law Enforcement | 5.20% | 6.63% | 5.20% | 4.70% | 4.59% | 4.60% |
| Safety Fire | 2.00% | 0.00% | 2.00% | 2.00% | 1.65% | 1.70% |

Note that we have maintained the current cashout assumptions for Safety members from "Final One Year Salary" plans due to the low level of actual experience that we observed during the last three years.

[22] We understand that these amounts would only be applicable for legacy members enrolled in the non-CalPEPRA plans.

[23] Per OCERS, this is calculated by the System using base earnable salary plus those reported pensionable pay items (regularly included in the annual actuarial valuation) based on the highest system-calculated FAS period.

[24] Per OCERS, this is equal to "FAS – Base" plus all eligible pensionable pay items that had not been formerly transmitted to OCERS from the employer.

# V. Cost Impact

The tables below show the changes in the average employer and member contribution rates due to the recommended and alternative assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

| Cost Impact of Recommended Assumptions | | |
|---|---|---|
| **Change in Costs** | **Contribution Rate** | **Estimated Annual Dollar Amount in Thousands*** |
| Total Normal Cost | 3.68% | $65,260 |
| Member Normal Cost | 1.61% | $28,559 |
| Employer Normal Cost | 2.07% | $36,701 |
| Employer UAAL Payments | 5.87% | $103,710 |
| Total for Employer | 7.94% | $140,411 |

* *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

| Cost Impact of Alternative 1 Assumptions (7.00% Investment Return Assumption & 2.75% Inflation) | | |
|---|---|---|
| **Change in Costs** | **Contribution Rate** | **Estimated Annual Dollar Amount in Thousands*** |
| Total Normal Cost | 1.88% | $32,321 |
| Member Normal Cost | 0.77% | $13,232 |
| Employer Normal Cost | 1.11% | $19,089 |
| Employer UAAL Payments | 3.53% | $61,450 |
| Total for Employer | 4.64% | $80,539 |

* *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

| Cost Impact of Alternative 2 Assumptions (6.75% Investment Return Assumption & 2.75% Inflation) | | |
|---|---|---|
| **Change in Costs** | **Contribution Rate** | **Estimated Annual Dollar Amount in Thousands*** |
| Total Normal Cost | 3.77% | $65,566 |
| Member Normal Cost | 1.59% | $27,567 |
| Employer Normal Cost | 2.18% | $37,999 |
| Employer UAAL Payments | 5.84% | $102,078 |
| Total for Employer | 8.02% | $140,077 |

* *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

The breakdown of the contribution impacts due only to the recommended demographic assumption changes (as recommended in Section IV of this report) and the contribution rate impacts (after implementing the demographic assumption changes) due to the recommended and alternative economic assumption changes (as recommended in Section III of this report), as well as the changes in funded status, are summarized in the following table.

| Cost Impact | | | |
|---|---|---|---|
| | **Recommended (7.00% Return & 3.00% Inflation)** | **Alternative 1 (7.00% Return & 2.75% Inflation)** | **Alternative 2 (6.75% Return & 2.75% Inflation)** |
| **Impact on Employer** | | | |
| Change due to demographic assumptions | 3.94% | 3.94% | 3.94% |
| Change due to economic assumptions | 4.00% | 0.70% | 4.08% |
| Total change in employer rate | 7.94% | 4.64% | 8.02% |
| Total estimated change in annual dollar amount ($000s) | $140,411 | $80,539 | $140,077 |
| **Impact on Member** | | | |
| Change due to demographic assumptions | 0.57% | 0.57% | 0.57% |
| Change due to economic assumptions | 1.04% | 0.20% | 1.02% |
| Total change in member rate | 1.61% | 0.77% | 1.59% |
| Total estimated change in annual dollar amount ($000s) | $28,559 | $13,232 | $27,567 |
| **Impact on UAAL and Funded Percentage** | | | |
| Change in UAAL | $1,404 million | $763 million | $1,385 million |
| Change in funded percentage | From 73.1% to 67.7% | From 73.1% to 70.1% | From 73.1% to 67.9% |

Considered separately, the changes in economic assumptions accounted for about one-half of the overall cost impact to the plan. Of the various economic assumption changes, the most significant cost impact is from the investment return assumption change. Of the various demographic assumption changes, the most significant cost impact is from the mortality assumption change.

We have also analyzed in the tables below the average employer and member contribution rate impacts by rate groups due to the recommended assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

| Increases in Employer Contribution Rates (% of Payroll) under Recommended Assumptions | | | | |
|---|---|---|---|---|
| **Rate Group** | **Normal Cost** | **UAAL** | **Total** | **Estimated Dollar Amounts[1] (in 000s)** |
| Rate Group #1 (non-OCTA, non-OCSD) | 1.87% | 3.49%[2] | 5.36% | $4,462 |
| Rate Group #2 (County et al.) | 1.92% | 5.50% | 7.42% | $79,640 |
| Rate Group #3 (OCSD) | 1.77% | 1.06%[3] | 2.83% | $1,865 |
| Rate Group #5 (OCTA) | 2.02% | 5.03% | 7.05% | $7,393 |
| Rate Group #9 (TCA) | 1.53% | 3.22% | 4.75% | $325 |
| Rate Group #10 (OCFA) | 1.90% | 4.42% | 6.32% | $1,698 |
| Rate Group #11 (Cemetery) | 1.77% | 2.71%[4] | 4.48% | $63 |
| Rate Group #12 (Law Library) | 1.60% | 4.39% | 5.99% | $71 |
| Rate Group #6 (Probation) | 3.20% | 9.16% | 12.36% | $8,054 |
| Rate Group #7 (Law Enforcement) | 2.67% | 9.45% | 12.12% | $26,599 |
| Rate Group #8 (Fire Authority) | 2.09% | 6.31% | 8.40% | $10,241 |
| **Total All Rate Groups Combined** | **2.07%** | **5.87%** | **7.94%** | **$140,411** |

(1) *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

(2) *Before adjusting for UAAL allotted to U.C.I and Department of Education.*

(3) *The UAAL for Rate Group #3 after reflecting the recommended assumptions has been partially offset by the OCSD UAAL Deferred Account of $34,067,000 as of December 31, 2016. If Rate Group #3 had not been overfunded prior to the changes in assumptions and if the OCSD UAAL Account was not available to offset the change in UAAL due to the changes in assumptions, the UAAL Contribution rate impact due to the changes in assumptions would have been 5.36% of payroll.*

(4) *If Rate Group #11 had not been overfunded prior to the changes in assumptions, the UAAL contribution rate impact due to the changes in assumptions would have been 4.36% of payroll.*

| Increases in Average Member Contribution Rates (% of Payroll) under Recommended Assumptions | | | | |
|---|---|---|---|---|
| **Rate Group** | **Current** | **Proposed** | **Difference** | **Estimated Dollar Amounts[1] (in 000s)** |
| Rate Group #1 (non-OCTA, non-OCSD) | 8.62% | 10.19% | 1.57% | $1,310 |
| Rate Group #2 (County et al.) | 11.10% | 12.58% | 1.48% | $15,943 |
| Rate Group #3 (OCSD) | 11.52% | 12.98% | 1.46% | $967 |
| Rate Group #5 (OCTA) | 9.35% | 10.71% | 1.36% | $1,434 |
| Rate Group #9 (TCA) | 10.08% | 11.43% | 1.35% | $93 |
| Rate Group #10 (OCFA) | 11.03% | 12.59% | 1.56% | $420 |
| Rate Group #11 (Cemetery) | 8.87% | 10.26% | 1.39% | $20 |
| Rate Group #12 (Law Library) | 13.06% | 14.49% | 1.43% | $17 |
| Rate Group #6 (Probation) | 15.53% | 17.81% | 2.28% | $1,486 |
| Rate Group #7 (Law Enforcement) | 16.39% | 18.46% | 2.07% | $4,540 |
| Rate Group #8 (Fire Authority) | 15.44% | 17.35% | 1.91% | $2,329 |
| **Total All Rate Groups Combined** | **12.01%** | **13.62%** | **1.61%** | **$28,559** |

(1) *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

We have also analyzed in the tables below the average employer and member contribution rate impacts by rate groups due to the Alternative 1 (7.00% investment return and 2.75% inflation) assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

| Increases in Employer Contribution Rates (% of Payroll) under Alternative 1 Assumptions | | | | |
|---|---|---|---|---|
| **Rate Group** | **Normal Cost** | **UAAL** | **Total** | **Estimated Dollar Amounts[1] (in 000s)** |
| Rate Group #1 (non-OCTA, non-OCSD) | 1.18% | 2.30%[2] | 3.48% | $2,866 |
| Rate Group #2 (County et al.) | 1.08% | 3.41% | 4.49% | $47,504 |
| Rate Group #3 (OCSD) | 0.97% | 0.00%[3] | 0.97% | $628 |
| Rate Group #5 (OCTA) | 1.37% | 3.22% | 4.59% | $4,756 |
| Rate Group #9 (TCA) | 0.88% | 1.96% | 2.84% | $191 |
| Rate Group #10 (OCFA) | 1.08% | 2.62% | 3.70% | $973 |
| Rate Group #11 (Cemetery) | 1.01% | 0.99%[4] | 2.00% | $28 |
| Rate Group #12 (Law Library) | 0.86% | 2.83% | 3.69% | $44 |
| Rate Group #6 (Probation) | 1.93% | 5.84% | 7.77% | $4,980 |
| Rate Group #7 (Law Enforcement) | 1.12% | 5.50% | 6.62% | $14,169 |
| Rate Group #8 (Fire Authority) | 0.63% | 3.10% | 3.73% | $4,400 |
| **Total All Rate Groups Combined** | **1.11%** | **3.53%** | **4.64%** | **$80,539** |

