

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

REGULAR MEETING
Monday, May 15, 2017
9:00 a.m.

AGENDA (Revised – 5/9/17, 3:01 p.m.)

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 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. Except as otherwise provided by law, no action shall be taken on any item not appearing in the following agenda. 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	May 15, 2017
Death Notices	May 15, 2017

Recommendation: Receive and file.

ADMINISTRATION

C-2 [BOARD MEETINGS AND COMMITTEE MEETINGS](#)

Regular Board Meeting Minutes	April 17, 2017
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Governance Committee Meeting Minutes

April 5, 2017

Recommendation: Authorize meeting and approve minutes.

C-3 CEO FUTURE AGENDAS AND 2017 OCERS BOARD WORK PLAN

Recommendation: Receive and file.

C-4 QUIET PERIOD – NON-INVESTMENT CONTRACTS

Recommendation: Receive and file.

C-5 FIRST QUARTER 2017 BUDGET TO ACTUALS REPORT

Recommendation: Receive and file.

C-6 FIRST QUARTER UNAUDITED FINANCIAL STATEMENTS FOR THREE MONTHS ENDED MARCH 31, 2017

Recommendation: Receive and file.

C-7 NEW YORK STATE COMMON RETIREMENT FUND'S SCANDAL – LESSONS FOR OCERS (FUTURE CONSIDERATION BY AUDIT COMMITTEE)

Recommendation: Receive and file.

C-8 DIRECTIVE TO REVIEW OCERS INVESTMENT FEE REPORT

Recommendation: Receive and file.

C-9 BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN UPDATE

Recommendation: Receive and file.

C-10 GOVERNANCE COMMITTEE OUTCOMES FROM APRIL 5, 2017 MEETING

Recommendation:

The Governance Committee recommends that the Board of Retirement adopt:

- (1) The Board of Retirement Charter, with revisions as approved by the Committee;
- (2) The Governance Committee Charter, with non-substantive revisions as approved by the Committee;
- (3) The SACRS Voting Authority Policy, with revisions as approved by the Committee;

- (4) The Communications Policy, with revisions as approved by the Committee; and
- (5) The Public Records Request Policy, with revisions as approved by the Committee.

C-11 TRAVEL REPORT – 2017 PUBLIC RETIREMENT INFORMATION SYSTEM MANAGEMENT (PRISM)

Recommendation: Receive and file.

C-12 BOARD COMMUNICATIONS

Recommendation: Receive and file.

C-13 LEGISLATIVE UPDATE

Recommendation: Receive and file.

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

INDIVIDUAL ITEMS AGENDA

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

I-2 AOCDS POST MANDATORY TRAINING BENEFIT CORRECTION

Presentation by Steve Delaney, Chief Executive Officer, OCERS; and Suzanne Jenike, Assistant Chief Executive Officer External Operations, OCERS

Recommendation: Take appropriate action.

I-3 PRELIMINARY DECEMBER 31, 2016 ACTUARIAL VALUATION

Presentation by Paul Angelo, Segal Consulting

Recommendation: Receive and file.

I-4 THE TRIENNIAL REVIEW OF ACTUARIAL ASSUMPTIONS – AN OVERVIEW

Presentation by Alan Milligan, Former CalPERS Chief Actuary

Recommendation: Receive and file.

I-5 **ROLE OF AUDIT COMMITTEE IN SELECTING EXTERNAL AUDITORS AND PROPOSED REVISIONS TO AUDIT COMMITTEE CHARTER**

Presentation by Gina Ratto, Chief Legal Officer, OCERS

Recommendation: Staff recommends that the Board of Retirement adopt revisions to the Audit Committee Charter to clarify the role of the Audit Committee in the selection and appointment of the actuarial auditor and financial auditor.

I-6 **SACRS PROPOSED BY-LAWS AMENDMENT TO ADD MEMBERSHIP CODE OF CONDUCT AND DIRECTION TO VOTING DELEGATE**

Presentation by Gina Ratto, Chief Legal Officer, OCERS

Recommendation: On the SACRS By-Laws Committee’s proposed amendment to the SACRS By-Laws, which would add a Membership Code of Conduct, and which will be presented to the SACRS membership for a vote at the SACRS business meeting on May 19, 2017, direct the OCERS voting delegate and alternate delegates to vote “no unless amended.”

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

DISABILITY APPLICATIONS/MEMBER APPEALS AGENDA

1:00 P.M.

NOTE: WHEN CONSIDERING DISABILITY RETIREMENT APPLICATIONS, THE BOARD MAY FIND IT NECESSARY TO DISCUSS MATTERS RELATING TO THE EVALUATION OF THE WORK PERFORMANCE OF AN EMPLOYEE WHO HAS APPLIED FOR DISABILITY RETIREMENT, OR DISCUSS COMPLAINTS OR CHARGES MADE AGAINST SUCH EMPLOYEE. IF THIS OCCURS, THE BOARD MAY ADJOURN TO A CLOSED SESSION TO DISCUSS SUCH MATTERS PURSUANT TO GOVERNMENT CODE SECTION 54957, UNLESS THE EMPLOYEE REQUESTS THAT THE DISCUSSION BE IN PUBLIC.

D-1: Darren Brown

Firefighter/Paramedic, Orange County Fire Authority

Date of employee filed application for service and non-service connected disability retirement:
04/13/2016

STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF APRIL 13, 2016. (SAFETY MEMBER) (D-1)

D-2: Dallas Ferrell

Weapons Instructor, Orange County Sheriff’s Department

Date of employee filed application for service and non-service* connected disability retirement:
09/24/2015

Date of employer filed application for service and non-service* connected disability retirement:
01/20/2016

STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF SEPTEMBER 24, 2015. (SAFETY MEMBER) (D-2)

D-3: Janel Garza

Comprehensive Care Nurse II, Orange County Social Services Agency

Date of employee filed application for non-service connected disability retirement: 03/16/2016

STAFF RECOMMENDATION IS TO GRANT NON-SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF NOVEMBER 4, 2011 (GENERAL MEMBER) (D-3)

D-4: Keith Godfrey

Sergeant, Orange County Sheriff's Department

Date of employee filed application for service connected disability retirement: 03/16/2016

STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF MARCH 7, 2014. (SAFETY MEMBER) (D-4)

D-5: Tommy Harris

Fire Apparatus Engineer, Orange County Fire Authority

Date of employee filed application for service connected disability retirement: 03/14/2016

STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF MARCH 30, 2016. (SAFETY MEMBER) (D-5)

D-6: Julie Pearson

Fire Apparatus Engineer, Orange County Fire Authority

Date of employee filed application for service connected disability retirement: 04/28/2016

STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF APRIL 28, 2016. (SAFETY MEMBER) (D-6)

D-7: Harry Trattner

Firefighter/Paramedic, Orange County Fire Authority

Date of employee filed application for service connected disability retirement: 04/18/2016

STAFF RECOMMENDATION IS TO GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF APRIL 18, 2016. (SAFETY MEMBER) (D-7)

D-8: Teresa Geldmacher

Senior Social Worker, Orange County Social Service Agency

Date of employee filed application for service connected disability retirement: 11/03/2015

STAFF RECOMMENDATION IS TO DENY SERVICE CONNECTED DISABILITY RETIREMENT DUE TO INSUFFICIENT EVIDENCE OF PERMANENT INCAPACITY. (GENERAL MEMBER) (D-8)

D-9: Max Chance

Sergeant, Orange County Sheriff's Department

Date of employee application for service and non-service connected disability retirement:
09/20/2012

STAFF RECOMMENDATION IS TO DISMISS WITHOUT PREJUDICE THE APPLICANT'S APPEAL OF THE DENIAL OF HIS APPLICATION FOR SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT. (SAFETY MEMBER) (D-9)

D-10: 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

STAFF RECOMMENDATION IS TO 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-10)

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

CLOSED SESSION ITEMS

**E-1 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.

E-2 PUBLIC EMPLOYMENT (GOVERNMENT CODE SECTION 54957(b))

Title: Chief Investment Officer

Adjourn pursuant to Government Code section 54957(b) to consider the employment of a Chief Investment Officer

Recommendation: Take appropriate action.

**E-3 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.

**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

**May 24, 2017
9:00 A.M.**

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

INVESTMENT MANAGER MONITORING SUBCOMMITTEE MEETING

**June 1, 2017
9:00 A.M.**

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

GOVERNANCE COMMITTEE MEETING

June 8, 2017

9:00 A.M.

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

AUDIT COMMITTEE MEETING

June 9, 2017

1:00 P.M.

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

REGULAR BOARD MEETING

June 12, 2017

9:00 A.M.

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

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
May 15, 2017
Application Notices*

<i>Member Name</i>	<i>Agency/Employer</i>	<i>Retirement Date</i>
Abad, Vielka	Health Care Agency	3/17/2017
Abramowicz, Stanley	Sheriff's Dept	3/17/2017
Anaya, Joe	Sheriff's Dept	3/3/2017
Anthony, Irma	Health Care Agency	3/3/2017
Araoz, Eduardo	Sheriff's Dept	3/17/2017
Ashton, Jay	Sheriff's Dept	3/3/2017
Ausilio, Colleen	Superior Court	3/4/2017
Baclawski, Jeffrey	Fire Authority (OCFA)	3/17/2017
Barden, Maria	Public Defender	3/17/2017
Barela, Richard	OC Public Works	3/17/2017
Beach, Steven	OC Public Works	3/25/2017
Bhatnagar, Apoorva	Auditor-Controller	3/13/2017
Bonano, Peter	Fire Authority (OCFA)	3/17/2017
Booth, Linda	Health Care Agency	3/3/2017
Brizuela, David	Superior Court	3/20/2017
Brizuela, Victoria	Superior Court	3/17/2017
Brown, Clinton	OC Public Works	3/17/2017
Byron, Carrie	John Wayne Airport	3/28/2017
Caler, David	Sheriff's Dept	3/17/2017
Campbell, Douglas	Sheriff's Dept	3/22/2017
Cheong, Kenneth	Health Care Agency	3/3/2017
Choi, Yeom	Sanitation District	3/3/2017
Clark, Catherine	OC Community Resources	3/3/2017
Collins, Mary	OC Public Works	3/17/2017
Concon, Eduardo	Sheriff's Dept	3/3/2017
Constantine, Joyce	OCTA	3/14/2017
Correa, Marylou	Superior Court	3/17/2017
Dalbey, Steven	Sheriff's Dept	3/3/2017
Danciulescu, Oinel	Sheriff's Dept	3/3/2017
Davis, Cathleen Sue	OCTA	3/17/2017
Dimeo, Victoria	Superior Court	3/17/2017
Dinh, Giang	County Executive Office (CEO)	3/11/2017
Doan, Nga	Probation	3/17/2017
Dodge, Douglas	Fire Authority (OCFA)	3/2/2017
Dysart, Doug	Sanitation District	3/16/2017
Farley, Loretta	OC Community Resources	3/16/2017
Franks, Steven	OC Community Resources	3/3/2017
Garcia, David	Sheriff's Dept	3/17/2017
Garner, Leslie	Superior Court	3/17/2017
Gross, Bradley	OC Community Resources	2/28/2017
Guffrey, Jeffrey	Sheriff's Dept	3/17/2017
Gulden, Dennis	Fire Authority (OCFA)	3/15/2017
Guzman, Laura	Health Care Agency	2/11/2017
Hack, Robert	Sheriff's Dept	3/17/2017
Hettick, Norah	Superior Court	3/17/2017
Holcomb, Janet	Health Care Agency	3/3/2017
Holdeman, Rosa	Superior Court	3/17/2017
Hudson, Jane	Probation	3/17/2017
Hutt, Patricia	Treasurer-Tax Collector	3/17/2017

<i>Member Name</i>	<i>Agency/Employer</i>	<i>Retirement Date</i>
Jarrell, Brad	Fire Authority (OCFA)	3/17/2017
Jelinek, Robert	OC Public Works	3/17/2017
Keese, Michael	Public Defender	2/24/2017
Konopa, Bruce	Assessor	3/3/2017
LaBarbera, Michael	Sheriff's Dept	3/17/2017
Laqunas, Pedro	Probation	3/17/2017
Laureles, Celia	Public Defender	3/3/2017
Le, Diane	Social Services Agency	3/17/2017
Levy, Irma	Sheriff's Dept	3/3/2017
Lovato, Christopher	Probation	3/17/2017
Lyons, John	Fire Authority (OCFA)	3/17/2017
McGowen, Timothy	Fire Authority (OCFA)	3/17/2017
Melendez, Roberto	Social Services Agency	3/31/2017
Middlesworth, Terri	Health Care Agency	3/2/2017
Mitchell, Latanya	Health Care Agency	3/1/2017
Munroe, Joanne	Social Services Agency	3/31/2017
Murray, Debi	Assessor	3/17/2017
Nguyen, Myra	Social Services Agency	3/3/2017
Nguyen, San	Social Services Agency	3/3/2017
Nguyen, Truyen	Social Services Agency	3/17/2017
Nicolae, Aura	Sheriff's Dept	3/17/2017
Nicolae, Teofil	Sheriff's Dept	3/17/2017
Ostrow, Betty	County Clerk/Recorder	3/17/2017
Otero, Silvia	Social Services Agency	3/14/2017
Pavlu, Bianca	Superior Court	3/3/2017
Perez, Concepcion	OC Public Works	3/17/2017
Perez, Manuel	OCTA	3/8/2017
Perreault, Michele	OC Community Resources	3/6/2017
Quach, Jamie	Health Care Agency	3/17/2017
Quick, Joanne	OC Public Works	3/3/2017
Ramirez, Gabriel	OC Community Resources	3/3/2017
Ramos, Chona Nancy	Superior Court	3/4/2017
Raposa, Vicky	Superior Court	3/17/2017
Reitan, Kim	Superior Court	3/3/2017
Richard, Aaron	Sheriff's Dept	3/17/2017
Rios, Rosa	District Attorney	3/28/2017
Roberts, Mark	Sanitation District	3/16/2017
Rohde, Paula	Social Services Agency	3/13/2017
Saucedo, Nancy	Superior Court	3/17/2017
Schleicher, Bernard	Health Care Agency	11/9/2016
Sellin, Devereau	OC Community Resources	3/3/2017
Serna, Marco	OC Public Works	3/3/2017
Serrato, Richard	OC Community Resources	3/3/2017
Sircar, Emma	Human Resources Department	3/4/2017
Smith, Kevin	Health Care Agency	3/17/2017
Smith-Varela, Mary	Social Services Agency	3/9/2017
Soto, David	OC Public Works	3/17/2017
Soydinc, Jon	Sheriff's Dept	3/3/2017
Stone, Joel	District Attorney	3/17/2017
Sutton, Linda	Sheriff's Dept	3/23/2017
Sutton, Robert	Sheriff's Dept	3/23/2017
Swanek, James	OC Public Works	3/3/2017
Tott, Janet	OC Public Works	3/3/2017
Van Wyke, Jerrald	Sheriff's Dept	3/23/2017
Vargas De Boc, Ruth	Social Services Agency	1/6/2017
Ventura, Steven	Fire Authority (OCFA)	3/17/2017
Vuong, Diem	Social Services Agency	3/3/2017

<i>Member Name</i>	<i>Agency/Employer</i>	<i>Retirement Date</i>
Weinberg, Mary	Social Services Agency	3/3/2017
Winger, Michael	Sheriff's Dept	3/17/2017
Winter, Jeffrey	District Attorney	3/17/2017
Yarbrough, Rosalinda	Probation	3/17/2017
Yellin, Lawrence	District Attorney	3/10/2017
Zickefoose, Eileen	Social Services Agency	3/17/2017
Zintgraff, Sam	Assessor	3/3/2017

*Orange County Employees Retirement
Retirement Board Meeting
May 15, 2017
Death Notices*

<i>Active Members</i>	<i>Agency/Employer</i>	<i>Date of Death</i>
Cruz, Lucille	OC Community Resources	4/5/2017

<i>Retired Members</i>	<i>Agency/Employer</i>	<i>Date of Death</i>
Aalbu, Roy	City of San Juan Capistrano	3/19/2017
Ayon, Rebecca	Social Services Agency	1/29/2017
Buell, William	OC Public Works	3/27/2017
Fely, Linda	Sheriff's Dept	4/13/2017
Howk, Claire	Health Care Agency	4/4/2017
Icenogle, Tommie	District Attorney	3/29/2017
Lawhead, Stuart	OC Public Works	3/28/2017
Lewis, John	County Clerk/Recorder	4/5/2017
Moore, Alphonso	OCTA	3/23/2017
Nickens, Margaret	Auditor-Controller	4/1/2017
Pacurar, Victor	UCI	4/16/2017
Rivera, Felix	Social Services Agency	3/21/2017
Roberts, Russell	OC Community Resources	2/19/2017
Roy, Gerda	Social Services Agency	03/26/2017
Sadler, Charles	OC Public Works	4/17/2017
Savala, Efrain	Sanitation District	4/13/2017
Schram, Lawrence	Sheriff's Dept	4/19/2017
Scoles, Don	Public Defender	3/25/2017
Sidebotham, James	Sheriff's Dept	10/13/1935
Woodall, James	OC Public Works	4/24/2017
Rowe, Brenda	Social Services Agency	4/5/2017

<i>Surviving Spouses</i>	<i>Date of Death</i>
Armstrong, Albert	2/14/2017

C-2

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

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

MINUTES

Chair Ball called the meeting to order at 8:59 a.m.

Attendance was as follows:

Present: David Ball, Chair; Eric Gilbert, Chuck Packard, Russell Baldwin, Shawn Dewane, Roger Hilton; Frank Eley and Shari Freidenrich

Also Present: Steve Delaney, Chief Executive Officer; Brenda Shott, Assistant CEO, Finance and Internal Operations; Suzanne Jenike, Assistant CEO, External Operations; David James, Director of Internal Audit; Gina Ratto, Chief Legal Officer; Lee Fink, Deputy Chief Legal Officer; Anthony Beltran, Visual Technician; Megan Cortez; Disability Coordinator; Cammy Danciu, Recording Secretary.

Guests: Harvey L. Leiderman, ReedSmith LLP

Absent: Chris Prevatt, Vice Chair; Wayne Lindholm

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. Ball pulled item C-10d for discussion.

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

The motion carried **unanimously**.

BENEFITS

C-1 MATERIAL DISTRIBUTED

Application Notices
Death Notices

April 17, 2017
April 17, 2017

Recommendation: Receive and file.

ADMINISTRATION

C-2 OPTION 4 RETIREMENT ELECTION – STANLEY ABRAMOWICZ

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

C-3 BOARD MEETINGS AND COMMITTEE MEETINGS

Regular Board Meeting Minutes
Audit Committee Meeting Minutes

March 20, 2017
March 29, 2017

Recommendation: Authorize meeting and approve minutes.

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

Recommendation: Receive and file.

C-5 QUIET PERIOD – NON-INVESTMENT CONTRACTS

Recommendation: Receive and file.

C-6 FIRST QUARTER 2017 EDUCATION AND TRAVEL EXPENSE REPORT

Recommendation: Receive and file.

C-7 2017 OCERS BOARD OF RETIREMENT COMMITTEE ASSIGNMENTS - UPDATED

Recommendation: Receive and file.

C-8 PROPOSED REVISIONS TO THE RECORD RETENTION POLICY AND GUIDELINES

Recommendation: Approve revisions to the Record Retention Policy and Guidelines.

C-9 SCHEDULED REVIEW OF BOARD POLICY

Recommendation: Approve the Acceptance and Reporting of Gifts Policy without revision.

C-10 AUDIT COMMITTEE OUTCOMES

Recommendation: Approve the Audit Committee recommendations for Items A, B, C, D, E, and F as recommended by the Audit Committee on March 29, 2017.

A. 2016 FINANCIAL STATEMENT AUDIT – ENTRANCE CONFERENCE

Recommendation: The Committee voted to receive and file MGO'S 2016 Audit Service Plan.

After discussion, a **motion** was made by Mr. Eley, **seconded** by Mr. Gilbert to receive and file Macias Gini & O'Connell, LLP's (MGO) 2016 Service Plan.

The **motion** passed unanimously.

B. AUDIT OF CITY OF SAN JUAN CAPISTRANO PAYROLL TRANSMITTALS

Recommendation: The Committee voted to receive and file the report Audit of City of San Juan Capistrano Payroll Transmittals.

After discussion, a **motion** was made by Mr. Gilbert, **seconded** by Mr. Eley to receive and file the audit of City of San Juan Capistrano Payroll Transmittals.

The **motion** passed unanimously.

C. CONSIDERATION OF REVISIONS TO THE INTERNAL AUDIT CHARTER AND AUDIT COMMITTEE CHARTER

Recommendation: The Committee voted to approve changes to the Internal Audit Charter and Audit Committee Charter.

After discussion, a **motion** was made by Mr. Gilbert, **seconded** by Mr. Eley to approve changes to the Audit Committee Charter and Internal Audit Charter and send to the Board for approval.

The **motion** passed unanimously.

D. DIRECTION FROM THE BOARD OF RETIREMENT – INVESTMENT FEES

Recommendation: The Committee directed Investments staff to present at the April 17, 2017 Regular Board meeting an educational presentation about the construction of OCERS' annual investment fee report and how it may help OCERS comply with California Government Code Section 7514.7 (A.B. No. 2833).

After discussion, the Committee directed staff to bring back to the Regular Board meeting a fee report and the presentation from the Investment staff.

E. STATUS OF INTERNAL AUDITS AND AUDIT PROJECTS

Recommendation: The Committee voted to receive and file the Update on Status of Internal Audits and Projects.

After discussion, a **motion** was made by Mr. Eley, **seconded** by Mr. Gilbert to receive and file.

The **motion** passed unanimously.

CLOSED SESSION ITEM

F. THREAT TO PUBLIC SERVICES OR FACILITIES (GOVERNMENT CODE SECTION 54957)

Recommendation: No reportable action taken.

No reportable action.

C-11 BOARD COMMUNICATION

Recommendation: Receive and file.

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

INDIVIDUAL ITEMS AGENDA

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

C-10d: Audit Committee Outcomes - Direction from the Board of Retirement – Investment Fees

Mr. Delaney spoke on behalf of the Audit Committee Chair, Mr. Packard, on the fee issue on budget adjustments. Noting that the question of how the OCERS budget will address fees will be forwarded to the Governance Committee, an adjustment to the recommendation was requested to change the motion to “receive and file” and bring the remaining question of crafting an effective fee report back to the Audit Committee before it comes to the full board.

Following discussion, a **motion** was made by Mr. Eley, **seconded** by Mr. Baldwin to receive and file item C-10d.

The motion carried **unanimously**.

I-4 SACRS BOARD OF DIRECTORS ELECTION 2017-2018 – DIRECTION TO VOTING DELEGATE

Presentation by Gina Ratto, Chief Legal Officer, OCERS

Recommendation: Consider the candidate slate set forth in the Final Ballot for the election of the SACRS Board of Directors and provide direction to the OCERS voting delegate and alternate delegates for the election to be held at the SACRS meeting on May 19, 2017.

Mr. Hilton presented the slate from SACRS:

- | | |
|----------------------------------|--|
| President | Dan McAllister, San Diego CERA
Recommended by SACRS Nominating Committee |
| Vice President | Gabe Rodrigues, Contra Costa CERA
Recommended by SACRS Nominating Committee |
| Treasurer* | Harry E. Hagen, Santa Barbara CERA
Recommended by SACRS Nominating Committee and Write-In Candidate |
| Secretary
(contested) | <ol style="list-style-type: none">1. Art Goulet, Ventura CERA
OCERS' (and others') nominated Write-In Candidate2. Kathryn Cavness, Mendocino CERA
Recommended by SACRS Nominating Committee |

Mr. Hilton stated that Art Goulet would like remain as Secretary.

Following discussion, a **motion** was made by Mr. Hilton, **seconded** by Mr. Baldwin to approve the slate of candidates for the SACRS Board of Directors, with Art Goulet as Secretary, and direct OCERS delegate to vote accordingly.

The motion carried **unanimously**.

Ms. Freidenrich arrived at 9:05am

Mr. Gilbert arrived at 9:07am

I-5 PROPOSED AMENDMENT TO SACRS' BY-LAWS
Presentation by Gina Ratto, Chief Legal Officer, OCERS

Recommendation: Request that SACRS By-Laws Committee consider an amendment to the SACRS By-Laws to clarify the role of the Nominating Committee in establishing the Recommended and Final ballots for SACRS' Board of Director Elections.

Ms. Ratto presented the proposed amendment to SACRS' by-laws to add clarity to the role of the nominating committee in preparing both ballots for the SCARS Board of Directors election.

Ms. Freidenrich asked how the SACRS write-in process works.

Ms. Ratto explained the two ballots/two-step process of how the nominations and write-in candidates are processed.

Mr. Ratto continued to explain that this item came to the board as a proposal to add clarity to the nominating committee on both ballots.

Ms. Freidenrich made a motion to seek more clarification on this item. The motion died for a lack of a second vote.

A **motion** was made by Mr. Eley, **seconded** by Mr. Baldwin to request that SACRS By-Laws Committee consider an amendment to the SACRS By-Laws to clarify the role of the Nominating Committee in establishing the Recommended and Final ballot for SACRS' Board of Director Elections. The motion carried **6-0** with voting as follows:

<u>AYES</u>	<u>NAYS</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
Mr. Eley		Ms. Freidenrich	Mr. Lindholm
Mr. Hilton			Mr. Prevatt
Mr. Baldwin			Mr. Packard
Mr. Gilbert			
Mr. Dewane			
Chair Ball			

Ms. Freidenrich abstained from this vote due to being absent for part of the discussion.

I-3 OCERS VISION AND VALUES

Presentation by Steve Delaney, Chief Executive Officer, OCERS

Recommendation: Take appropriate action.

Mr. Delaney presented OCERS Vision and Values.

Mr. Packard arrived at 9:30am

Mr. Eley asked what the difference is between a Mission, Vision and Values statement.

Mr. Delaney explained that a Mission statement answers the pivotal question "What is OCERS business?" A Vision statement should answer the basic question, "What do we wish to become?" A Values statement is a declaration that informs the members and staff of this agency's top priorities and outlines its core beliefs.

Each board member expressed his or her preferred statements and gave input for what OCERS Mission, Vision and Values statement should be.

Mr. Ball asked Mr. Delaney to take the Board's suggestions and come back with an updated presentation at the June 12, 2017 Regular Board meeting.

Following discussion, a **motion** was made by Mr. Hilton, **seconded** by Mr. Eley to receive and file OCERS Vision and Values.

The motion carried **unanimously**.

The Board recessed for break at 9:54a.m.

The Board reconvened from break at 10:03a.m.

I-2 ANNUAL BROWN ACT AND CONFLICTS OF INTEREST EDUCATION

Presentation by Harvey Leiderman, ReedSmith, LLP

Recommendation: Receive and file.

Mr. Leiderman presented the annual Brown Act and Conflict of Interest Education.

Mr. Hilton stepped out at 10:44am

Mr. Hilton returned at 10:46am

The Board recessed for break at 10:55a.m.