(1) *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

(2) *Before adjusting for UAAL allotted to U.C.I and Department of Education.*

(3) *The UAAL for Rate Group #3 after reflecting the recommended assumptions has been offset by the OCSD UAAL Deferred Account of $34,067,000 as of December 31, 2016. If Rate Group #3 had not been overfunded prior to the changes in assumptions and if the OCSD UAAL Account was not available to offset the change in UAAL due to the changes in assumptions, the UAAL Contribution rate impact due to the changes in assumptions would have been 2.81% of payroll.*

(4) *If Rate Group #11 had not been overfunded prior to the changes in assumptions, the UAAL contribution rate impact due to the changes in assumptions would have been 2.56% of payroll.*

| Increases in Average Member Contribution Rates (% of Payroll) under Alternative 1 Assumptions | | | | |
|---|---|---|---|---|
| **Rate Group** | **Current** | **Proposed** | **Difference** | **Estimated Dollar Amounts[1] (in 000s)** |
| Rate Group #1 (non-OCTA, non-OCSD) | 8.62% | 9.56% | 0.94% | $767 |
| Rate Group #2 (County et al.) | 11.10% | 11.85% | 0.75% | $7,864 |
| Rate Group #3 (OCSD) | 11.52% | 12.26% | 0.74% | $477 |
| Rate Group #5 (OCTA) | 9.35% | 10.11% | 0.76% | $784 |
| Rate Group #9 (TCA) | 10.08% | 10.79% | 0.71% | $48 |
| Rate Group #10 (OCFA) | 11.03% | 11.86% | 0.83% | $216 |
| Rate Group #11 (Cemetery) | 8.87% | 9.59% | 0.72% | $10 |
| Rate Group #12 (Law Library) | 13.06% | 13.79% | 0.73% | $9 |
| Rate Group #6 (Probation) | 15.53% | 16.53% | 1.00% | $627 |
| Rate Group #7 (Law Enforcement) | 16.39% | 17.16% | 0.77% | $1,598 |
| Rate Group #8 (Fire Authority) | 15.44% | 16.16% | 0.72% | $832 |
| **Total All Rate Groups Combined** | **12.01%** | **12.78%** | **0.77%** | **$13,232** |

(1) *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

We have also analyzed in the tables below the average employer and member contribution rate impacts by rate groups due to the Alternative 2 (6.75% investment return and 2.75% inflation) assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

| Increases in Employer Contribution Rates (% of Payroll) under Alternative 2 Assumptions | | | | |
|---|---|---|---|---|
| **Rate Group** | **Normal Cost** | **UAAL** | **Total** | **Estimated Dollar Amounts[(1)] (in 000s)** |
| Rate Group #1 (non-OCTA, non-OCSD) | 1.92% | 3.48%[(2)] | 5.40% | $4,460 |
| Rate Group #2 (County et al.) | 2.01% | 5.48% | 7.49% | $79,313 |
| Rate Group #3 (OCSD) | 1.84% | 1.00%[(3)] | 2.84% | $1,851 |
| Rate Group #5 (OCTA) | 2.12% | 4.99% | 7.11% | $7,372 |
| Rate Group #9 (TCA) | 1.65% | 3.26% | 4.91% | $332 |
| Rate Group #10 (OCFA) | 1.99% | 4.39% | 6.38% | $1,691 |
| Rate Group #11 (Cemetery) | 1.87% | 2.72%[(4)] | 4.59% | $64 |
| Rate Group #12 (Law Library) | 1.71% | 4.43% | 6.14% | $72 |
| Rate Group #6 (Probation) | 3.40% | 9.17% | 12.57% | $8,102 |
| Rate Group #7 (Law Enforcement) | 2.87% | 9.39% | 12.26% | $26,520 |
| Rate Group #8 (Fire Authority) | 2.32% | 6.27% | 8.59% | $10,300 |
| **Total All Rate Groups Combined** | **2.18%** | **5.84%** | **8.02%** | **$140,077** |

(1) *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

(2) *Before adjusting for UAAL allotted to U.C.I and Department of Education.*

(3) *The UAAL for Rate Group #3 after reflecting the recommended assumptions has been partially offset by the OCSD UAAL Deferred Account of $34,067,000 as of December 31, 2016. If Rate Group #3 had not been overfunded prior to the changes in assumptions and if the OCSD UAAL Account was not available to offset the change in UAAL due to the changes in assumptions, the UAAL Contribution rate impact due to the changes in assumptions would have been 5.31% of payroll.*

(4) *If Rate Group #11 had not been overfunded prior to the changes in assumptions, the UAAL contribution rate impact due to the changes in assumptions would have been 4.38% of payroll.*

| Increases in Average Member Contribution Rates (% of Payroll) under Alternative 2 Assumptions | | | | |
|---|---|---|---|---|
| **Rate Group** | **Current** | **Proposed** | **Difference** | **Estimated Dollar Amounts[(1)] (in 000s)** |
| Rate Group #1 (non-OCTA, non-OCSD) | 8.62% | 10.20% | 1.58% | $1,298 |
| Rate Group #2 (County et al.) | 11.10% | 12.59% | 1.49% | $15,733 |
| Rate Group #3 (OCSD) | 11.52% | 13.00% | 1.48% | $960 |
| Rate Group #5 (OCTA) | 9.35% | 10.71% | 1.36% | $1,408 |
| Rate Group #9 (TCA) | 10.08% | 11.41% | 1.33% | $90 |
| Rate Group #10 (OCFA) | 11.03% | 12.59% | 1.56% | $412 |
| Rate Group #11 (Cemetery) | 8.87% | 10.24% | 1.37% | $19 |
| Rate Group #12 (Law Library) | 13.06% | 14.50% | 1.44% | $17 |
| Rate Group #6 (Probation) | 15.53% | 17.66% | 2.13% | $1,361 |
| Rate Group #7 (Law Enforcement) | 16.39% | 18.33% | 1.94% | $4,160 |
| Rate Group #8 (Fire Authority) | 15.44% | 17.21% | 1.77% | $2,109 |
| **Total All Rate Groups Combined** | **12.01%** | **13.60%** | **1.59%** | **$27,567** |

(1) *Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.*

# Appendix A: Current Actuarial Assumptions

## Economic Assumptions

| | |
|---|---|
| **Net Investment Return:** | 7.25%, net of investment expenses and administration expenses. |
| **Member Contribution Crediting Rate:** | 5.00%, compounded semi-annually. |
| **Consumer Price Index:** | Increase of 3.00% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year. |
| **Payroll Growth:** | Inflation of 3.00% per year plus "across the board" real salary increases of 0.50% per year. |
| **Increase in Section 7522.10 Compensation Limit:** | Increase of 3.00% per year from the valuation date. |

### Individual Salary Increases[1]

| Annual Rate of Compensation Increase (%)<br>Inflation: 3.00% 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 | 14.00 |
| 1 | 7.25 | 10.00 |
| 2 | 6.00 | 8.50 |
| 3 | 4.75 | 6.75 |
| 4 | 4.00 | 5.25 |
| 5 | 3.25 | 4.50 |
| 6 | 2.25 | 3.50 |
| 7 | 2.00 | 3.25 |
| 8 | 1.50 | 2.25 |
| 9 | 1.25 | 2.25 |
| 10 | 1.25 | 1.75 |
| 11 | 1.25 | 1.75 |
| 12 | 1.25 | 1.75 |
| 13 | 1.25 | 1.75 |
| 14 | 1.25 | 1.75 |
| 15 | 1.25 | 1.75 |
| 16 | 0.75 | 1.50 |
| 17 | 0.75 | 1.50 |
| 18 | 0.75 | 1.50 |
| 19 | 0.75 | 1.50 |
| 20 and Over | 0.75 | 1.50 |

1 In addition to the individual salary increase assumptions, we have applied an average two hours of additional salary annually for leap-year salary adjustment.

## Demographic Assumptions

### Mortality Rates – Healthy

- **General Members:** RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020

- **Safety Members:** RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years

### Mortality Rates – Disabled

- **General Members:** RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set forward six years for males and set forward three years for females

- **Safety Members:** RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020

### Mortality Rates – Beneficiaries

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

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

### Member Contribution Rates

- **General Members:** RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted, 40% male and 60% female

- **Safety Members:** RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years, weighted 80% male and 20% female

## Mortality Rates Before Retirement

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

*All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected. The other 10% are assumed to be service connected*

## Disability Incidence Rates

| | Rate (%) | | | |
|---|---|---|---|---|
| Age | General All Other[1] | General OCTA[2] | Safety Law & Fire[3] | Safety Probation[3] |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.01 | 0.03 |
| 30 | 0.01 | 0.03 | 0.04 | 0.08 |
| 35 | 0.03 | 0.20 | 0.14 | 0.10 |
| 40 | 0.08 | 0.36 | 0.26 | 0.10 |
| 45 | 0.11 | 0.43 | 0.42 | 0.16 |
| 50 | 0.14 | 0.48 | 0.92 | 0.20 |
| 55 | 0.18 | 0.74 | 1.98 | 0.23 |
| 60 | 0.29 | 1.41 | 5.20 | 0.10 |

[1] *55% of General All Other disabilities are assumed to be service connected disabilities. The other 45% are assumed to be non-service connected.*

[2] *65% of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.*

[3] *100% of Safety Law Enforcement, Fire and Probation disabilities are assumed to be service connected disabilities.*

## Termination Rates

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

[1] *40% of all terminated members with less than 5 years of service and 25% of all terminated members with 5 or more years of service will choose a refund of contributions.*