The Board reconvened from break at 11:00a.m.

Following discussion, a **motion** was made by Mr. Eley, **seconded** by Mr. Baldwin to receive and file the annual Brown Act and conflicts of interest education.

The motion carried **unanimously**.

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

DISABILITY APPLICATIONS/MEMBER APPEALS AGENDA

11:00 A.M.

NOTE: WHEN CONSIDERING DISABILITY RETIREMENT APPLICATIONS, THE BOARD MAY FIND IT NECESSARY TO DISCUSS MATTERS RELATING TO THE EVALUATION OF THE WORK PERFORMANCE OF AN EMPLOYEE WHO HAS APPLIED FOR DISABILITY RETIREMENT, OR DISCUSS COMPLAINTS OR CHARGES MADE AGAINST SUCH EMPLOYEE. IF THIS OCCURS, THE BOARD MAY ADJOURN TO A CLOSED SESSION TO DISCUSS SUCH MATTERS PURSUANT TO GOVERNMENT CODE SECTION 54957, UNLESS THE EMPLOYEE REQUESTS THAT THE DISCUSSION BE IN PUBLIC.

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

D-1: Debbie L. Brown-Vasquez
Group Counselor I, Orange County Social Services Agency

Date of employer filed application for service and non-service connected disability retirement:
03/10/2016

Date of employee filed application for service and non-service connected disability retirement:
06/07/2016

GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF MARCH 18, 2016, THE DAY FOLLOWING THE LAST DAY OF REGULAR COMPENSATION AS A GROUP COUNSELOR I. AND TO FIND THE APPLICANT IS CAPABLE OF PERFORMING OTHER DUTIES IN THE SERVICE OF THE COUNTY OF ORANGE PURSUANT TO GOVERNMENT CODE SECTION 31725.65 AND TO GRANT A SUPPLEMENTAL DISABILITY RETIREMENT PAYMENT ALLOWANCE IN THE AMOUNT OF THE SALARY DIFFERENCE BETWEEN THE HIGHER AND LOWER PAYING POSITIONS EFFECTIVE MARCH 18, 2016, THE DATE OF THE POSITION CHANGE UNTIL THE LAST DAY OF COMPENSATION. (GENERAL MEMBER) (D-1)

Following discussion, a **motion** was made by Mr. Eley, **seconded** by Mr. Packard to grant service connected disability retirement with an effective date of March 18, 2016, the day following the last day of regular compensation as a Group Counselor I; to find the applicant is capable of performing other duties in the service of the county of orange pursuant to government code section 31725.65; and to grant a supplemental disability retirement payment allowance in the amount of the salary difference between the higher and lower paying positions effective march 18, 2016, the date of the position change until the last day of compensation. The motion carried **8-0** with voting as follows:

AYES

Mr. Dewane
Mr. Eley
Ms. Freidenrich
Mr. Hilton
Mr. Packard
Mr. Baldwin
Mr. Gilbert
Chair Ball

NAYS

ABSTAIN

ABSENT

Mr. Lindholm
Mr. Prevatt

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

D-2: Janet Colston-Nill

Park Ranger II, Orange County Community Resources

Date of employee filed application for service connected disability retirement: 02/10/2015

GRANT SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF JULY 12, 2013, THE DAY FOLLOWING THE LAST DAY OF REGULAR COMPENSATION AS A PARK RANGER II. AND TO FIND THE APPLICANT IS CAPABLE OF PERFORMING OTHER DUTIES IN THE SERVICE OF ORANGE COUNTY COMMUNITY RESOURCES PURSUANT TO GOVERNMENT CODE SECTION 31725.65. AND TO GRANT A SUPPLEMENTAL DISABILITY RETIREMENT PAYMENT ALLOWANCE IN THE AMOUNT OF THE SALARY DIFFERENCE BETWEEN THE HIGHER AND LOWER PAYING POSITIONS EFFECTIVE JULY 12, 2013, THE DATE OF THE POSITION CHANGE UNTIL THE DATE OF HER SERVICE RETIREMENT ON OCTOBER 14, 2014. (GENERAL MEMBER) (D-2)

Ms. Freidenrich stated that neither of the injuries of the applicant were reported immediately and asked what does staff do to check or verify information.

Ms. Cortez stated that staff reviews medical records as well as all other records. Once the doctors review the medical records as well as the job description, they determine their recommendation.

Ms. Jenike stated that in this case, the doctor looked at the progression of the injury as Ms. Colston-Nill reported different injuries at different times while on the job.

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Eley to grant service connected disability retirement with an effective date of July 12, 2013, the day following the last day of regular compensation as a Park Ranger II; and to find the applicant is capable of performing other duties in the service of Orange County Community Resources pursuant to government code section 31725.65; and to grant a supplemental disability retirement payment allowance in the amount of the salary difference between the higher and lower paying positions effective July 12, 2013, the date of the position change until the date of her service retirement on October 14, 2014. The motion carried **8-0** with voting as follows:

AYES

Mr. Dewane
Mr. Eley
Ms. Freidenrich
Mr. Hilton
Mr. Packard
Mr. Baldwin
Mr. Gilbert
Chair Ball

NAYS

ABSTAIN

ABSENT

Mr. Lindholm
Mr. Prevatt

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

D-3: Luis Fernandez

Fire Apparatus Engineer, Orange County Fire Authority

Date of employee filed application for service connected disability retirement: 02/27/2015

GRANT SERVICE CONNECTED DISABILITY RETIREMENT PURSUANT TO GOVERNMENT CODE SECTION 31720.5 (HEART PRESUMPTION) WITH AN EFFECTIVE DATE OF FEBRUARY 27, 2015. (SAFETY MEMBER) (D-3)

Mr. Hilton asked staff to explain the heart presumption provision of the law as well as explain why the service connected disability belongs to OCERS and not to CALPERS.

Mr. Hilton stated that optically, this situation doesn't look good even though everyone involved did what they were supposed to do.

Ms. Ratto stated that the statute isn't clear and doesn't contemplate a situation like this.

Ms. Ratto discussed the optics, the timing, and the interagency financial motives.

Ms. Jenike explained that Mr. Fernandez was hired in 2014 and did not establish reciprocity. Mr. Fernandez was hired by OCFA with pre-existing conditions, and due to the heart presumption, it is presumed that his injury is job caused. Mr. Fernandez does not need to have any number of years as a requirement to be eligible for a service connected disability.

Following discussion, a **motion** was made by Mr. Gilbert, **seconded** by Mr. Dewane to grant service connected disability retirement pursuant to Government Code section 31720.5 (heart presumption) with an effective date of February 27, 2015. The motion carried **8-0** with voting as follows:

AYES

Mr. Dewane
Mr. Eley
Ms. Freidenrich
Mr. Hilton
Mr. Packard
Mr. Baldwin
Mr. Gilbert
Chair Ball

NAYS

ABSTAIN

ABSENT

Mr. Lindholm
Mr. Prevatt

D-4: Janell Garza

Comprehensive Care Nurse II, Orange County Social Services Agency

Date of employee filed application for non-service connected disability retirement: 03/16/2016

STAFF RECOMMENDATION IS TO GRANT NON-SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF MARCH 16, 2016. (GENERAL MEMBER) (D-4)

Item D-4 was pulled from the agenda at the member's request.

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

D-5: Albert Rouwenhorst

Utility Worker/Driver, Orange County Community Resources

Date of employee filed application for non-service connected disability retirement: 01/25/2017

STAFF RECOMMENDATION IS TO GRANT NON-SERVICE CONNECTED DISABILITY RETIREMENT WITH AN EFFECTIVE DATE OF MARCH 17, 2017. (GENERAL MEMBER) (D-5)

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Dewane to grant non-service connected disability retirement with an effective date of March 17, 2017. The motion carried **8-0** with voting as follows:

AYES

Mr. Dewane
Mr. Eley
Ms. Freidenrich
Mr. Hilton
Mr. Packard
Mr. Baldwin
Mr. Gilbert
Chair Ball

NAYS

ABSTAIN

ABSENT

Mr. Lindholm
Mr. Prevatt

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

D-6: Carol Thompson

Institutional Cook, Orange County Sheriff's Department

Date of employee filed application for service and non-service connected disability retirement:
10/29/2012

STAFF RECOMMENDATION IS TO DENY SERVICE CONNECTED DISABILITY RETIREMENT DUE TO INSUFFICIENT EVIDENCE TO WARRANT SERVICE CONNECTED DISABILITY. (GENERAL MEMBER) (D-6)

Following discussion, a **motion** was made by Mr. Packard, **seconded** by Mr. Dewane to deny service connected disability retirement due to insufficient evidence to warrant service connected disability. The motion carried **8-0** with voting as follows:

AYES

Mr. Dewane
Mr. Eley
Ms. Freidenrich
Mr. Hilton
Mr. Packard
Mr. Baldwin
Mr. Gilbert
Chair Ball

NAYS

ABSTAIN

ABSENT

Mr. Lindholm
Mr. Prevatt

D-7: Max Chance

Sergeant, Orange County Sheriff's Department

Date of employee application for service and non-service connected disability retirement:
09/20/2012

STAFF RECOMMENDATION IS TO DISMISS WITHOUT PREJUDICE THE APPLICANT'S APPLICATION FOR SERVICE AND NON-SERVICE CONNECTED DISABILITY RETIREMENT. (SAFETY MEMBER) (D-7)

Item D-7 was pulled from the agenda.

CLOSED SESSION ITEMS

E-1 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.

E-2 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.

No reportable action taken.

PUBLIC COMMENTS:

None

CHIEF EXECUTIVE OFFICER/STAFF COMMENTS:

Mr. Delaney informed the Board and the public that OCERS staff will be coming to the Board in the month of May to discuss a correction that will need to be made to certain retiree benefits. This correction is very narrowly focused, applying only to County of Orange Safety members. Specifically, OCERS has found that over the past 10 years approximately, 140 retired members were overpaid by an average of about \$50 a month. The actual range of overpayment runs from \$6 to \$376 per month. An additional 70 or so members were underpaid by a similar amount. OCERS will begin notifying impacted members later this week, letting them know that this topic will be on the Board's agenda for initial discussion on May 15, with a return for possible action in June.

BOARD MEMBER COMMENTS:

None

COUNSEL COMMENTS:

None

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

Active Members:

Gonzalez, Beatriz

Retired Members:

Abernathy, Barbara
Bigger, Patricia
Bowen, Levin
Campbell, Dorris
Castorena, Janet
Clark, Jean
Coburn, Douglas
Dao, Tuong
Davis, Betty

Fernandez, Bertha
Ford, Ramona
Germain-Wachs, Susan
Glaab, Paul
Goad, Vernon
Hartnett, Patricia
Henderson, Arlie
Henderson, Harold
Hunt, Patricia
Hurd, Donna
Kettenburg, Norma
Kott, Kathleen
Krazinski, Sandra
Lawrence, Joan
Leake, George
Lepham, Trina
Mahady, William
Martinez, Emma
Masuda, Marjorie
Miller, Jeffrey
Mizu, Alyce
Mower, Philip
Nichols, Marina
Olson, Milton
Overby, Robert
Palomarez, Rosa
Penkoff, Stephen
Picazo, Delia
Rounds, Sharon
Schwartz, Mark
Towns, Shane
Williams, Elvin
Willingham, Donald

Surviving Spouses:

Adelsperger, Nannette
Edwards, Sally
Fishel, Shirley
Gloor, Henry
Hagerman, Richardi
Hudson, Gail
Marquet, Barbara
Mckee, Alberta
Perona, Carl
Strom, Helen
Tiernan, Florence

There being no further business to bring before the Board, the meeting adjourned at 1:31p.m.

Submitted by:

Approved by:

Steve Delaney
Secretary to the Board

David Ball
Chairman

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

**GOVERNANCE COMMITTEE MEETING
April 5, 2017
9:00 a.m.**

MINUTES

The Chair called the meeting to order at 9:08 a.m. Attendance was as follows:

Present: Roger Hilton, Chair; Shawn Dewane, Vice Chair; David Ball; Chris Prevatt

Staff: Steve Delaney, Chief Executive Officer; Suzanne Jenike, Assistant CEO, External Operations; Gina Ratto, Chief Legal Officer; Cammy Danciu, Recording Secretary; Anthony Beltran, Audio Visual Technician

A. SCHEDULED REVIEW OF CHARTERS AND POLICIES

Presented by Gina M. Ratto, Chief Legal Officer

1. Board of Retirement Charter

Recommendation: Approve, and recommend that the Board approve, proposed revisions to the *Board of Retirement Charter*.

Ms. Ratto presented to the Committee the proposed revisions to the *Board of Retirement Charter*.

During discussion, the Committee proposed additional modifications to the *Board of Retirement Charter*.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Dewane, to approve and move forward to the Board the proposed revisions to the *Board of Retirement Charter* with additional revisions made by the Committee.

In addition, the Committee directed staff to present the Audit Committee Charter to the Board at the same time the Board is presented with the revisions to the Board Charter, with changes to the Audit Committee Charter to clarify that the Committee is responsible for the solicitation, interviewing and vetting of candidates for the Actuarial Auditor and the Financial Auditor, and for recommending the service provider for approval by the Board. However, the Audit Committee does not have authority to appoint or retain the Actuarial Auditor or Financial Auditor.

The **motion passed unanimously.**

2. Governance Committee Charter

Recommendation: Approve, and recommend that the Board approve, the *Governance Committee Charter* with no revisions.

Ms. Ratto presented to the Committee the *Governance Committee Charter* with no proposed revisions.