[2] *45% of all terminated members with less than 5 years of service and 35% of all terminated members with 5 or more years of service will choose a refund of contributions.*

[3] *20% of all terminated members with less than 5 years of service and 20% of all terminated members with 5 or more years of service will choose a refund of contributions.*

[4] *40% of all terminated members with less than 5 years of service and 30% of all terminated members with 5 or more years of service will choose a refund of contributions.*

## Retirement Rates

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

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

2 *Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.*

## Retirement Rates (continued)

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

1 *Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings*

| | |
|---|---|
| **Retirement Age and Benefit for Deferred Vested Members:** | For deferred vested members, we make the following retirement assumption:<br>General Age: 58<br>Safety Age: 53<br>We assume that 20% of future General and 30% of future Safety deferred vested members are reciprocal. For reciprocals, we assume 4.25% compensation increases for General and 5.00% for Safety per annum. |
| **Liability Calculation for Current Deferred Vested Members:** | Liability for a current deferred vested member is calculated based on salary, service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have 3 or more years of service, we used an average salary. For those members without salary information that have less than 3 years of service or for those members without service information, we assumed a refund of account balance. |
| **Future Benefit Accruals:** | 1.0 year of service per year of employment. There is no assumption to anticipate conversion of unused sick leave at retirement. |
| **Unknown Data for Members:** | Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male. |
| **Definition of Active Member:** | All active members of OCERS as of the valuation date. |
| **Form of Payment:** | All members are assumed to elect the unmodified option at retirement. |
| **Percent Married:** | 75% of male members and 50% of female members are assumed to be married at retirement or time of pre-retirement death. |
| **Age of Spouse:** | Female (or male) three years younger (or older) than spouse. |
| **Additional Cashout Assumptions:** | <u>**Non-CalPEPRA Formulas**</u><br>Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages used in this valuation are: |

| | Final One Year Salary | Final Three Year Salary |
|---|---|---|
| General Members | 3.50% | 2.80% |
| Safety Probation | 3.80% | 2.80% |
| Safety Law Enforcement | 5.20% | 4.70% |
| Safety Fire | 2.00% | 2.00% |

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

<u>**CalPEPRA Formulas**</u>

None

# Appendix B: Proposed Actuarial Assumptions

## Economic Assumptions

| | |
|---|---|
| **Net Investment Return:** | 7.00%, net of investment expenses and administration expenses. |
| **Member Contribution Crediting Rate:** | 5.00%, compounded semi-annually. |
| **Consumer Price Index:** | Increase of 3.00% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year. |
| **Payroll Growth:** | Inflation of 3.00% per year plus "across the board" real salary increases of 0.50% per year. |
| **Increase in Section 7522.10 Compensation Limit:** | Increase of 3.00% per year from the valuation date. |

### Individual Salary Increases[1]

| Annual Rate of Compensation Increase (%)<br>Inflation: 3.00% 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 | 9.00 | 14.00 |
| 1 | 7.25 | 10.00 |
| 2 | 6.00 | 7.75 |
| 3 | 5.00 | 6.00 |
| 4 | 4.00 | 5.50 |
| 5 | 3.50 | 4.50 |
| 6 | 2.50 | 3.75 |
| 7 | 2.25 | 3.25 |
| 8 | 1.75 | 2.50 |
| 9 | 1.50 | 2.25 |
| 10 | 1.50 | 1.75 |
| 11 | 1.50 | 1.75 |
| 12 | 1.50 | 1.75 |
| 13 | 1.50 | 1.75 |
| 14 | 1.50 | 1.75 |
| 15 | 1.50 | 1.75 |
| 16 | 1.00 | 1.50 |
| 17 | 1.00 | 1.50 |
| 18 | 1.00 | 1.50 |
| 19 | 1.00 | 1.50 |
| 20 and Over | 1.00 | 1.50 |

[1] In addition to the individual salary increase assumptions, we have applied an average two hours of additional salary annually for leap-year salary adjustment.

### Mortality Rates – Healthy

- **General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale

- **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set back four years, projected generationally with the two-dimensional MP-2016 projection scale

### Mortality Rates – Disabled

- **General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward five years, projected generationally with the two-dimensional MP-2016 projection scale

- **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale

### Mortality Rates – Beneficiaries

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

### Pre-Retirement Mortality Rates

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

### Member Contribution Rates

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

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

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.

## Mortality Rates Before Retirement

| | Rate (%) | |
|---|---|---|
| **Age** | **Male** | **Female** |
| 25 | 0.05 | 0.02 |
| 30 | 0.05 | 0.02 |
| 35 | 0.05 | 0.03 |
| 40 | 0.06 | 0.04 |
| 45 | 0.10 | 0.07 |
| 50 | 0.17 | 0.11 |
| 55 | 0.27 | 0.17 |
| 60 | 0.45 | 0.24 |
| 65 | 0.78 | 0.36 |
| 70 | 1.27 | 0.59 |

*Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates.*

*All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected. The other 10% are assumed to be service connected.*

## Disability Incidence Rates

| | Rate (%) | | | |
|---|---|---|---|---|
| **Age** | **General All Other[1]** | **General OCTA[2]** | **Safety Law & Fire[3]** | **Safety Probation[4]** |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.01 | 0.03 |
| 30 | 0.01 | 0.03 | 0.04 | 0.08 |
| 35 | 0.03 | 0.20 | 0.14 | 0.10 |
| 40 | 0.08 | 0.36 | 0.23 | 0.13 |
| 45 | 0.13 | 0.43 | 0.40 | 0.21 |
| 50 | 0.18 | 0.48 | 1.10 | 0.28 |
| 55 | 0.23 | 0.65 | 2.40 | 0.42 |
| 60 | 0.31 | 1.26 | 4.80 | 0.20 |

[1] *60% of General All Other disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected.*

[2] *65% of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.*

[3] *100% of Safety Law Enforcement and Fire disabilities are assumed to be service connected disabilities.*

[4] *75% of Safety Probation disabilities are assumed to be service connected disabilities. The other 25% are assumed to be non-service connected.*

## Termination Rates

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

## Proportion of Total Termination Assumed to Withdraw Contributions

| | Election for Withdrawal of Contributions (%) | | | |
|---|---|---|---|---|
| Years of Service | General All Other | General OCTA | Safety Law and Fire | Safety Probation |
| 0 – 4 | 35.0 | 40.0 | 20.0 | 25.0 |
| 5 – 9 | 30.0 | 35.0 | 20.0 | 25.0 |
| 10 – 14 | 25.0 | 30.0 | 20.0 | 25.0 |
| 15 or more | 20.0 | 20.0 | 20.0 | 25.0 |

## Retirement Rates

| | Rate (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | General | | | Safety | | | | |
| Age | Enhanced | Non-Enhanced[1] | SJC (31676.12) | Law (31664.1)[2] | Law (31664.2)[2] | Fire (31664.1) | Fire (31664.2) | Probation[2] |
| 48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 49 | 30.00 | 25.00 | 0.00 | 12.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| 50 | 2.50 | 2.00 | 3.00 | 18.00 | 11.50 | 5.00 | 8.00 | 3.25 |
| 51 | 2.00 | 2.00 | 3.00 | 18.00 | 12.00 | 7.00 | 10.00 | 3.25 |
| 52 | 2.50 | 2.00 | 3.00 | 17.00 | 12.70 | 9.50 | 11.00 | 4.25 |
| 53 | 2.50 | 2.75 | 3.00 | 17.00 | 17.90 | 10.50 | 12.00 | 4.25 |
| 54 | 5.50 | 2.75 | 3.00 | 22.00 | 18.80 | 15.00 | 14.00 | 7.00 |
| 55 | 15.00 | 3.25 | 4.00 | 22.00 | 30.70 | 18.00 | 24.00 | 12.00 |
| 56 | 10.00 | 3.50 | 5.00 | 20.00 | 20.00 | 20.00 | 23.00 | 12.00 |
| 57 | 10.00 | 5.50 | 6.00 | 20.00 | 20.00 | 21.00 | 27.00 | 18.00 |
| 58 | 11.00 | 5.50 | 7.00 | 20.00 | 25.00 | 28.00 | 27.00 | 18.00 |
| 59 | 11.00 | 6.50 | 9.00 | 26.00 | 30.00 | 28.00 | 36.00 | 18.00 |
| 60 | 12.00 | 9.25 | 11.00 | 35.00 | 40.00 | 30.00 | 40.00 | 20.00 |
| 61 | 12.00 | 12.00 | 13.00 | 35.00 | 40.00 | 30.00 | 40.00 | 20.00 |
| 62 | 14.00 | 16.00 | 15.00 | 40.00 | 40.00 | 35.00 | 40.00 | 25.00 |
| 63 | 16.00 | 16.00 | 15.00 | 40.00 | 40.00 | 35.00 | 40.00 | 40.00 |
| 64 | 16.00 | 18.00 | 20.00 | 40.00 | 40.00 | 35.00 | 40.00 | 40.00 |
| 65 | 22.00 | 22.00 | 20.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 66 | 22.00 | 28.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 67 | 23.00 | 24.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 68 | 23.00 | 24.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 69 | 23.00 | 20.00 | 24.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 70 | 25.00 | 20.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 71 | 25.00 | 25.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 72 | 25.00 | 25.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 73 | 25.00 | 25.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 74 | 25.00 | 25.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 75 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

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

2 *Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.*

## Retirement Rates (continued)

| | Rate (%) | | | |
|---|---|---|---|---|
| | General | Safety | | |
| Age | CalPEPRA 2.5% @ 67 | CalPEPRA Probation Formula[1] | CalPEPRA Law Formula[1] | CalPEPRA Fire Formula |
| 50 | 0.00 | 2.50 | 11.00 | 6.00 |
| 51 | 0.00 | 2.50 | 11.50 | 7.00 |
| 52 | 4.00 | 3.00 | 12.00 | 9.00 |
| 53 | 1.50 | 3.00 | 16.00 | 10.00 |
| 54 | 1.50 | 5.50 | 17.00 | 11.50 |
| 55 | 2.50 | 10.00 | 28.00 | 21.00 |
| 56 | 3.50 | 10.00 | 18.00 | 20.00 |
| 57 | 5.50 | 15.00 | 17.50 | 22.00 |
| 58 | 7.50 | 20.00 | 22.00 | 25.00 |
| 59 | 7.50 | 20.00 | 26.00 | 30.00 |
| 60 | 7.50 | 40.00 | 40.00 | 40.00 |
| 61 | 7.50 | 40.00 | 40.00 | 40.00 |
| 62 | 14.00 | 40.00 | 40.00 | 40.00 |
| 63 | 14.00 | 40.00 | 40.00 | 40.00 |
| 64 | 14.00 | 40.00 | 40.00 | 40.00 |
| 65 | 18.00 | 100.00 | 100.00 | 100.00 |
| 66 | 22.00 | 100.00 | 100.00 | 100.00 |
| 67 | 23.00 | 100.00 | 100.00 | 100.00 |
| 68 | 23.00 | 100.00 | 100.00 | 100.00 |
| 69 | 23.00 | 100.00 | 100.00 | 100.00 |
| 70 | 25.00 | 100.00 | 100.00 | 100.00 |
| 71 | 25.00 | 100.00 | 100.00 | 100.00 |
| 72 | 25.00 | 100.00 | 100.00 | 100.00 |
| 73 | 25.00 | 100.00 | 100.00 | 100.00 |
| 74 | 25.00 | 100.00 | 100.00 | 100.00 |
| 75 | 100.00 | 100.00 | 100.00 | 100.00 |

[1] *Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings*

| | |
|---|---|
| **Retirement Age and Benefit for Deferred Vested Members:** | For deferred vested members, we make the following retirement assumption:<br>General Age: 59<br>Safety Age: 53<br>We assume that 15% of future General and 25% of future Safety deferred vested members are reciprocal. For reciprocals, we assume 4.50% compensation increases for General and 5.00% for Safety per annum. |
| **Liability Calculation for Current Deferred Vested Members:** | Liability for a current deferred vested member is calculated based on salary, service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have 3 or more years of service, we used an average salary. For those members without salary information that have less than 3 years of service or for those members without service information, we assumed a refund of account balance. |
| **Future Benefit Accruals:** | 1.0 year of service per year of employment. There is no assumption to anticipate conversion of unused sick leave at retirement. |
| **Unknown Data for Members:** | Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male. |
| **Definition of Active Member:** | All active members of OCERS as of the valuation date. |
| **Form of Payment:** | All members are assumed to elect the unmodified option at retirement. |
| **Percent Married:** | 75% of male members and 55% of female members are assumed to be married at retirement or time of pre-retirement death. |
| **Age of Spouse:** | Female (or male) three years younger (or older) than spouse. |
| **Additional Cashout Assumptions:** | **<u>Non-CalPEPRA Formulas</u>**<br>Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages used in this valuation are:<br>**Final One Year Salary / Final Three Year Salary**<br>General Members: 3.00% / 2.80%<br>Safety Probation: 3.80% / 3.40%<br>Safety Law Enforcement: 5.20% / 4.60%<br>Safety Fire: 2.00% / 1.70%<br>The additional cashout assumptions are the same for service and disability retirements.<br><br>**<u>CalPEPRA Formulas</u>**<br>None |

# I-3

# Memorandum

**DATE**: August 7, 2017

**TO**: Members of the Board of Retirement

**FROM**: Brenda Shott, Assistant CEO, Finance and Internal Operations and Molly Murphy, CIO

**SUBJECT**: **EARLY PAYMENT OF EMPLOYER CONTRIBUTIONS PROGRAM - 2018**

## Recommendation

Approve the terms of a prepayment discount program for the advance payment of employer contributions, including the discount rate to be used, for contribution year July 2018 through June 2019.

## Background

On July 17, 2017 Government Code Section 31582 was amended by the passage of SB 671 which was introduced by Senator Moorlach. This section of the Government Code relates to county's employee retirement contributions. The amended Government Code Section 31582 (b) and (c) (the Code) states (recently enacted changes to the Code are highlighted for information purposes only):

> (b) "*The board of supervisors may authorize the county auditor to make an advance payment of all or part of the county's estimated annual contribution to the retirement fund, provided that the payment is made not later than ~~within~~ 30 days after the commencement of the county's fiscal year. This subdivision does not prevent the board of supervisors from authorizing the county auditor to make an advance payment for the estimated annual county contributions for an additional year or partial year if the advance payment is made no later than 30 days after the commencement of the county fiscal year for which the advance payment is made. If the advance is only a partial payment of the county's estimated annual contribution, remaining transfers ~~from the appropriation~~ to the retirement fund shall be made at the end of each month or at the end of each pay period until the total amount ~~estimated~~ required for the year is contributed. ~~This amount~~ Transfers shall be adjusted at the end of the fiscal year to reflect the actual contribution required for that year.*
>
> *(c) A district subject to Section 31585 may also authorize an advance payment of all or part of the district's estimated annual contribution to the retirement fund, provided that the payment is made no later than ~~within~~ 30 days after the commencement of the district's fiscal year. This subdivision does not prevent the governing body of a district from authorizing the district to make an advance payment for the estimated annual district contributions for an additional year or partial year if the advance payment is made no later than 30 days after the commencement of the district fiscal year for which the advance payment is made. If the advance is only a partial payment of the district's estimated annual contribution, ~~transfers~~ payments ~~from the appropriation~~ to the retirement fund shall be made at the end of each month or at the end of each pay period until the total amount ~~estimated~~ required for the year is contributed. This amount shall be adjusted at the end of the fiscal year to reflect the actual contribution required for that year."*

In connection with the Code, OCERS has annually offered plan sponsors the opportunity to receive a discount on their employer contributions if they paid their contributions early with a lump sum payment. The program dates back to Fiscal Year 2005-2006, and is brought back to the Board annually for consideration on the program terms to offer for the next year. Timely consideration of the program is appropriate now, in order to give plan sponsors adequate time to plan funding for a lump sum payment in January, should the plan be approved for the upcoming contribution year.

Plan sponsor interest in such a program remains high as eleven of the thirteen plan sponsors with active members elected to prepay contributions of $468M for Fiscal Year 2017-2018 (Superior Court and OCERS are the two employers who do not participate). An early payment program is primarily a tool for plan sponsor budget management, rather than a long-term funding technique for the system. Prepaid contributions allow OCERS to deploy cash on a more concentrated basis; however, they also increase OCERS' internal cash flow and short-term cash overlay portfolio risk, and challenge the efficiency of dollar cost averaging during periods of volatile markets. The Board approved revised program provisions in 2014 (for FY15-16) which reduced investment related risks. Specifically, the discount rate offered to the plan sponsors for prepaying their contributions was reduced from 7.25% down to 5.8% (which equates to a 20% rate reduction from the actuarial assumed rate of return). The rationale behind the reduced rate primarily centers around the theory that during "ripe, full-value market periods" in which most stock indexes are trading at levels materially above the prior market-cycle peak with valuation metrics above historical averages *and* the national real per capita GDP materially exceeds the prior business cycle peak the Board should enact a risk-reduction policy by reducing the prepayment discount rate. Based on the market conditions in 2015, the Board again approved the same discount rate of 5.8% in for FY16-17, and reduced the discount rate to 4.5% for FY17-18.

## Discussion

### *Prepayment Discount Rate*

Employer contributions rates are calculated by the System's actuary in the annual actuarial valuation assuming that contributions are collected in installments between July and June of the employer fiscal year for which the rates are effective. Since that means they are received, on average, at the middle of that fiscal year, the actuary determines the rates assuming that the contributions will earn only one-half of the investment return assumption (currently 7.25% per year) during the fiscal year they are contributed. If instead, for example, an employer pays all estimated employer contributions in July, at the beginning of the fiscal year when installments were assumed to have begun, it would be appropriate to provide a half-year of interest credit because the contributions will be in the fund generating investment income for (on average) an additional one-half year. For purposes of this program we have termed this interest credit as a "prepayment discount".

The annual rate used for applying a prepayment discount has generally been the annual assumed rate of return used in the applicable actuarial valuation for the system (as this is the rate that the actuary used when calculating the contribution rate). The practice surrounding prepayment of contributions varies across the '37 Act Systems as many systems have recently made changes to how they administer their programs. Many of the systems use their assumed rate of return as a prepayment discount, however, there are a few systems (Tulare and Fresno) that use a fraction of the assumed rate (½ and ¼) and a several (Kern, Sonoma, Marin, Santa Barbara and San Joaquin) that do not provide any prepayment discount. San Bernardino recently approved a 50 basis point trading cost charge which reduces their assumed rate of return which is used as the discount rate offered for their program. The actual discount amount provided to the plan sponsor is calculated as a function of both the annual rate and of when OCERS receives payment of the contributions (discounted cash flows). For example, as noted above, payments received in July would be discounted using one-half the annual assumed earnings rate in the discounted cash flow calculation because from an actuarial perspective OCERS would have been assumed to earn on average one-half year of additional investment income at the assumed earnings rate on contributions received during the period. Prepayments of contributions made in January (which has been the practice at OCERS), six months prior to the beginning of the contribution year, would be discounted using the full annual assumed rate of return because the prepaid contributions would be on deposit for an additional six months and so, on average, would be received a full year earlier than if paid in installments during the contribution year.