Following discussion, a **motion** was made by Mr. Ball, **seconded** by Mr. Prevatt, to approve and move forward to the Board the *Governance Committee Charter*.

The **motion passed unanimously.**

3. SACRS Voting Authority Policy

Recommendation: Approve, and recommend that the Board approve, proposed revisions to the *SACRS Voting Authority Policy*.

Ms. Ratto presented recommended revisions to the *SACRS Voting Authority Policy*.

During discussion, the Committee directed staff to add a clarification to the Policy to state that the voting delegate and designated alternate delegate cannot vote on an item that would obligate OCERS financially, other than with respect to SACRS dues.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Ball, to approve and move forward to the Board the proposed revisions to the *SACRS Voting Authority Policy* with additional revisions made by the Committee.

The **motion passed unanimously.**

B. PROPOSED REVISIONS TO COMMUNICATIONS POLICY AND PUBLIC RECORDS REQUEST POLICY

Presented by Gina M. Ratto, Chief Legal Officer

Recommendation: Approve, and recommend that the Board approve, proposed revisions to the *Communications Policy* and the *Public Records Request Policy*.

Ms. Ratto presented recommended revisions to the Communications Policy and Public Records Request Policy in light of a recent decision of the California Supreme Court in the *City of San Jose* case. Ms. Ratto discussed the proposed additions to both policies.

Mr. Hilton directed staff to add stronger language to the Public Records Request Policy to clarify that it is the responsibility of each Board member to search his or her own personal email accounts and devices for records responsive to a public records request.

Following discussion, a **motion** was made by Mr. Prevatt, **seconded** by Mr. Ball to approve and move forward to the Board the proposed revisions to the *Communications Policy* and the *Public Records Request Policy*, with the additional revision to the Public Records Request Policy made by the Committee.

The **motion passed unanimously.**

The meeting adjourned at 10:40 a.m.

Governance Committee Meeting
April 5, 2017

PUBLIC COMMENTS:

COMMITTEE MEMBER COMMENTS

CHIEF EXECUTIVE OFFICER/STAFF COMMENTS:

COUNSEL COMMENTS:

The next Committee meeting was set for June 8, 2017 at 10:00 a.m.

Submitted by:

Steve Delaney
Secretary to the Board

Approved by:

Roger Hilton, Chair

C-3

Memorandum

DATE: May 15, 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

JUNE

Approve December 31, 2016 Actuarial Valuation
2017 – 2019 Strategic Plan – Quarterly Review
2017 Annual Business Plan – Mid-Year Review
Segal GASB 68 Material
2016 Audited Financial Statements And Comprehensive Annual Financial Report
Strategic Planning Workshop – Proposed Agenda
OCERS Vision and Values

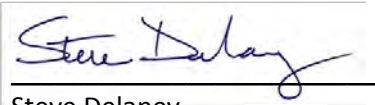
JULY

2016 Actuarial Experience Study (Economic and Demographic)
Travel and Training Expense – Final
Strategic Planning Agenda – Final
Early Payment of Contributions for fiscal year 2018-2019

AUGUST

OCERS by the Numbers
Evolution of OCERS UAAL
Employer/Employee Contribution Matrix
Member Services Annual Report
Disability Program Review
Public Employee Pension Reform Act (PEPRA) Informational (Suzanne Jenike)
*Cost and Savings (Segal Consulting)

Submitted by:

A handwritten signature in blue ink that reads "Steve Delaney". The signature is written in a cursive style and is contained within a rectangular box.

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-4

Memorandum

DATE: May 1, 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.

- An RFP for Actuarial Auditor services was sent out March 1st. Responses received April 3rd. Currently evaluating proposals.
- An RFP for Securities Litigation Monitoring services was distributed March 15th. Responses received April 7th. Currently evaluating proposals.



Memorandum

Submitted by:

A handwritten signature in blue ink that reads "Steve Delaney". The signature is written in a cursive style and is positioned above a horizontal line.

Steve Delaney
Chief Executive Officer

C-5

Memorandum

DATE: May 3, 2017
TO: Members of the Board of Retirement
FROM: Tracy Bowman, Director of Finance
SUBJECT: FIRST QUARTER 2017 BUDGET TO ACTUALS REPORT

Recommendation

Receive and file.

Highlights

First Quarter Target: 25% Used /75% Remaining

	Actuals to Date	Annual Budget	Budget \$ Remaining	Budget % Remaining
Administrative Budget				
Personnel Costs	\$2,425,167	\$10,998,091	\$8,572,924	77.9%
Services and Supplies	1,054,365	6,072,360	5,017,995	82.6%
Capital Expenditures	221,617	1,293,000	1,071,383	82.9%
Administrative Expense Total	<u>\$3,701,149</u>	<u>\$18,363,451</u>	<u>\$14,662,302</u>	<u>79.8%</u>
Investment Budget				
Personnel Costs	\$272,397	\$1,419,337	\$1,146,940	80.8%
Services and Supplies	13,552	150,757	137,205	91.0%
Professional Services*	15,870,638	41,221,555	25,350,917	61.5%
Investment Expense Total	<u>\$16,156,587</u>	<u>\$42,791,649</u>	<u>\$26,635,062</u>	<u>62.2%</u>
Grand Total				
Personnel Costs	\$2,697,564	\$12,417,428	\$9,719,864	78.3%
Services and Supplies	1,067,917	6,223,117	5,155,200	82.8%
Capital Expenditures-Administrative	221,617	1,293,000	1,071,383	82.9%
Professional Services-Investments*	15,870,638	41,221,555	25,350,917	61.5%
Grand Total	<u>\$19,857,736</u>	<u>\$61,155,100</u>	<u>\$41,297,364</u>	<u>67.5%</u>

* Professional Services – Investments consists primarily of investment management fees, both direct and known at-source fees. Staff has been directed by the OCERS Board to work with the Governance Committee to evaluate ways to improve how these fees are reported; in the meantime, these fees are being budgeted and reported as they have historically been presented in the quarterly budget to actual reports.

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 three months ended March 31, 2017, year-to-date actual administrative expenses were \$3,701,149 or 20.2% of the \$18,363,451 administrative budget and below the 25% target set for the end of the first quarter (three months ended March 31, 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 Three Months Ended March 31, 2017**

	Actuals to Date	Annual Budget	Balance Remaining	% of Budget Used	Prorated Budget*	Prorated Budget vs. Actuals (Over)/Under
Personnel Costs	\$2,425,167	\$10,998,091	\$8,572,924	22.1%	\$2,749,523	324,356
Services and Supplies						
Bldg. Prop. Mgmt./Maintenance	115,635	682,000	566,365	17.0%	170,500	54,865
Equipment Lease	14,325	90,000	75,675	15.9%	22,500	8,175
Equipment Maintenance	140,171	680,400	540,229	20.6%	170,100	29,929
Equipment/Software Expenses	54,089	149,500	95,411	36.2%	37,375	(16,714)
Legal Services	90,120	625,000	534,880	14.4%	156,250	66,130
Meetings & Mileage	5,262	57,350	52,088	9.2%	14,338	9,076
Membership/Periodicals	14,388	137,825	123,437	10.4%	34,456	20,068
Office Supplies	12,071	47,000	34,929	25.7%	11,750	(321)
Postage	20,585	163,000	142,415	12.6%	40,750	20,165
Printing	37,045	99,000	61,955	37.4%	24,750	(12,295)
Professional Services	471,169	2,800,200	2,329,031	16.8%	700,050	228,881
Telephone	30,556	80,000	49,444	38.2%	20,000	(10,556)
Training	48,949	461,085	412,136	10.6%	115,271	66,322
Services and Supplies	1,054,365	6,072,360	5,017,995	17.4%	1,518,090	463,725
Administrative Expense-Sub Total	3,479,532	17,070,451	13,590,919	20.4%	4,267,613	788,081
Capital Expenditures**	221,617	1,293,000	1,071,383	17.1%	323,250	101,633
Administrative Expense Total	\$3,701,149	\$18,363,451	\$14,662,302	20.2%	\$4,590,863	\$889,714

*Prorated budget represents 25% (3 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 first quarter were approximately \$2.4 million or 22.1% of the annual budget and within the 25% target for budget used for this category. These expenses are slightly below budget due to several positions that were vacant in the Legal, Finance, Member Services, and IT departments, including an Accountant Auditor, three Accounting Technicians, a Retirement Benefits Supervisor, and a Senior IT Applications Developer, which were filled during the first quarter.

Services and Supplies - Administrative

Total expenditures for services and supplies were approximately \$1.1 million or 17.4% of the annual budget for this category. The variance of \$463,725 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 17% of the annual budget and were lower than the pro-rated budget by \$54,865. 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 15.9% of the annual budget and lower than the pro-rated budget by \$8,175. This is attributable to lease costs coming in less than budget.

- Equipment Maintenance costs are at 20.6% of the annual budget and are lower than the pro-rated budget by \$29,929. 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 36.2% of the annual budget and is higher than the pro-rated budget by \$16,714. This is primarily due to the timing of costs relating to the purchase of computers and monitors, as well as renewal of licensing for the Board Portal.
- Legal Services are at 14.4% of the annual budget and are lower than the pro-rated budget by \$66,130. This is primarily due to budgeted legal services being utilized on an as-needed basis.
- Meetings & Mileage expense is at 9.2% of the annual budget and is lower than the pro-rated budget by \$9,076. This is primarily due to budgeted meetings that have not yet been expensed, including manager visits to Southern California Retirement Systems and travel for plan sponsor audits.
- Memberships/Periodical expense is at 10.4% of the annual budget and lower than the pro-rated budget by \$20,068. This is mainly due to the timing of membership and periodical expenses that will occur in later quarters, including IT's subscription fees for Gartner.
- Office Supplies utilized 25.7% of the annual budget and is slightly higher than the pro-rated budget by \$321. This expense is within the quarterly target for this category.
- Postage is at 12.6% of the annual budget and lower than the pro-rated budget by \$20,165. This is attributable to the timing of bulk mailings to Plan members and the use of postage on an as-needed basis.
- Printing expense is at 37.4% of the annual budget and higher than the pro-rated budget by \$12,295. This is primarily due to the timing of printing both the winter and spring quarterly newsletters during the first quarter.
- Professional Services utilized 16.8% of the annual budget. Expenses are lower than the pro-rated budget by \$228,881 primarily due to the timing of expenses for various IT-related software consulting, administrative hearing and writ of mandate process fees, financial audit costs, as well as costs used on an as-needed-basis, such as CEO contingency.
- Telephone expense is at 38.2% of the annual budget and higher than the pro-rated budget by \$10,556. This is primarily due to telephone rate increases incurred as a result of not signing up for additional long term agreements with telephone service provider as future Business Continuity/Disaster Recovery needs are being determined.
- Training utilized 10.6% of the annual budget and is lower than the pro-rated budget by \$66,322. 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, management succession staff training, 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 first quarter are \$221,617 or 17.1% of the annual budget for this category. The variance of \$101,633 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 three months ended March 31, 2017, year-to-date actual investment expenses are approximately \$16.2 million or 37.8% of the \$42,791,649 annual investment budget and over budget by approximately \$5.5 million. A summary of all investment expenses and explanations of significant variances are provided below:

Summary of all Investment Expenses For the Three Months Ended March 31, 2017

	Actuals to Date	Annual Budget	Balance Remaining	% of Budget Used	Prorated Budget*	Prorated Budget vs. Actuals (Over)/Under
Personnel Costs	\$272,397	\$1,419,337	\$1,146,940	19.2%	\$354,834	\$82,437
Services and Supplies						
Due Diligence	1,254	44,110	42,856	2.8%	11,028	9,774
Equipment/Software Expenses	6,270	25,680	19,410	24.4%	6,420	150
Meetings & Mileage	2,096	10,000	7,904	21.0%	2,500	404
Membership/Periodicals	3,540	11,507	7,967	30.8%	2,877	(663)
Training	392	59,460	59,068	0.7%	14,865	14,473
Services and Supplies	13,552	150,757	137,205	9.0%	37,690	24,138
Investment Expense-Sub Total	285,949	1,570,094	1,284,145	18.2%	392,524	106,575
Professional Services**	15,870,638	41,221,555	25,350,917	38.5%	10,305,389	(5,565,249)
Investment Expense Total	\$16,156,587	\$42,791,649	\$26,635,062	37.8%	\$10,697,913	(\$5,458,674)

*Prorated budget represents 25% (3 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 \$1.4 million and \$275,000, respectively.

Personnel Costs - Investments

Personnel costs are \$272,397 or 19.2% of the annual budget for this category. The expenses are slightly lower than the 25% target primarily due to the currently vacant CIO position.

Services and Supplies - Investments

Services and Supplies expenditures are \$13,552 or 9% of the annual budget for this category. This is primarily due to expenses coming in below the 25% target for training and due diligence travel due to timing of budgeted travel that will occur throughout the year. Also, Memberships/Periodicals were slightly higher than the prorated budget by \$663 due to the timing of membership expense occurring in the first quarter.

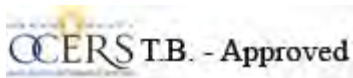
Professional Services - Investments

Professional services, which consist primarily of investment management fees, are approximately \$15.9 million or 38.5% of the annual budget and higher than pro-rated budget by approximately \$5.6 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. As discussed at both the March 20, 2017 Regular Board meeting and March 29, 2017 Audit Committee meeting, staff will evaluate ways to improve the usefulness of how we budget and report investment management fees so that in the future fees reported are more meaningful and transparent.

Conclusion:

Through the end of the first quarter, the Administrative and Investment budgets were below and in excess of the 25% target of their annual budgets at 20.2% and 37.8%, respectively. The Investment budget exceeded the annual budget primarily due to higher than expected investment management fees being reported by certain investment managers and staff will continue to monitor and evaluate ways to improve the reporting of these fees. In addition, actual Administrative expenses were within the 21 basis point test and 18 basis point test as budgeted.

Submitted by:



Tracy Bowman
Director of Finance

C-6

Memorandum

DATE: May 3, 2017
TO: Members of the Board of Retirement
FROM: Tracy Bowman, Director of Finance
SUBJECT: **FIRST QUARTER UNAUDITED FINANCIAL STATEMENTS FOR THREE MONTHS ENDED MARCH 31, 2017**

Recommendation

Receive and file.

Background/Discussion

The attached financial statements reflect the unaudited activity for the three months ended March 31, 2017. These statements are unaudited and are not the official statements of OCERS. The following statements represent a review of the progress to date for the first quarter of 2017. The official financial statements of OCERS are included in the Comprehensive Annual Financial Report (CAFR) which will be available for the year ended December 31, 2016 after the completion of the 2016 year-end audit in June 2017.

Summary

Fiduciary Net Position

As of March 31, 2017, the net position restricted for pension and other postemployment benefits is \$13.6 billion, an increase of \$1.6 billion from March 31, 2016. The change is a result of an increase in total assets of \$1.6 billion off-set by a slight increase in total liabilities of \$6.1 million as described below:

The \$1.6 billion increase in total assets can be attributed to a \$1.7 billion increase in investments at fair value, a \$15 million increase in total cash and cash equivalents, off-set by decreases of \$106 million in receivables, and \$2 million in capital assets.

Investments at fair value increased \$1.6 billion. The increase can be attributed to earnings from interest and dividends, and investment of proceeds received from prepaid contributions, and increases in the net appreciation of investments at fair value. The overall change within the individual investment categories is attributed to OCERS' Investment Committee adopting a more simplified asset allocation policy on January 25, 2017. The new policy will 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 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 domestic equity, international equity and domestic fixed income categories were increased while allocation of assets to real estate, real return and absolute return investment categories were decreased.

The increase of \$15 million in cash and cash equivalents is primarily due to the timing of investing the fiscal year 2016/2017 prepaid contributions and employee and employer contributions received during the quarter.

The decrease in the receivable balance is primarily related to the timing of pending securities sales which decreased by \$98 million. Investment income receivables and contribution receivables have increased by \$6 million and \$1 million, respectively.

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 through March is \$572,000 with the majority of the expense related to V3.

The increase of \$6 million in total liabilities as of March 31, 2017 compared to March 31, 2016 can be attributed to decreases of \$46 million in unsettled trades at the end of the quarter, offset by increases in prepaid contributions of \$42 million and liabilities related to the securities lending program of \$4 million. Retiree payroll payable increased \$3 million, gradual increases to retiree payroll payable are 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 March 31, 2017 has increased by \$1.6 billion, or 13.4 percent, when compared to the same period ending March 31, 2016. The increase can be attributed to higher returns in 2016 and the first quarter of 2017. For the quarter ended March 31, 2017 the preliminary return is 4.2 percent, compared to a preliminary return of 0.69 percent for the first quarter in 2016.

Net investment income for the quarter ended March 31, 2017 is \$526 million versus \$83 million for the quarter ended March 31, 2016, an increase of \$443 million. The majority of the increase is related to the net appreciation in fair value of investments. Additionally, interest, dividends, and real estate income increased. All major investment categories experienced positive returns in the first quarter of 2017. The continued diversification of the investment portfolio is positioned to mitigate the downside risk to preserve principal.

Total deductions from fiduciary net position increased 5.9 percent, or \$11 million, from the previous year. Participant benefits increased by \$10.0 million, which 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. Death benefits and members withdrawals and refunds also increased. Administrative expenses decreased slightly, primarily in the professional services category.

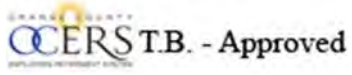
Other Supporting Schedules

In addition to the basic financial statements for the three months ended March 31, 2017, the following supporting schedules are provided for additional information pertaining to OCERS:

- Total Fund Reserves
- Pension Trust Fund Contributions
- Schedule of Investment Expenses
- Schedule of Administrative Expenses

- Administrative Expense Compared to Actuarial Accrued Liability (21 basis points test).

Submitted by:



Tracy Bowman
Director of Finance



ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM

Unaudited Financial Statements

For the Three Months Ended March 31, 2017

ORANGE COUNTY EMPLOYEES RETIREMENT SYSTEM

Unaudited Financial Statements
For the Three Months Ended March 31, 2017

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Statement of Fiduciary Net Position (Unaudited)
As of March 31, 2017
(with summarized comparative amounts as of March 31, 2016)
(Dollars in Thousands)

	<u>Pension Trust Fund</u>	<u>Health Care Fund- County</u>	<u>Health Care Fund- OCFA</u>	<u>OPEB 115 Agency Fund</u>	<u>Total Fund</u>	<u>Comparative Totals 2016</u>
ASSETS						
Cash and Short-Term Investments						
Cash and Cash Equivalents	\$ 637,301	\$ 10,783	\$ 1,755	\$ 205	\$ 650,044	\$ 639,521
Securities Lending Collateral	<u>147,152</u>	<u>2,490</u>	<u>405</u>	<u>-</u>	<u>150,047</u>	<u>145,773</u>
Total Cash and Short-Term Investments	784,453	13,273	2,160	205	800,091	785,294
Receivables						
Investment Income	17,353	294	48	-	17,695	23,257
Securities Sales	74,485	1,260	205	-	75,950	174,108
Contributions	22,951	-	-	-	22,951	24,411
Foreign Currency Forward Contracts (Net)	28	-	-	-	28	1,828
Other Receivables	<u>2,639</u>	<u>45</u>	<u>7</u>	<u>-</u>	<u>2,691</u>	<u>1,759</u>
Total Receivables	117,456	1,599	260	-	119,315	225,363
Investments at Fair Value						
Domestic Equity Securities	2,505,918	42,399	6,899	6,870	2,562,086	2,075,610
International Equity Securities	1,444,355	24,438	3,976	2,676	1,475,445	1,167,353
Global Equity Securities	437,112	7,396	1,203	-	445,711	537,595
Domestic Fixed Income	1,931,684	32,683	5,318	5,478	1,975,163	1,516,470
Real Estate	1,078,947	18,255	2,970	-	1,100,172	1,134,678
Diversified Credit	1,705,832	28,862	4,696	-	1,739,390	1,316,271
Emerging Markets Equity	870,699	14,732	2,397	-	887,828	742,395
Emerging Markets Debt	391,834	6,630	1,079	-	399,543	353,971
Real Return	880,103	14,891	2,423	-	897,417	863,715
Absolute Return	1,368,654	23,157	3,768	-	1,395,579	1,556,017
Private Equity	<u>729,485</u>	<u>12,342</u>	<u>2,008</u>	<u>-</u>	<u>743,835</u>	<u>650,767</u>
Total Investments at Fair Value	13,344,623	225,785	36,737	15,024	13,622,169	11,914,842
Capital Assets, Net	<u>22,269</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>22,269</u>	<u>24,299</u>
Total Assets	14,268,801	240,657	39,157	15,229	14,563,844	12,949,798
LIABILITIES						
Obligations Under Securities Lending Program	147,152	2,490	405	-	150,047	145,773
Securities Purchased	124,284	2,103	342	-	126,729	172,939
Unearned Contributions	583,241	-	-	-	583,241	540,921
Retiree Payroll Payable	60,399	2,514	216	-	63,129	59,694
Other	22,534	381	62	-	22,977	21,790
Due to Employers	<u>-</u>	<u>-</u>	<u>-</u>	<u>15,229</u>	<u>15,229</u>	<u>14,102</u>
Total Liabilities	937,610	7,488	1,025	15,229	961,352	955,219
Net Position Restricted for Pension and Other Postemployment Benefits	<u>\$ 13,331,191</u>	<u>\$ 233,169</u>	<u>\$ 38,132</u>	<u>\$ -</u>	<u>\$ 13,602,492</u>	<u>\$ 11,994,579</u>

Statement of Changes in Fiduciary Net Position (Unaudited)

For the Three Months Ended March 31, 2017

(with summarized comparative amounts for the Three Months Ended March 31, 2016)

(Dollars in Thousands)

	<u>Pension Trust Fund</u>	<u>Health Care Fund- County</u>	<u>Health Care Fund- OCFA</u>	<u>Total Fund</u>	<u>Comparative Totals 2016</u>
ADDITIONS					
Contributions					
Employer	\$ 130,991	\$ -	\$ 553	\$ 131,544	\$ 137,509
Employee	<u>64,756</u>	<u>-</u>	<u>-</u>	<u>64,756</u>	<u>64,242</u>
Total Contributions	195,747	-	553	196,300	201,751
Investment Income					
Net Appreciation/(Depreciation) in Fair Value of Investments	488,508	8,915	1,426	498,849	76,476
Interest	26,705	452	74	27,231	12,848
Dividends	11,438	194	31	11,663	5,788
Real Estate Income	3,685	62	10	3,757	(5,109)
Alternative Investments	1,086	18	3	1,107	5,403
Other Investment Income	128	2	-	130	(5)
Securities Lending Income					
Gross Earnings	669	11	2	682	337
Less: Borrower Rebates and Bank Charges	<u>(270)</u>	<u>(5)</u>	<u>(1)</u>	<u>(276)</u>	<u>(106)</u>
Net Securities Lending Income	399	6	1	406	231
Total Investment Income	531,949	9,649	1,545	543,143	95,632
Investment Fees and Expenses	<u>(17,139)</u>	<u>(290)</u>	<u>(47)</u>	<u>(17,476)</u>	<u>(12,583)</u>
Net Investment Income/(Loss)	514,810	9,359	1,498	525,667	83,049
Total Additions	710,557	9,359	2,051	721,967	284,800
DEDUCTIONS					
Participant Benefits	180,768	7,991	753	189,512	179,484
Death Benefits	226	-	-	226	20
Member Withdrawals and Refunds	3,491	-	-	3,491	2,521
Administrative Expenses	4,085	5	6	4,096	4,286
Total Deductions	188,570	7,996	759	197,325	186,311
Net Increase	<u>521,987</u>	<u>1,363</u>	<u>1,292</u>	<u>524,642</u>	<u>98,489</u>
Net Position Restricted For Pension and Other Postemployment Benefits, Beginning of Year	<u>12,809,204</u>	<u>231,806</u>	<u>36,840</u>	<u>13,077,850</u>	<u>11,896,090</u>
Ending Net Position Restricted For Pension and Other Postemployment Benefits	<u>\$ 13,331,191</u>	<u>\$ 233,169</u>	<u>\$ 38,132</u>	<u>\$ 13,602,492</u>	<u>\$ 11,994,579</u>

Total Fund Reserves
 For the Three Months Ended March 31, 2017
 (with summarized comparative amounts for the Three Months Ended March 31, 2016)
 (Dollars in Thousands)

	<u>2017</u>	<u>2016</u>
Pension Reserve	\$ 7,969,697	\$ 7,464,291
Employee Contribution Reserve	2,911,905	2,744,901
Employer Contribution Reserve	2,222,836	2,048,889
Annuity Reserve	1,276,983	1,101,579
Health Care Reserve	271,301	238,852
County Investment Account (POB Proceeds) Reserve	122,528	109,437
OCSD UAAL Deferred Reserve	34,067	-
Contra Account	<u>(1,206,825)</u>	<u>(1,713,370)</u>
Net Position - Total Fund	<u>\$ 13,602,492</u>	<u>\$ 11,994,579</u>

Schedule of Contributions
For the Three Months Ended March 31, 2017
(with summarized comparative amounts for the Three Months Ended March 31, 2016)
(Dollars in Thousands)

	<u>2017</u>		<u>2016</u>	
	<u>Employee</u>	<u>Employer</u>	<u>Employee</u>	<u>Employer</u>
Pension Trust Fund Contributions				
County of Orange	\$ 50,761	\$ 101,811	\$ 51,055	\$ 100,726
Orange County Fire Authority	5,169	17,211 ¹	4,376	16,672
Superior Court	4,036	7,579	4,019	8,084
Transportation Authority	2,206	5,909	2,237	6,132
Sanitation District	1,851	1,948	1,829	2,998
UCI	-	714 ²	1	3
San Juan Capistrano	199	581	182	542
OCERS	220	459	241	534
Transportation Corridor Agencies	180	445	167	405
Department of Education	-	259 ²	-	-
Public Law Library	42	76	42	81
Children & Family Commission	23	69	31	93
OCIHSS	30	52	23	48
Cemetery District	30	40	30	38
LAFCO	<u>9</u>	<u>30</u>	<u>9</u>	<u>31</u>
Contributions Before Prepaid Discount	64,756	137,183	64,242	136,387
Prepaid Employer Contribution Discount	<u>-</u>	<u>(6,192)</u>	<u>-</u>	<u>(6,017)</u>
Total Pension Trust Fund Contributions	<u>64,756</u>	<u>130,991</u>	<u>64,242</u>	<u>130,370</u>
Health Care Fund - County Contributions	<u>-</u>	<u>-</u>	<u>-</u>	<u>6,480</u>
Health Care Fund - OCFA Contributions	<u>-</u>	<u>553</u>	<u>-</u>	<u>659</u>
Total Contributions	<u>\$ 64,756</u>	<u>\$ 131,544</u>	<u>\$ 64,242</u>	<u>\$ 137,509</u>

¹ Unfunded actuarial accrued liability payments were made in 2017 of \$0.8 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 Three Months Ended March 31, 2017
(with summarized comparative amounts for the Three Months Ended March 31, 2016)
(Dollars in Thousands)

	<u>2017</u>	<u>2016</u>
Investment Management Fees*		
Diversified Credit	\$ 4,336	\$ 742
Absolute Return	3,117	2,126
Real Estate	1,995	1,259
Real Return	1,424	1,185
International Equity Securities	1,196	837
Private Equity	1,029	305
Emerging Markets Equity	895	827
Domestic Fixed Income	861	974
Global Equity Securities	208	254
Domestic Equity Securities	205	182
Total Investment Management Fees	<u>15,266</u>	<u>8,691</u>
Foreign Income Tax and Other Fund Expenses	<u>1,353</u>	<u>3,014</u>
Other Investment Expenses (Expenses Not Subject to the Statutory Limit)		
Consulting/Research Fees	284	327
Investment Department Expenses	286	380
Legal Costs	179	146
Custodian Services	75	25
Investment Service Providers	33	-
Total Other Investment Expenses	<u>857</u>	<u>878</u>
Total Investment Expenses	<u>\$ 17,476</u>	<u>\$ 12,583</u>
Security Lending Activity		
Security Lending Fees	89	64
Rebate Fees	187	42
Total Security Lending Activity	<u>276</u>	<u>106</u>

* Does not include undisclosed fees deducted at source.