From an actuarial perspective, the prepayment program, as originally designed (using the assumed rate of return as the discount rate for prepayment of contributions), resulted in equivalent mathematical funding into the system. As described above, normally, the employer and the members make their contributions to OCERS at the end of every pay period. For that reason, in the actuarial valuation, the actuary determines the contribution rates by assuming contributions will earn only about one-half year of interest during the year they are contributed, to account for the collection of the contributions, on the average, at around the middle of the year. That interest calculation is done using the long-term investment return assumption, currently 7.25%. (The actuary also adds interest to account for the 18-month delay in implementing rates from the date of the valuation to the beginning of the following fiscal year.) As such, if the employer were to make its contributions at the beginning of the fiscal year (or earlier), it would be actuarially neutral to provide an interest credit calculated at the same 7.25% per year that is built into the contribution rates.

From an investment perspective, the prepaid contributions are invested in a derivatives overlay program that will synthetically replicate the OCERS' asset allocation strategy, thus ensuring that all funds are immediately participating in global markets. As benefit payments are paid and investment opportunities are funded, the dollars invested in the overlay program will be drawn down throughout the year. While the prepayment program should not introduce any additional risks to achieving long-term investment assumption of 7.25%, the prepayment program does present a market timing risk with prepaid contributions coming in one lump sum rather than in installments throughout the year that can then be invested into the market using a dollar cost averaging methodology. This risk should be tolerable in the long-term but should be recognized in the short-term.

According to OCERS' investment consultant (Meketa), OCERS' current asset allocation model has a 57% probability of achieving a long-term return of 7.25%. In setting a discount rate specifically for the prepayment program, OCERS seeks to achieve a very high probability that investment returns will meet or exceed the discount rate so as to not increase the overall unfunded liability. Using the current prepayment program discount rate of 4.5%, Meketa has determined that the probability that long-term investment returns will meet this rate is 88%. OCERS' Chief Investment Officer, Molly Murphy, has reviewed the prepayment program and has agreed that 4.5% is an acceptable discount rate for FY 18/19.

***Calculation of prepayment amount***

There are several factors needed to calculate the discounted prepayment amount when contributions are paid early. Projected payroll amounts are the starting point for calculating the prepayment amount and are provided by plan sponsors for each rate group or plan they participate in and are prepaying contributions. The projected payroll amount (as estimated by the plan sponsors) is multiplied by the employer's contribution rate for the applicable rate group. Per the Code, only employer contributions paid by the employer and credited to the employer's account (not the employee's account) are eligible for the discount. More specifically, reverse pick up arrangements whereby employees pay a portion of the employer's required contribution and employer pick up arrangements whereby employers pay a portion of employee's required contribution are excluded from the prepayment discount program. The resulting product is then divided by one plus the discount rate.

OCERS' staff compares the projected contribution amount to actual contributions throughout the period in order to ensure that the annual required contribution is collected.

Any investment variation caused by the timing of the contributions becomes a part of the normal actuarial valuation process – i.e., rates for the future will rise and fall based on the assets in the system. Therefore, no adjustment of the early contribution payment is made on the basis of actual returns during the year.

***Minimum Amount to participate***

In addition to identifying an appropriate discount factor the Board has also adopted plan provisions that define the minimum prepayment amounts and established contribution payment time frames. The previously adopted polices required that employers prepay at least 50% of the estimated annual contribution in order to be eligible for the discount and established that prepaid contributions be received prior to either January 16$^{th}$ or July 16$^{th}$.

## Conclusion:

**Staff recommends that the Board approve an early payment discount on employer contributions paid by the employer for contribution year July 2018 through June 2019 with the following terms:**

a) Use a discount rate of 4.5% when calculating the present value of discounted cash flows if payment is received by January 16, 2018 or 2.25% if payment is received after January 16, 2018 but before July 16, 2018
b) Contributions not paid early must be paid pro rata over the year with no discount being credited
c) OCERS' staff will compare the payroll estimates used to calculate the prepayment amount for each participating plan sponsor to actual payroll each pay period. Should actual payroll be 5% greater than estimated payroll for four consecutive pay periods, the plan sponsor will be required to pay additional contributions each pay period for the additional salary above the projected salary used to calculate the prepayment (no discount would be applied to the additional amount)
d) Plan sponsors that have more than one plan or rate group are required to provide the estimated pensionable salary separately for each plan or group
e) Only employer contributions paid by the employer are eligible for the prepaid discount program (employee pick-ups and reverse pick-ups are ineligible)
f) The application of the prepayment of contributions will be applied to pay periods 2018-15 through 2019-14
g) OCERS will reconcile the prepaid contributions to the actual contributions at the end of the contribution year. Any overpayments will be made available to either apply to the following year's prepayment of employer contributions or to the current year's bi-weekly employer contributions (Note: overpayments cannot be applied to employee contributions). Any under payments will be collected from the employer.

## Submitted by:

Brenda M Shott

Brenda Shott
Assistant CEO, Finance and Internal Operations

Molly A. Murphy, CFA
Chief Investment Officer

**Approved by:**

Steve Delaney

Chief Executive Officer

# Employer Prepayment Program

August 21, 2017

Molly Murphy, CFA

# Background

- Government Code Section 31582 (b) and (c) (the Code) states: “The board of supervisors may authorize the county auditor to make an advance payment of all or part of the county’s /district’s estimated annual contribution to the retirement fund…”

- The System’s actuary sets employer contributions rates that assume contributions will earn only one-half year of investment return in the year they are made, recognizing that contributions are collected in installments throughout the fiscal year

- If an employer pays a lump sum prior to the beginning of the fiscal year (or earlier), the employer receives a “prepayment discount” to recognize that the contributions are expected to generate more investment income than was anticipated when the rates were set

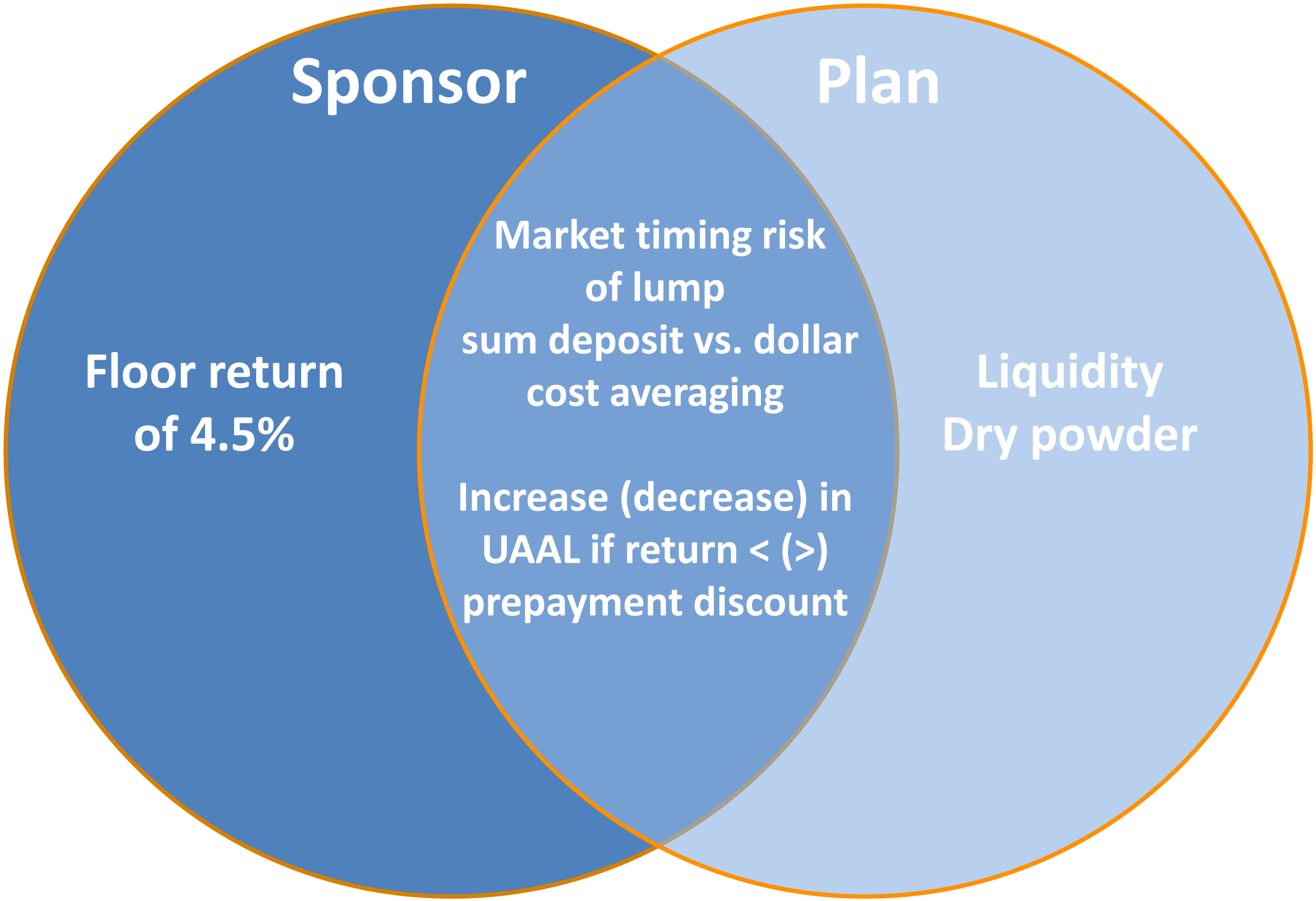
# Background

- OCERS’ prepayment program dates back to FY05-06
- OCERS has annually offered plan sponsors a prepayment discount on their contributions via an early lump sum payment
- OCERS’ prepayment discount for FY17-18: 4.5%
- Since the program’s inception, OCERS has reduced the prepayment discount two times

| | FY05-06…14-15 | FY15-16 | FY16-17 | FY17-18 | FY18-19 |
|---|---|---|---|---|---|
| **Prepayment Discount** | 7.25% | 5.80% | 5.80% | 4.50% | ? |

- OCERS reached out to 26 CA plans:
  - 15 responded and 8 offered a prepayment program
  - Prepayment discount rates ranged from their respective actuarial rate, (e.g., 7.25%) down to 1.75%

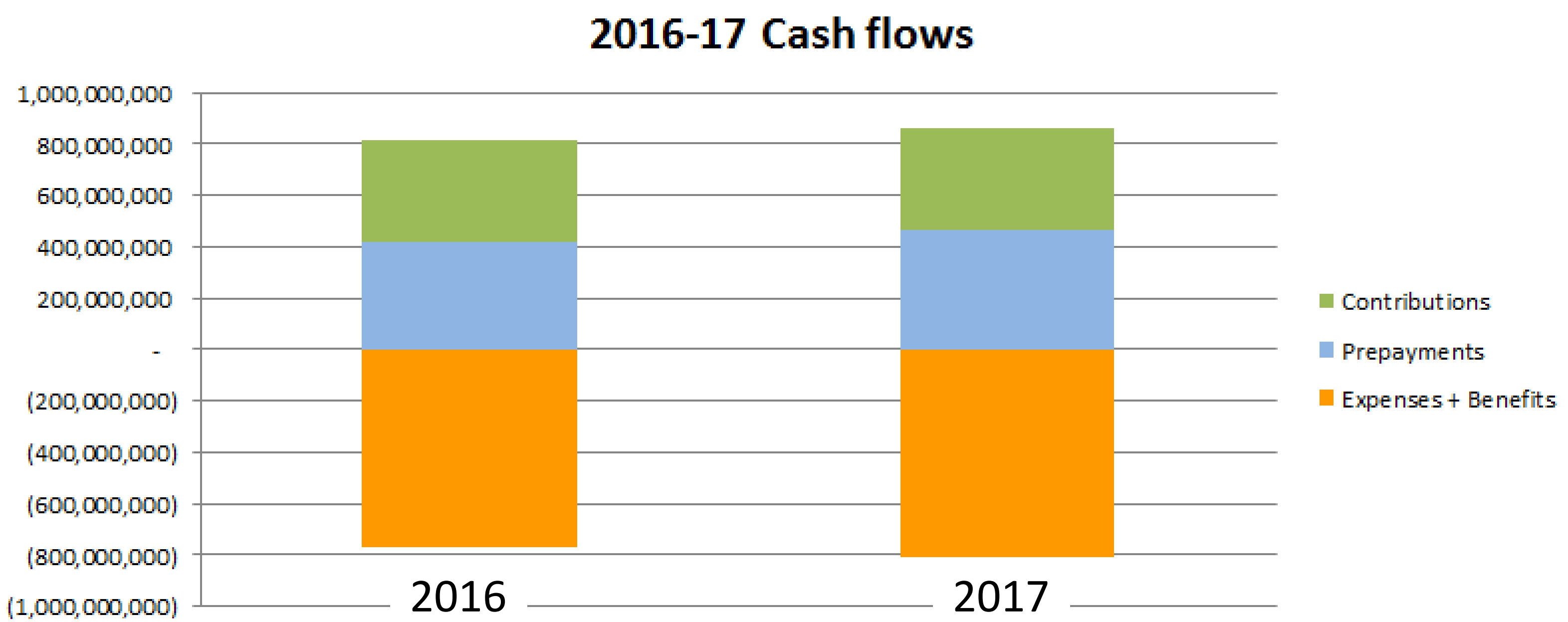
# Analysis: Risks & Rewards






ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# Analysis: Cash flows




| | 2016 | Estimated 2017 |
|---|---|---|
| Prepayments | 417,718,815 | 467,413,747 |
| Contributions | 397,799,608 | 391,355,265 |
| Prepayments + Contributions | 815,518,423 | 858,769,012 |
| Expenses + Benefits | (771,300,000) | (808,600,000) |
| Net | 44,218,423 | 50,169,012 |

**Employer prepayments and contributions are slightly more than OCERS' expenses/benefits**



ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# Analysis: Rate Optimization

**20-Year Expected Returns[1]**

| Asset Class | OCERS Adopted Asset Allocation Policy (%) |
|---|---|
| Global Public Equity | 35 |
| Private Equity | 8 |
| Core Fixed Income | 17 |
| Credit | 13 |
| Real Assets | 22 |
| Risk Mitigation | 5 |
| Cash | 0 |
| *20-Year Expected Return (Geometric)* | *7.8* |
| *Standard Deviation* | *13.0* |
| *Probability of achieving at least a 7.25% return[2]* | *57.4* |
| *Probability of achieving at least a 4.50% return[3]* | *87.8* |

[1] 20-Year Expected Returns based on Meketa's 2016 Annual Asset Study

[2] Probability of achieving at least a 7.25% annualized return over the next 20 years

[3] Probability of achieving at least a 4.50% annualized return over the next 20 years

# Recommendation

- **Perspective**
  - Prepayments represent ~$400m/$14b portfolio, or ~3% of OCERS' Plan assets
- **Benefit/Opportunity**
  - Additional liquidity to Plan may improve opportunistic investing options
- **Recommendation**
  - Maintain the 4.5% discount rate
  - Keep prepayments at Parametric's cash overlay program to immediately equitize cash & hold to meet outflows during the year

# I-4

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# Memorandum

**DATE**: August 07, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **EXECUTIVE SECRETARY I POSITION - LEGAL DEPARTMENT**

## Recommendation

1) Approve the addition of an Executive Secretary I positon assigned to the Legal Department

2) Delete the current vacant Secretary II position

## Background/Discussion

On August 03, 2017, the Secretary II position became vacant. After examination of the current duties assigned to the Secretary II position, the General Counsel has recommended to redistribute the department's current workloads. With this reallocation, the position will be assigned a greater portion of the administrative legal tasks, will support the OCERS executives and will require a higher level of legal competencies than those that were assigned to the Secretary II position. The Executive Secretary I job description and minimum requirements meets the anticipated needs of the Legal department going forward. The recommended actions will not increase the total number of approved position, but will allow the department to successfully provide administrative support for the department.

This recommendation will increase personnel cost for this position by $4,348 in the current year. However, no amendments to the current budget are needed as this cost will be absorbed in the existing approved budget through utilizing unspent budgeted dollars related to vacancies within the agency. The estimated annual financial impact of changing the position from a Secretary II to an Executive Secretary I is approximately $20,000.

| Position | Hourly Rate (Step 12) | 2017 Fringe Load Factor* | Fully Loaded Hourly Rate | Hours/ Pay Period | Cost / Pay Period | Number of Pay Periods (PP22-PP26.6) | Total Estimated Cost (PP22 - PP26.6) |
|---|---|---|---|---|---|---|---|
| Executive Secretary I | $31.38 | $16.20 | $47.58 | 80 | $3,807 | 5.6 | $21,318 |
| Secretary II | $24.98 | $12.90 | $37.88 | 80 | $3,030 | 5.6 | $16,970 |
| Estimated Increase | | | | | | | **$4,348** |

*2017 Fringe Load Factor 51.6%

Fringe load factor based on personnel cost expenses through PP14, 2017.

If the recommended actions are approved, staff will conduct the recruitment of the Executive Secretary I position recruitment in accordance with the County of Orange Merit and Selection rules. We anticipate filling the vacancy within the next 90 days, with a tentative October 13, 2017 start date. Once the newly formed Executive Secretary I position is created in the County's payroll system, the current Secretary II position will be deleted, keeping the current budgeted headed count at 80 employees.

**Submitted by:**

Steve Delaney

___________________________

Steve Delaney

Chief Executive Officer

**Attachments:**

1. Justification Memorandum from General Counsel
2. Memo to County of Orange, Request to add Executive Secretary I position

ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

# Memorandum

**DATE:** August 7, 2017

**TO:** Steve Delaney, Chief Executive Officer

**FROM:** Gina M. Ratto, General Counsel Gina

**SUBJECT:** **Justification for Addition of Executive Secretary I in the Legal Department**

## Recommendation

I recommend the addition of an Executive Secretary I position in the Legal department, and the elimination of the vacant Secretary II position.

## Background/Discussion

The Secretary II position in the Legal department became vacant on August 3, 2017.

I have considered the needs of the Legal department and OCERS executive management and believe that we would be better served overall by adding an Executive Secretary I in the Legal department and eliminating the vacant Secretary II position. The Executive Secretary I position would be expected to (1) provide legal secretarial support to the General Counsel, Deputy General Counsel and two Staff Counsel; (2) evenly share in the duties of the current Executive Secretary II in providing administrative support to the Executive team; (3) be primarily responsible for all of the administrative support associated with meetings of the Governance Committee and the Audit Committee; and (4) provide back-up to the Executive Secretary II in the administrative support associated with the meetings of the Board of Retirement.