Schedule of Administrative Expenses
For the Three Months Ended March 31, 2017
(with summarized comparative amounts for the Three Months Ended March 31, 2016)
(Dollars in Thousands)

	2017	2016
Pension Trust Fund Administrative Expenses		
Expenses Subject to the Statutory Limit		
Personnel Services		
Employee Salaries and Benefits	\$ 2,422	\$ 2,445
Board Members' Allowance	3	3
Total Personnel Services	2,425	2,448
Office Operating Expenses		
Professional Services	323	612
Depreciation/Amortization	572	583
Operating Expenses	309	303
Rent/Leased Real Property	130	213
Total Office Operating Expenses	1,334	1,711
Total Expenses Subject to the Statutory Limit	3,759	4,159
Expenses Not Subject to the Statutory Limit		
Actuarial Fees	33	-
Information Technology Consulting	239	117
Equipment / Software	54	-
Total Expenses Not Subject to the Statutory Limit	326	117
Total Pension Fund Administrative Expenses	4,085	4,276
Health Care Fund - County Administrative Expenses	5	5
Health Care Fund - OCFA Administrative Expenses	6	5
Total Administrative Expenses	\$ 4,096	\$ 4,286

Administrative Expense Compared to Actuarial Accrued Liability

For the Three Months Ended March 31, 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	<u>3,759</u>
Excess of Allowed Over Actual Expense	<u>33,972</u>
Actual Administrative Expense as a Percentage of Projected Actuarial Accrued Liability	0.02%
Actual Administrative Expense as a Percentage of Projected Actuarial Accrued Liability as of prior year	0.09%
¹ Administrative Expense Reconciliation	
Administrative expense per Statement of Changes in Fiduciary Net Position	\$ 4,085
Less administrative expense not considered per CERL section 31596.1	<u>(326)</u>
Administrative Expense allowable under CERL section 31580.2	<u>\$ 3,759</u>

C-7

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: David James, Director of Internal Audit
SUBJECT: **NEW YORK STATE COMMON RETIREMENT FUND'S SCANDAL – LESSONS FOR OCERS (FUTURE CONSIDERATION BY AUDIT COMMITTEE)**

Recommendation

Receive and file.

Background/Discussion

Recent press accounts and a Securities and Exchange Commission Complaint have described how a former Director of Fixed Income at New York State Common Retirement Fund allegedly steered approximately \$3.38 billion in fixed income trades to two broker-dealers in exchange for various gifts he solicited that were equivalent to about \$180,000. Several internal control failures occurred that may have prevented this fraud.

Board Chair Ball has directed the Audit Committee review what occurred in the case and assess the risks for similar events occurring at OCERS.

OCERS' Internal Audit reviewed policies and internal controls related to this fraud risk. To better understand the events under consideration, OCERS' Internal Audit spoke directly with the Assistant Comptroller for Internal Audit and the Director of Operations and Investments Audits at the New York State Common Retirement Fund. To better understand the impact on OCERS' processes, we discussed this issue with OCERS' Investments' staff and executive management team, as well as our investment consultants. We plan to present our review to the Audit Committee at its June 9 meeting.

Submitted by:



D.J. - Approved

David James
Director of Internal Audit

C-8

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: Steve Delaney, Chief Executive Officer
SUBJECT: DIRECTIVE TO REVIEW OCERS INVESTMENT FEE REPORT

Recommendation

Receive and file.

Background/Discussion

On March 20, 2017, following a discussion of investment fees and how best to include those in the OCERS annual budget, if at all, the OCERS Board, at Chair Ball's request, directed the Audit Committee to review the format of the current version of the Investment Department's annual fee report to determine if it meets the needs and requirements of the fund.

OCERS has tracked and reported investment management fees (including incentive fees) for a number of years but the current annual fee report format was instituted in the 2013-2014 timeframe. It was in that year that OCERS received national recognition from the prestigious Government Finance Officers Association (GFOA) for the quality of the annual investment fee report, as it is presently crafted. In granting this national recognition, GFOA stated "the Orange County Employees Retirement System adopted a comprehensive fee policy for heightened transparency to stakeholders and to guide the organization in investment management practices" which included publishing an annual fee report in 2014. The fee policy arose from a desire for more transparency and accuracy in the reporting of investment management fees, particularly those fees that are not invoiced but deducted from portfolio returns.

On March 29, 2017, the Audit Committee conducted an initial review of the fee report. As a result of that review, and with further clarification from the Board when it met on April 17, 2017, the question of investment fee reporting was bifurcated into two separate issues with two different avenues of approach:

- The question of whether OCERS Budget Approval Policy and in turn the annual budget should be changed with regards to investment fees will be taken up by the Governance Committee at its meeting on June 8, 2017.
- The broader question of whether the annual investment fee report is serving its intended purpose of transparency and meets the needs of the Board will return to the Audit Committee for further consideration on June 9, 2017.

This memo is meant to document some of the key issues the Audit Committee will most likely wish to address at its meeting.

There are three broad categories of inquiry that need consideration, together with some basic technical questions of fee report construction. The Audit Committee will want to determine if the annual investment fee report meets the legal, policy and managerial requirements and expectations of such a report.

Legal Requirements for the Collection and Reporting of Investment Fee Information

In 2016, the California Legislature enacted AB 2833, which added section 7514.7 to the California Government Code to require much more transparency into the investment fees paid by public pension systems in California. Prior legislation (SB 439, enacted in 2005) had amended the California Public Records Act (CPRA) to specify what information about public pension investments in alternative investment vehicles was public and disclosable pursuant to a request under the CPRA. Newly enacted Section 7514.7 imposes a requirement on public pension systems to collect investment fee information and greatly expands the information that must be disclosed publicly. It applies to new alternative investment contracts entered into on or after January 1, 2017 and existing alternative investment contracts for which a new capital commitment is made on or after January 1, 2017.

For these contracts, public retirement systems in California, including OCERS, are required to obtain from the alternative investment vehicle certain information with respect to the fees paid by the retirement system to the fund manager. In addition, the retirement system is required to undertake reasonable efforts to obtain the same information for any existing alternative investment contract for which no new commitment was made on or after January 1, 2017. Finally, the fee information must be disclosed at a public meeting at least on an annual basis.

More specifically, under the law, OCERS must require each fund manager of an alternative investment vehicle in which OCERS invests to disclose the following information at least annually:

1. Fees and expenses that OCERS pays directly to the fund, fund manager or related parties.
2. OCERS' pro rata share of fees and expenses not included in #1 that are paid from the fund to the fund manager or related parties. (If OCERS independently calculates this information, then the fund will not be required to provide the information.)
3. OCERS' pro rata share of carried interest distributed to the fund manager or related parties.
4. OCERS' pro rata share of the aggregate fees and expenses paid by all of the portfolio companies held within the fund to the fund manager or related parties.
5. Any additional information that OCERS is already required to disclose under the CPRA, including:
 - a. Name, address and vintage year of the fund;
 - b. The dollar amount since inception of OCERS' commitment to the fund;
 - c. The dollar amount since inception of OCERS' cash contributions to the fund;
 - d. The fiscal year end dollar amount of the fund's cash distributions received by OCERS from the fund;
 - e. The fiscal year end dollar amount of the remaining value of the fund's assets attributable to OCERS' investment in the fund;
 - f. The net internal rate of return of the fund since inception;
 - g. The investment multiple of the fund since inception'
 - h. The dollar amount of the total management fees and costs paid by OCERS on an annual fiscal year end basis; and
 - i. The annual fiscal year end dollar amount of the cash profit OCERS has received from the fund.
6. The gross and net rate of return of each fund, since inception, in which OCERS participates, either by OCERS' own calculations or based on calculations provided by the fund.

In order to comply with the requirements of Government Code section 7514.7, OCERS began to include in all new alternative investment contracts entered into on or after January 1, 2017 and existing alternative investment contracts for which a new capital commitment was made on or after January 1, 2017, language that

requires the fund manager to disclose to OCERS at least annually each item of information required by section 7514.7 and any such other information as is necessary in order for OCERS to comply with section 7514.7.

OCERS will include all of the information it collects pursuant to Government section 7514.7 in its annual fee report to the Investment Committee each July.

Policy Considerations for the Collection and Reporting of Investment Fee Information

There are dual policy reasons for rigorous control over and reporting of investment fees.

First, the Board has a fiduciary duty to administer the system and to invest the assets of the fund so as to maximize the rate of investment returns. Control over investment fees is of course a critical component of maximizing returns. Second, the public has a right to monitor the performance of public pension investments. As aptly stated in the 2005 Legislative findings related to the section of the California Public Records Act that requires disclosure of certain information about public pension investments in alternative investments:

[A]ccess to information concerning the conduct of the public's business is a fundamental and necessary right of every person in this state [and] the public has a paramount interest in knowing how public money is spent and invested. It is the intent of this legislation [adding section 6254.26 to the Government Code in 2005] to allow the public to monitor the performance of public investments, for public bodies to avoid payment of excessive fees to private individuals or companies; and for the public to be able to know the principals involved in management of alternative investment funds in which public investment funds have invested so that conflicts of interest on the part of public officials can be avoided.

In acknowledgement of the importance of investment fee controls and transparency, in April 2013, the Board adopted an Investment Fee Policy. The stated objectives of the Investment Fee Policy are:

- Reducing the costs of investment operations to the lowest sustainable level available in competitive markets for top investment managers;
- Aligning the interests of OCERS and its stakeholders with the selected investment management firms we retain, as well as their key professionals who manage our portfolios and provide superior research;
- Securing the best available combination, skill, performance expectations, risk and cost for a given investment discipline; and
- Minimizing potential appearances of excessive fees to address the optics of public-sector investment funds that operate in a highly transparent community.

The Investment Fee Policy acknowledges that fee administration is ultimately a management responsibility, and requires fee arrangements and related contractual terms to be summarized regularly in periodic reports to the Investment Committee. In addition, the CIO is charged with scheduling an annual fee review study session with the Investment Committee, and is authorized and encouraged to engage in discussions with other public pension plan officials to explore the feasibility of cooperative efforts to obtain lower, more suitable fees from investment managers.

In addition, a key tenet of OCERS' Investment Beliefs is:

II. Costs

Expensive active management must be evaluated in an effort to ensure that OCERS will be commensurately compensated for the higher fees. Whenever possible, passive alternatives should be utilized, and performance fees should be accompanied by hurdle rates. Additionally, OCERS believes in structuring active manager compensation to best align the managers' interests with those of OCERS.

Managerial Considerations for the Collection and Reporting of Investment Fee Information

A key driver in the creation of the annual fee report was to ensure public transparency into the fees paid to investment managers as well as demonstrating the impact of these fees at the asset class and the total fund level.

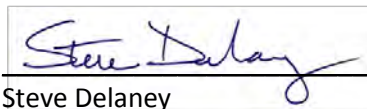
The fee report also serves as a managerial tool for staff in observing trending and controlling costs. To that end the report discusses the beliefs and rationale driving OCERS' investment program, the value-add relative to the fees paid, and strategies for fee reduction.

Other Considerations

In reviewing the annual fee report the Audit Committee will want to consider certain technical aspects of the report's construction as well. The question of what is being reported as a "fee" as opposed to office expense was raised during the Board's earlier consideration of this topic. How does a manager cover business expenses such as travel, due diligence, and other aspects of their daily activities? Are those being lumped in to OCERS' fee expense? Additionally, the Committee will want to determine how those costs are in turn accounted for in our contracts as crafted by investment counsel.

Ultimately the Committee will want to determine if the annual fee report serves not just as a disclosure and communication tool, but rather as a means for providing the Board with actionable information to the betterment of the fund.