As you know, one of my goals is to reduce our use of external counsel in litigation matters that do not involve significant factual disputes and associated discovery (for example, writ proceedings filed in felony forfeiture cases); and we have hired a Deputy General Counsel who is eager and able to handle these matters in house. This will result in an increase in the demands on the Legal department secretary in terms of the expertise and skill needed to perform the associated tasks (preparation of pleadings, court filings, etc.). Recruiting at the higher level position of Executive Secretary I is expected to solicit a more experienced candidate pool.

In addition, this position will be expected to perform job duties that are almost identical to those performed by the current Executive Secretary II, who reports to you, and is expected to stand in for the Executive Secretary II when she is absent. From an equity perspective, the classification of Executive Secretary I appears particularly justified.

Thank you in advance for your consideration.

cc: Cynthia Hockless

# Memorandum

**DATE**: August 21, 2017

**TO**: County of Orange, Human Resources Services Department

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **REQUEST TO ADD AN EXECUTIVE SECRETARY I POSITION**

On August 21, 2017, the OCERS' Board of Retirement approved the addition of an Executive Secretary I position in OCERS' Legal department. This position will be assigned high level secretarial duties. Due to the urgent nature of this request, we ask that you use this memo as authorization to create the position as we do not anticipate having the approved Board minutes until October 16, 2017. Once the approved minutes are received, the OCERS Administrative Services department will send you a copy of the minutes for your records. In the interim, we trust that this memo will serve to verify that the Board of Retirement approved the position.

Thank you in advance for your consideration. Please do not hesitate to contact me at (714) 558-6222 if you have any questions or concerns.

______________________________
Steve Delaney, Chief Executive Officer

______________________________
David Ball, OCERS Board Chair

# I-5

ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

# Memorandum

**DATE**: August 21, 2017

**TO**: Members of the Board of Retirement

**FROM**: Catherine Fairley, Director of Member Services

**SUBJECT**: **Member Services Annual Report**

## Recommendation

Receive and file.

## Background/Discussion

The Board of Retirement established a charter which sets out its duties and responsibility in governing the System. The Board recognizes the need to clearly delineate the responsibilities of the various decision-making bodies involved in the governance and management of OCERS. In the area of monitoring and reporting, the Board of Retirement will annually review the quality of Member Services. This report serves to inform the Board of current status tied to actions supporting our goals and objectives. The attached presentation provides additional details.

## OCERS Mission Statement

*We provide secure retirement and disability benefits with the highest standards of excellence.*

## Supporting Goals and Highpoints in Member Services Division

**Excellent Customer Service**

- Telephone software will be upgraded in September 2017 to provide improved reporting and call features – automated telephone surveys will reach full membership. Upon deployment, next step is evaluation of call center options.
- Plan sponsor transmittal training provided to improve efficiency and clarify system requirements on bi-weekly transmittal processing for employer payroll reporting. Staff addition of new supervisor overseeing unit of employer payroll processing created in 2017 to focus on new member enrollment and active member reporting.
- Per Board approval, increased staff by five additional positions; nine recruitments have been completed in 2017, with three vacancies to be filled by the end of September 2017.

**Timely & Accurate Benefits**

- Discovered and remediated benefit miscalculations on pay item for retired Sheriff's with direction from the Board. Staff recalculated all overpaid and underpaid benefits as of September 2017 retiree payroll.
- Migrated tracking logs for payroll, service purchases and reciprocity to SharePoint providing reporting and organizational improvement also supporting business continuity.
- Addition of two quality assurance positions for peer audit oversight and process refinement – positions to be filled by end of September 2017.

**<u>Professional Plan Administration</u>**

- Staff development and training prioritized in 2017; supervisory staff participating in CALAPRS leadership academy and Round Table conferences and County of Orange Professional Development Experience training. Examples of onsite training provided to staff in 2016 - 2017 are Ethics, Security Awareness, Service Credit Calculations, Benefit Recalculations, County of Orange sponsored Cyber Security Awareness, Emotional Intelligence 2.0, and Service Credit Purchase Overview.
- Recurring meetings with legal staff collaborating on policy and procedure review and improvement.
- Workforce analysis project is currently in progress at OCERS with results reported to the Board by end of 2017.

## Submitted by:

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

C. F. – APPROVED

Catherine Fairley
Director of Member Services

# Member Services Annual Report

Presented by:
Catherine Fairley, Director of Member Services

# Background

- OCERS Board of Retirement Charter
  - Monitoring and Reporting Annually
    - Review the quality of member services



ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# OCERS Membership

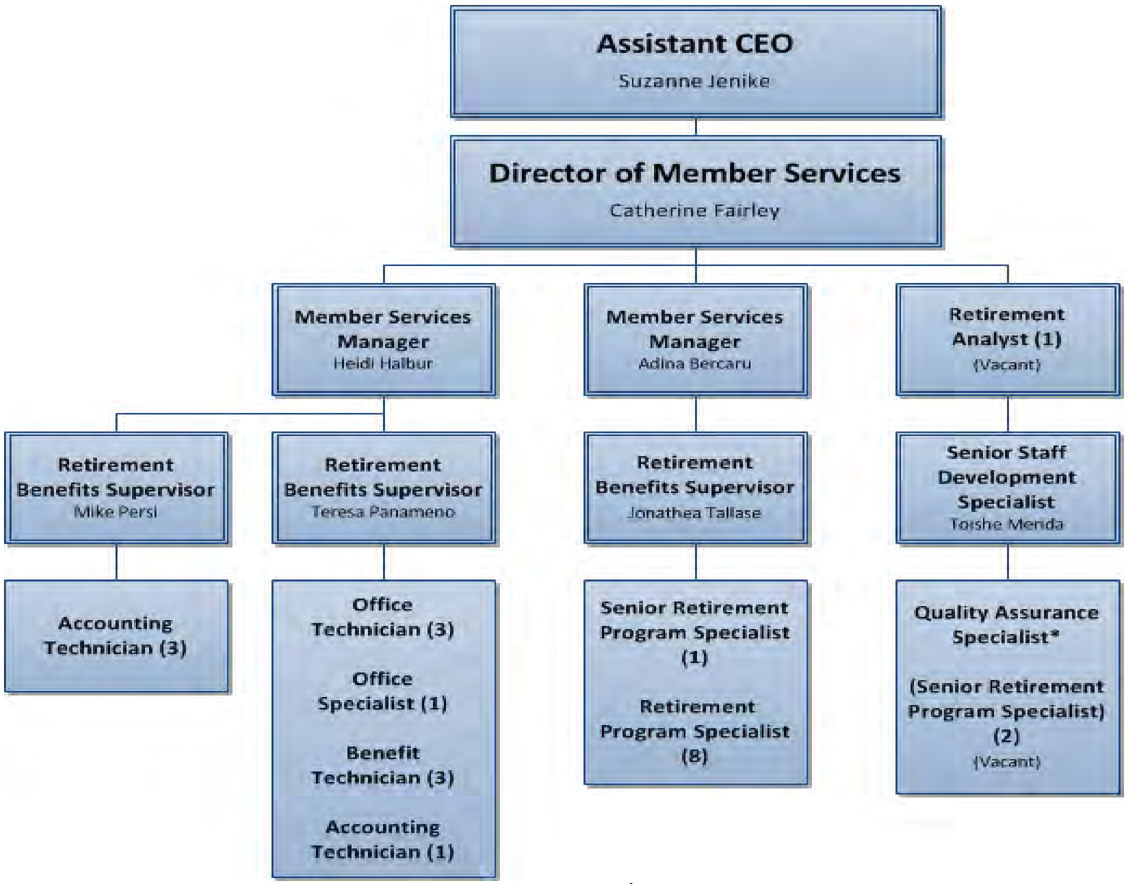
- OCERS has twenty plan sponsors – 15 active and 5 inactive
- Membership counts as of 12/31/2016 actuarial valuation:
  - Active members = 21,746
  - Deferred members = 5,370
  - Payees = 16,369

Count of Active, Deferred and Payee by Status
As of December 31, 2016

| | General | Safety | Total |
|---|---|---|---|
| Active | 18,072 | 3,674 | 21,746 |
| Deferred | 4,940 | 430 | 5,370 |
| Payee | 13,434 | 2,935 | 16,369 |
| Total | 36,446 | 7,039 | 43,485 |

# Member Services Staff

- Current division structure






ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# Current Benchmarking

- Member surveys – 95% of members surveyed are positive responses (Strategic Plan Benchmark #1)
- Benefit recalculations* – no more than 5% of benefit initiations require unplanned recalculation (Strategic Plan Benchmark #2)
  - Both benchmarks have been met and reported to Retirement Board on monthly basis since January 2014

*excludes systemic miscalculations



ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

# Member Services Goals

- Telephone calls: answered within 85 seconds
- Message callbacks:  within 2 business days
- Payroll processing:  pay member within 45 days of retirement
- All calculations, financial transactions and data entry into pension system is (peer) audited