Submitted by:



Steve Delaney
Chief Executive Officer

C-9

Memorandum

DATE: May 3, 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

In the report provided to the Board for the March 20th regular Board meeting, it was noted that staff was working closely with our technology partner, Sidepath, to review proposals submitted in response to the data center colocation and wide area network (WAN) services request for proposal (RFP) which had been released to the public on February 6 and which closed on March 3. After a thorough review of the proposals, the project team felt that none of the responses offered a complete solution that encompassed OCERS' best interests. Staff consulted with Contracts, Risk and Performance Administrator Jim Doezie and Assistant CEO, Internal Operations Brenda Shott to explore options and it was determined that OCERS reserves the right in its RFP process to refrain from awarding a contract if a suitable submission is not identified. Once this determination was made, staff evaluated each component of the RFP (local data center; out-of-state data center; and WAN connectivity services) and identified three individual vendors whose offerings in conjunction would comprise a robust, secure and high-performance solution. Those vendors were notified and the project team immediately entered into contract negotiations with the WAN connectivity services provider as this component of the project lies on the critical path. The contract with the WAN connectivity services provider was signed on May 2 and the vendor will begin provisioning the contracted services in the very near future with an expected duration-to-completion of 125 days. Next, we will shift our focus to finalizing the colocation contracts with each of the local and out-of-state facilities providers; we anticipate execution of those contracts to fall well within the 125-day WAN connectivity services implementation period. Final costs for these components are anticipated to be in line with the expected costs noted in Table 1 below and will be reported as contracts are signed; the table has been updated with the negotiated costs for the WAN connectivity services and we expect to report the colocation facility costs in the July regular Board update.

In related news, IT staff has worked closely with stakeholders within OCERS, particularly in the Member Services Department, and with technology partner Sidepath and current enterprise telephony system vendor, ShoreTel, to review cloud-based telephony solutions. Through these discussions over the previous several months, it was determined that ShoreTel's Connect CLOUD product offers all the functionality of our existing on-premises solution plus additional functionality that leverages the cloud to bring resiliency, flexibility and business continuity and disaster recovery features into play. At an April 20 internal meeting, stakeholders approved the solution's design, functionality and expected implementation schedule and the project team was given the greenlight to work with Mr. Doezie on the procurement process. Due to the existing relationship with ShoreTel and the expected cost of the annual contract (initial analysis indicates a potential annual cost savings over existing costs), an RFP process is not expected to be required in this instance; however, Mr. Doezie will ensure

that OCERS meets all procurement requirements. As exact costs are identified, they will be shared in upcoming regular Board reports.

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.

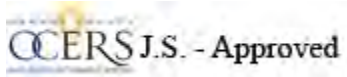
OCERS has defined a budget of \$1.235 million in 2017 to proceed with a hybrid cloud solution which includes the costs shown in Table 1.

Table 1: 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:



Jenny Sadoski
OCERS Director of Information Technology

C-10

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: Gina M. Ratto, Chief Legal Officer
SUBJECT: **GOVERNANCE COMMITTEE OUTCOMES FROM APRIL 5, 2017 MEETING**

Recommendation

The Governance Committee recommends that the Board of Retirement adopt:

- (1) The Board of Retirement Charter, with revisions as approved by the Committee;
- (2) The Governance Committee Charter, with non-substantive revisions as approved by the Committee;
- (3) The SACRS Voting Authority Policy, with revisions as approved by the Committee;
- (4) The Communications Policy, with revisions as approved by the Committee; and
- (5) The Public Records Request Policy, with revisions as approved by the Committee.

Background/Discussion

The Board of Retirement Charter

The Board of Retirement Charter was reviewed by the Governance Committee on April 5, 2017, pursuant to the three-year review cycle. The Committee approved the following revisions:

- Addition of a reference to state-mandated training applicable to Board members;
- Addition of a prohibition against a Board member soliciting or accepting employment as a member of OCERS direct staff while he or she is a member of the OCERS Board and for a period of three years following the termination of his or her service as a Board member, with the proviso that the Board may waive this provision of the charter;
- Clarification that the Chief Investment Officer Charter is adopted and amended by the Board in cooperation with and upon recommendation of the Chief Executive Officer;
- Simplification of the statement of the Board's power to approve investment strategies for achieving the investment objectives of OCERS;
- Clarification that the Board will select the actuarial auditor and financial auditor upon the recommendation of the Audit Committee; and
- Other non-substantive revisions.

A copy of the Board of Retirement Charter with revisions in underlined/strikeout text is attached.

Governance Committee Charter

The Governance Committee Charter was reviewed by the Governance Committee on April 5, 2017, pursuant to the three-year review cycle and approved by the Committee with only non-substantive revisions.

A copy of the Governance Committee Charter with revisions in underlined/strikeout text is attached.

SACRS Voting Authority Policy

The SACRS Voting Authority Policy was reviewed by the Governance Committee on April 5, 2017, pursuant to the three-year review cycle. Staff proposed and the Committee approved a revision to authorize the OCERS voting delegate and designated alternate to use his or her best judgment when voting on an item that is not addressed in any OCERS' Board policy and on which the Board has not taken a position. The Committee further revised the policy to add a clarification that the voting delegate and designated alternate cannot vote on an item that would obligate OCERS financially, other than with respect to SACRS dues.

A copy of the SACRS Voting Authority Policy with revisions in underlined/strikeout text is attached.

Communications Policy and Public Records Request Policy

On April 5, 2017, staff proposed revisions to the Communications Policy and Public Records Request Policy in light of the recent decision of the California Supreme Court in *City of San Jose v. Superior Court* (2017) 2 Cal.5th 608. The Committee approved revisions to the policy, as follows:

- A provision was added to the Communications Policy to acknowledge that electronic mail communications regarding OCERS business are public records disclosable under the PRA (unless otherwise covered by an exemption) regardless of the fact that they were sent, received or stored in a personal email account.
- A provision was added to the Communications Policy to encourage whenever possible that electronic mail communications regarding OCERS business be sent to and from an OCERS email address; and when they are sent from a personal email account, that the Board member copy the electronic mail message to an OCERS email address so that OCERS can maintain a record of the electronic mail communication and produce it in response to a request for it under the PRA.
- The definition of "public record" and an acknowledgment that "public record" includes public records that are sent, received or stored in OCERS staff and Board member private accounts and on their personal devices was added to the Public Records Request Policy.
- A provision was added to the Public Records Request Policy to state that if a request seeks public records held in Board members' or OCERS' employees' non-governmental accounts or on their personal devices, OCERS will communicate the request to the Board members and employees in question and that they must thereafter perform a reasonable search their personal files, accounts and devices for responsive material.

Copies of the Communications Policy and the Public Records Request Policy with revisions in redlined/strikeout text are attached.

Attachments

Submitted by:

A handwritten signature in blue ink that reads "Gina M. Ratto". The signature is written in a cursive style with a horizontal line underneath it.

Gina M. Ratto
Chief Legal Officer

Introduction

1. The Board of Retirement of OCERS (Board) is committed to carrying out its policy and oversight role in accordance with the highest standards of fiduciary practice. The Board recognizes the need to clearly delineate the responsibilities of the various decision-making bodies involved in the governance and management of OCERS. Accordingly, the Board has established this charter, which sets out its duties and responsibilities in governing the System.

Duties and Responsibilities

Board Members

2. Under the California Constitution and the County Employees' Retirement Law of 1937, members of the Board ~~of Retirement~~ have plenary authority and fiduciary responsibility for investment of moneys and administration of the retirement system, and must discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, members of the system and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the Ssystem. Members function together as a nine-member Board (with one alternate), exercising their collective judgment.
3. In carrying out their duties, Board Members must act "with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims."
4. In order to prudently discharge their responsibilities, each Board Member is expected to participate in the activities of the Board and its committees, and to commit the time and effort necessary to knowledgably, effectively and efficiently administer the affairs of the ~~retirement-s~~System.
5. Each Board Member shall:
 - a. Be familiar and comply with OCERS' governing laws, rules, regulations, charters and policies.
 - b. Endeavor to attend all regular meetings of the Board and committees on which the Board Member serves. The Board and Investment Committee meet regularly once each month, subject to adjustment from time to time. Regular meetings are expected to last most of the day. Other committee meetings generally are less frequent, and last between two and four hours.
 - c. Be prepared in advance for informed discussion at each meeting. Preparation for regular Board and Investment Committee meetings can require between one and eight hours.
 - d. Comply with the OCERS Trustee Education Policy and state law, which require that Board Members complete a minimum of 24 hours of Board Member education within the first two years of assuming office and for every subsequent two-year period in which the Board Member serves on the Board (Gov. Code § 31522.8); two hours of ethics training every two years (Gov. Code § 53235); and two hours of harassment prevention training every two years (Gov. Code § 12950.1); and tTake advantage of educational opportunities in areas necessary for OCERS' prudent administration, including but not limited to investments, benefit administration, fiduciary duties, ethics and conflicts of interest, open meetings and

OCERS Board Charter Board of Retirement

sound governance. In-house programs and outside conferences and seminars are available for this purpose. The time commitment for Board Member education is usually five days per year. Some travel may be required.

6. Unless expressly waived by the Board, no Board member shall solicit or accept employment as a member of OCERS direct staff while he or she is a member of the Board and for a period of three years following the termination of his or her service as a member of the Board.
7. If a Board ~~M~~member is unwilling or incapable of committing to and discharging the foregoing duties and responsibilities, ~~he or she~~~~the Member~~ should consider resigning from the Board for the benefit of the ~~S~~system and the Board.

Governance

8. The Board ~~of Retirement~~ will:
 - a. Approve, and amend as necessary, the mission statement of OCERS;
 - b. Adopt regulations or By-Laws, consistent with the County Employees Retirement Law of 1937, Government Code, Title 3, Division 4, Part 3, Chapter 3 and 3.9, Government Code Sections 31450 - 31899.10 as amended, and other applicable law;
 - c. Adopt, and amend as necessary, policies to ensure appropriate governance practices; ~~reviewing and review~~ each on a triennial basis.
 - d. Adopt and amend as necessary, charters describing the roles and responsibilities of the Board, the committees of the Board, the Chief Executive Officer, ~~the Managing Director of Investments~~, the Board Chair, the Board Vice Chair, and the Committee Chairs;
 - e. In cooperation with and upon the recommendation of the Chief Executive Officer, adopt and amend as necessary the charter describing the roles and responsibilities of the Chief Investment Officer;
 - f. During the last regularly scheduled meeting of the ~~full~~ Board for each calendar year, elect a Vice Chair for a term beginning on the first day of the following calendar year, and fill vacancies as necessary. The person holding the office of Vice Chair as of the last day of the calendar year shall automatically succeed to the office of Chair effective the first day of the following calendar year ~~as provided for in the OCERS By-Laws~~;
 - g. Establish committees of the Board as provided for in OCERS By-Laws;
 - h. Initiate, support, oppose or take a neutral position regarding legislative proposals affecting OCERS; and
 - i. Authorize and ~~or~~ approve any actions concerning claims, disputes, demands or legal proceedings that may affect the functions, investments, ~~and~~ benefits or funding of OCERS and the Board.

Investments and Funding

9. The Board has exclusive control of the investments of the Fund. The assets of OCERS are trust funds and, as such, the Board will manage the Fund (Gov. Code § 31595):

OCERS Board Charter Board of Retirement

- a. Solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering OCERS;
 - b. With the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims; and
 - c. By diversifying the investments of OCERS so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so.
10. The Board will conduct a study of the relationship between the assets and liabilities of OCERS not less than every three years.
 11. The Board will approve an Investment Policy Statement including investment objectives, and will review and confirm or amend such policy at least every three years and following the completion of any asset/liability study of OCERS.
 12. The Board will approve broad investment strategies for achieving the investment objectives of OCERS, ~~which will include at a minimum:~~
 - ~~a. Investment structure;~~
 - ~~b. Guidelines concerning growth versus value capitalization strategies; and~~
 - ~~c. Guidelines concerning amounts to be invested passively in each asset class.~~

Benefits Administration

13. The Board ~~of Retirement~~ will, from time to time as determined to be in the best interest of OCERS:
 - a. Adopt Board policies necessary to promote effective administration of member benefits;
 - b. Approve all qualified members who apply for service retirement (Gov. Code § 31670);
 - c. Determine the merits of applications for disability benefits, making necessary determinations of service connection and permanency of injury (Gov. Code § 31720);
 - d. Act on member appeals of decisions made by OCERS staff;
 - e. Annually approve cost-of-living adjustments (Gov. Code § 31870);
 - f. Determine eligibility of safety members when in doubt; and
 - g. Periodically review approved disabilities as appropriate.

Operations

14. The Board ~~of Retirement~~ will:
 - a. Adopt a business and strategic plan and any updates thereto;
 - b. Adopt an annual Operating Budget within the statutory limit and approve any changes thereto;
 - c. Ensure that all required contributions to the Fund are collected in a timely manner;

- d. Ensure that all required distributions from the Fund are made in a timely manner;
- e. Establish OCERS principal business offices;
- f. Approve leasehold ~~and/or~~ purchase agreements in connection with OCERS principal business offices; and
- g. Approve operational control policies to ensure efficient delivery of member benefits and services.

Financial, Actuarial and Accounting

- 15. The Board ~~of Retirement~~ will:
 - a. Ensure that appropriate accounting, actuarial and internal financial control policies are established;
 - b. Approve the annual actuarial valuation and the actuarial assumptions contained therein, upon the advice of the actuary and other experts as required, and transmit to the Orange County Board of Supervisors a recommendation to implement such changes in the contribution rates of the county and districts, and members, as are necessary (Gov. Code §§31453 - 31454.6);
 - c. Approve the annual financial statements;
 - d. Ensure a financial audit is conducted at least annually (Gov. Code § 31593);
 - e. Ensure an actuarial experience study is conducted at least every three years; and
 - f. Ensure an actuarial audit is conducted at least every five years.

Human Resources

- 16. The Board ~~of Retirement~~ will from time to time as determined to be in the best interests of OCERS:
 - a. Approve a human resources and compensation policy; and
 - b. Ensure that appropriate succession plans are in place to provide continuity in OCERS management.

Communications

- 17. The Board ~~of Retirement~~ will:
 - a. Ensure effective communications with all significant interest groups;
 - b. Ensure that an Annual Financial Report is issued to members;
 - c. Ensure that Member Statements are available on OCERS' website and that OCERS makes paper copies available upon request; and
 - d. Conduct internal and external communications in accordance with the Board Member Communications Policy ~~adopted the Board~~.