# Member Services Transactions*

| | Active Member Processing | | | | Benefits Processed | | Account Maintenance | | | | Member Contact and Outreach | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | New Member Enrollments | Reciprocity Verifications | SCP Requests Received | Service Retirement Apps Received | New Monthly Benefit Setups | Lump Sum Benefit Setups | Tax Withholding Changes | Direct Deposit Changes | Beneficiary Change Forms Processed | Address Changes | Scheduled Appts | Without Appts (Walk-Ins) | Seminars (All Types) | Phone Calls Received (MS Queue calls) | Phone Calls (MS Direct In/Out, Non Queue) |
| **2013** | 1450 | 417 | 410 | 881 | 968 | 625 | 1713 | 1919 | 2991 | 1519 | 634 | 1011 | 22 | 11241 | 53727 |
| **2014** | 1616 | 510 | 381 | 1029 | 1052 | 671 | 1932 | 2070 | 3044 | 1789 | 574 | 1093 | 22 | 11642 | 53704 |
| **2015** | 1679 | 464 | 421 | 957 | 1078 | 673 | 2088 | 2008 | 2566 | 1719 | 692 | 914 | 32 | 13732 | 53359 |
| **2016*** | 1910 | 527 | 881 | 1046 | 1111 | 699 | 2441 | 2540 | 3860 | 1323 | 1070 | 1460 | 35 | 15030 | 52227 |
| **Volume Change % from 2013** | **32%** | **26%** | **115%** | **19%** | **15%** | **12%** | **42%** | **32%** | **29%** | **-13%** | **69%** | **44%** | **37%** | **34%** | **-3%** |
| **% Transactions Audited** | 100% | 100% | 100% | -- | 100% | 100% | 100% | 100% | 100% | 100% | -- | -- | -- | -- | -- |
| **Data Audited** | Member Affidavits (Employer/ Plan accuracy, Beneficiaries, Claimed reciprocity) | Refund Calculations; Plan Change Calculations | SCP Eligibility; Cost Calculations; Cost Notification Letters | | Member Data/ Forms/Required Certificates; FAS Peer Audit (Before Processing); Major Benefit Components; FAS Supervisor Audit (5%, After processing) | Required Forms; Benefit Setup | Accuracy of data entry by Staff | Accuracy of data entry by Staff | Accuracy of data entry by Staff | Accuracy of data entry by Staff | | | | | |

**2016 values are projected through year end;*
***2016 decline due to direct address change update availability for deferred members and payees on the MSS (in V3)*

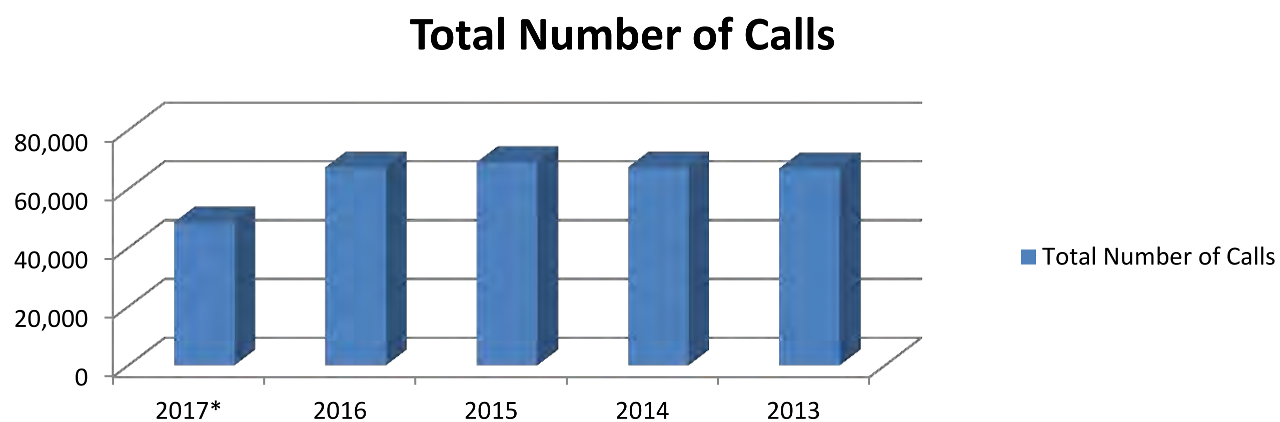
*Data as of 10/2016

# Telephone Statistics

| | 2017* | 2016 | 2015 | 2014 | 2013 |
|---|---|---|---|---|---|
| Queue Calls | 8,519 | 13,090 | 13,732 | 11,642 | 11,241 |
| Direct Extension Calls | 40,044 | 52,227 | 53,359 | 53,704 | 53,727 |
| **Total Number of Calls** | 48,563 | 67,333 | 69,106 | 67,360 | 66,981 |

Queue Calls: Telephone calls to main OCERS office number - general questions routed to staff though phone tree queue

Direct Extension Calls: Telephone calls (inbound and outbound) received or returned directly by staff




*data as of 8/14/17

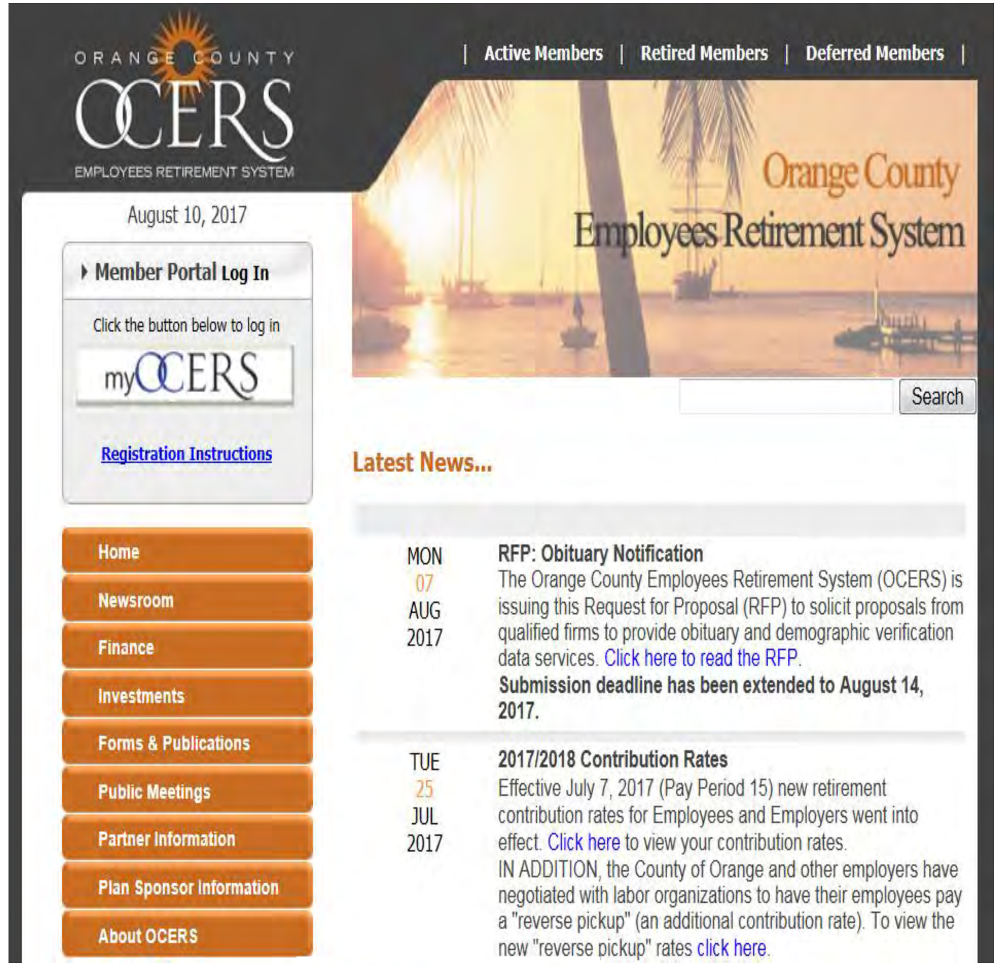
# Tools

- **Member Self Service Portal – myOCERS – online account management**
  - Active and deferred members: real time statements, beneficiary updates, view service credits and balance, estimates, submit retirement application
  - Retired members: view payment and tax information, update address, tax withholding, direct deposit, beneficiary, real time award letter generation, print 1099-R
  - Updated pension system strengthened data security in August 2017

# OCERS Web site

[www.ocers.org](http://www.ocers.org)

- Summary Plan Descriptions
- Member self service portal log
- Latest news
- Tax calculator link to IRS
- Online Forms & Publications
- Easier Navigation
- Enhanced Search
- Video library




# Questions?

ORANGE COUNTY
OCERS
EMPLOYEES RETIREMENT SYSTEM

# I-6

# Memorandum

**DATE**: August 10, 2017

**TO**: Members of the Board of Retirement

**FROM**: Steve Delaney, Chief Executive Officer

**SUBJECT**: **OCERS VISION AND VALUES**

## Recommendation

Adopt an OCERS' Vision and Values statement.

## Background/Discussion

In November 2015 the OCERS Board of Retirement adopted a new mission statement for the system:

MISSION STATEMENT:

We provide secure retirement and disability benefits with the highest standards of excellence.

In September 2016, assisted by Tom Iannucci of Cortex, the Board then took up discussion of the next step in this journey, and discussed what our system Vision and Values statements might look like.

Through the winter months of 2016 I held a number of OCERS staff meetings and received input from our employees as to their thoughts regarding possible Vision and Values statements.

In March 2017 I reviewed that material with the Board, as well as examples from a number of different public pension systems across the country. The Board requested I return in April 2017 with a different slate of possible statements, a slate of statements "more pithy and memorable."

In April 2017 I reviewed additional possible statement drafts, and received further helpful suggestions from the Board, requesting that I return yet again at a future date.

On July 28, 2017, your OCERS management team met off-site for our semi-annual strategic planning workshop, and taking all input into consideration, and discussing at length what we as a body believe best represents the Vision and Values of this system, we came to the following resolution, which we recommend to you the Board for adoption:

VISION STATEMENT:

To be a trusted partner providing premier pension administration, distinguished by consistent, quality member experiences and prudent financial stewardship.

VALUES:

**O**pen and Transparent

**C**ommitment to Superior Service

**E**ngaged and Dedicated Workforce

**R**eliable and Accurate

**S**ecure and Sustainable

We will be happy to discuss our thoughts and reasoning behind each of those statements.

**Submitted by:**

Steve Delaney
Chief Executive Officer