Key Appointments

18. The Board ~~of Retirement~~ will, from time to time, appoint staff and service providers to assist the Board in carrying out its responsibilities, including:
 - a. The CEO (Gov. Code § 31522.5);
 - b. The actuary;
 - c. The actuarial auditor upon recommendation of the Audit Committee;
 - d. The financial auditor upon recommendation of the Audit Committee;
 - e. The custodian;
 - f. Legal counsel retained to represent and advise the Board (Gov. Code § 31529.5);
 - g. Investment consultants retained to advise the Board;
 - h. Investment managers;
 - i. Human resource consultants retained to assist the Board with ~~issues~~ pertaining to the CEO; and
 - j. Other service providers the Board may choose to retain.

Monitoring and Reporting

19. The Board ~~of Retirement~~ will ensure that appropriate monitoring and reporting practices are established within OCERS.
20. As a general rule, the Board will comply with all Board policies. ~~If should~~ the Board takes an action contrary to one of its policies, it will state in the Board minutes the reasons for doing so. At such time, the Board will also request that a review of the policy be undertaken.
21. The Board ~~of Retirement~~ will annually:
 - a. Review the CEO's job performance;
 - b. Review the funded status of OCERS;
 - c. Review OCERS's internal financial and operating controls;
 - d. Review the investment performance of the Fund and the performance of the investment managers of the Fund;
 - e. Review the quality of ~~member~~ services delivered to OCERS members; and
 - f. Review the performance of the Board.
22. The Board will review the actuarial experience of OCERS not less than every three years.
23. The Board will review the results of an actuarial audit of OCERS at least every five years.
24. The Board will review progress toward the implementation of OCERS business plan on a semi-annual basis.
25. The Board will review Board policies every three years or as set out in each policy.

OCERS Board Charter Board of Retirement

26. The Board will review the OCERS Operating Budget on a quarterly basis.
27. With the assistance of the CEO, the Board (or a committee of the Board) will review, at least biennially, the performance of its advisors including the actuary, the financial auditor, the investment consultants, and fiduciary counsel.
28. The Board will provide for appropriate monitoring of compliance with applicable laws and regulations.

Charter Review

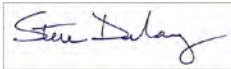
29. The Governance Committee will review this Charter at least once every three (3) years and recommend any amendments to the Board for approval as necessary to ensure that the Charter remains relevant and appropriate.

Charter History

30. This Charter was adopted by the Board of Retirement on November 18, 2002 and amended on August 22, 2011, January 21, 2014, ~~and~~ January 20, 2015, ~~and~~ July 20, 2015 and May 15, 2017.

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this charter.



~~7/20/15~~/15/17

Steve Delaney
Secretary of the Board

Date

Introduction

1. The Board of Retirement of OCERS (Board) is committed to carrying out its policy and oversight role in accordance with the highest standards of fiduciary practice. The Board recognizes the need to clearly delineate the responsibilities of the various decision-making bodies involved in the governance and management of OCERS. Accordingly, the Board has established this charter, which sets out its duties and responsibilities in governing the System.

Duties and Responsibilities

Board Members

2. Under the California Constitution and the County Employees' Retirement Law of 1937, members of the Board have plenary authority and fiduciary responsibility for investment of moneys and administration of the retirement system, and must discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, members of the system and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the System. Members function together as a nine-member Board (with one alternate), exercising their collective judgment.
3. In carrying out their duties, Board Members must act "with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims."
4. In order to prudently discharge their responsibilities, each Board Member is expected to participate in the activities of the Board and its committees, and to commit the time and effort necessary to knowledgably, effectively and efficiently administer the affairs of the System.
5. Each Board Member shall:
 - a. Be familiar and comply with OCERS' governing laws, rules, regulations, charters and policies.
 - b. Endeavour to attend all regular meetings of the Board and committees on which the Board Member serves. The Board and Investment Committee meet regularly once each month, subject to adjustment from time to time. Regular meetings are expected to last most of the day. Other committee meetings generally are less frequent, and last between two and four hours.
 - c. Be prepared in advance for informed discussion at each meeting. Preparation for regular Board and Investment Committee meetings can require between one and eight hours.
 - d. Comply with the OCERS Trustee Education Policy and state law, which require that Board Members complete a minimum of 24 hours of Board Member education within the first two years of assuming office and for every subsequent two-year period in which the Board Member serves on the Board (Gov. Code § 31522.8); two hours of ethics training every two years (Gov. Code § 53235); and two hours of harassment prevention training every two years (Gov. Code § 12950.1); and take advantage of educational opportunities in areas necessary for OCERS' prudent administration, including but not limited to investments, benefit administration, fiduciary duties, ethics and conflicts of interest, open meetings and

OCERS Board Charter Board of Retirement

sound governance. In-house programs and outside conferences and seminars are available for this purpose. The time commitment for Board Member education is usually five days per year. Some travel may be required.

6. Unless expressly waived by the Board, no Board member shall solicit or accept employment as a member of OCERS direct staff while he or she is a member of the Board and for a period of three years following the termination of his or her service as a member of the Board.
7. If a Board Member is unwilling or incapable of committing to and discharging the foregoing duties and responsibilities, he or she should consider resigning from the Board for the benefit of the System and the Board.

Governance

8. The Board will:
 - a. Approve, and amend as necessary, the mission statement of OCERS;
 - b. Adopt regulations or By-Laws, consistent with the County Employees Retirement Law of 1937, Government Code, Title 3, Division 4, Part 3, Chapter 3 and 3.9, Government Code Sections 31450 - 31899.10 as amended, and other applicable law;
 - c. Adopt and amend as necessary policies to ensure appropriate governance practices and review each on a triennial basis.
 - d. Adopt and amend as necessary charters describing the roles and responsibilities of the Board, the committees of the Board, the Chief Executive Officer, the Board Chair, the Board Vice Chair, and the Committee Chairs;
 - e. In cooperation with and upon the recommendation of the Chief Executive Officer, adopt and amend as necessary the charter describing the roles and responsibilities of the Chief Investment Officer;
 - f. During the last regularly scheduled meeting of the Board for each calendar year elect a Vice Chair for a term beginning on the first day of the following calendar year, and fill vacancies as necessary. The person holding the office of Vice Chair as of the last day of the calendar year shall automatically succeed to the office of Chair effective the first day of the following calendar year;
 - g. Establish committees of the Board as provided for in OCERS By-Laws;
 - h. Initiate, support, oppose or take a neutral position regarding legislative proposals affecting OCERS; and
 - i. Authorize and approve any actions concerning claims, disputes, demands or legal proceedings that may affect the functions, investments, benefits or funding of OCERS and the Board.

Investments and Funding

9. The Board has exclusive control of the investments of the Fund. The assets of OCERS are trust funds and, as such, the Board will manage the Fund (Gov. Code § 31595):

OCERS Board Charter Board of Retirement

- a. Solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering OCERS;
 - b. With the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims; and
 - c. By diversifying the investments of OCERS so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so.
10. The Board will conduct a study of the relationship between the assets and liabilities of OCERS not less than every three years.
 11. The Board will approve an Investment Policy Statement including investment objectives, and will review and confirm or amend such policy at least every three years and following the completion of any asset/liability study of OCERS.
 12. The Board will approve broad investment strategies for achieving the investment objectives of OCERS

Benefits Administration

13. The Board will, from time to time as determined to be in the best interest of OCERS:
 - a. Adopt Board policies necessary to promote effective administration of member benefits;
 - b. Approve all qualified members who apply for service retirement (Gov. Code § 31670);
 - c. Determine the merits of applications for disability benefits, making necessary determinations of service connection and permanency of injury (Gov. Code § 31720);
 - d. Act on member appeals of decisions made by OCERS staff;
 - e. Annually approve cost-of-living adjustments (Gov. Code § 31870);
 - f. Determine eligibility of safety members when in doubt; and
 - g. Periodically review approved disabilities as appropriate.

Operations

14. The Board will:
 - a. Adopt a business and strategic plan and any updates thereto;
 - b. Adopt an annual Operating Budget within the statutory limit and approve any changes thereto;
 - c. Ensure that all required contributions to the Fund are collected in a timely manner;
 - d. Ensure that all required distributions from the Fund are made in a timely manner;
 - e. Establish OCERS principal business offices;

- f. Approve leasehold and purchase agreements in connection with OCERS principal business offices; and
- g. Approve operational control policies to ensure efficient delivery of member benefits and services.

Financial, Actuarial and Accounting

- 15. The Board will:
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 - b. Approve the annual actuarial valuation and the actuarial assumptions contained therein, upon the advice of the actuary and other experts as required, and transmit to the Orange County Board of Supervisors a recommendation to implement such changes in the contribution rates of the county and districts, and members, as are necessary (Gov. Code §§31453 - 31454.6);
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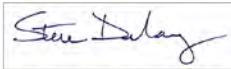
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Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this charter.



5/15/17

Steve Delaney
Secretary of the Board

Date

OCERS Board Charter Governance Committee Charter

Introduction

1. The OCERS Board of Retirement (Board) has established a Governance Committee to assist the Board in recommending, reviewing, and amending, as necessary, policies and procedures for Board-governance of the Board. The Governance Committee is an advisory committee to the Board-~~of Retirement~~ and its recommendations are subject to final approval by the Board.
2. The Board Chairperson will appoint members to the Governance Committee as provided for in OCERS By-Laws and will designate one member of the committee to serve as committee chair and one member of the committee to serve as committee vice chair.
3. The Governance Committee shall be comprised on four (4) members of the Board.

Duties and Responsibilities

4. The Governance Committee will:
 - a. In consultation with the Chief Executive Officer, develop terms of reference for the Board, the Committee Chairs, and Chief Executive Officer, and periodically recommend to the Board such amendments as may be necessary or advisable;
 - b. Review, develop, and recommend to the Board for approval, new governance policies as may be necessary, review existing governance policies based upon the established schedule for review, and review and/or recommend changes to the By-Laws as directed by the Board or Board Chair;
 - c. Review the charters and policies assigned to Governance Committee at least once every three years in accordance with the schedule set forth in the *OCERS Charters and Policies Review Schedule* and recommend the same for approval by the Board-~~of Retirement~~;
 - d. Monitor the implementation of governance-related policies;
 - e. Report regularly to the Board on ~~it~~the Committee's activities; and
 - f. At the request of the Board Chair or the Board, undertake such other governance-related initiatives as may be necessary or desirable to guide or assist the Board and OCERS staff in carrying out their respective duties and responsibilities.

Governance Committee Charter

Charter Review

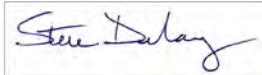
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Date

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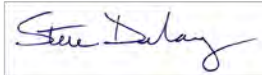
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5/15/17

Steve Delaney, Secretary of the Board

Date

Background

1. The State Association of County Retirement Systems (SACRS) is an association of 20 California county retirement systems, established under the County Employees Retirement Law of 1937. SACRS meets as an organization twice a year with all 20 counties participating through attendance by Trustees, Administrators, and staff.
2. Regular member County Retirement Systems shall have the right to vote on the election of the officers/directors of SACRS, amendments to the Articles of Incorporation and By-laws, legislative proposals for SACRS' sponsorship and positions on non-SACRS' sponsored legislation, resolutions, and other items of SACRS' business. Regular member County Retirement Systems shall be entitled to one (1) voting delegate, designated in writing by the County Retirement Board.
3. A voting delegate shall be designated in writing by the member County Retirement Board and shall be a Trustee or Administrator who is employed directly by the County Retirement System. Alternate delegates may be designated in writing by the member County Retirement Board.

Policy Guidelines

4. In order to ensure that OCERS is represented by a voting delegate at each business meeting of SACRS, OCERS will designate the current Board Chair as voting delegate, and each member of the Board and the Administrator as alternate delegates.
5. Credentials for the delegates who are voting participants shall be filed with the SACRS Credentials Committee in writing prior to any meeting of SACRS at which voting will take place, unless there are no changes from the credentials already on file. Credentials shall include the name of the member County Retirement System, and indicate that the Board Chair is the voting delegate and all other Board members and the Administrator are alternate voting delegates.
6. Voting at meetings of SACRS shall be the exclusive privilege of the delegate or alternate delegate. If the Board Chair is unable to attend a SACRS business meeting at which a vote is taking place, the Vice Chair shall be designated as alternate voting delegate. If the Board Chair and Vice Chair are both unable to attend, the alternate voting delegate will be determined, among the Board members in attendance, alphabetically by the Board member's last name. Each voting delegate, or designated alternate delegate if the voting delegate is absent, may cast one (1) vote on each matter submitted to a vote of the membership.
7. Where the OCERS' Board has taken an official Board position on an item to be voted on at a SACRS business meeting, the voting delegate or designated alternate voting delegate must cast a vote consistent with the Board position. If the Board has not taken a position on an item to be voted on, the voting delegate or designated alternate voting delegate must comply with the Board policy or policies that address(es) the subject matter of the item. When the item to be voted on is not addressed in any OCERS' Board policy and the Board has not taken a position, the voting delegate or designated alternate voting delegate may use his or her best judgment to vote in accordance with the position he or she believes the Board would take on the item, or shall abstain from voting.

OCERS Board Policy **SACRS Voting Authority Policy**

Notwithstanding the foregoing, the voting delegate and designated alternate voting delegate shall not vote on any item that would obligate OCERS financially to pay any sums other than SACRS dues.

Policy Review


8. The Board will review this policy at least every three years to ensure that it remains relevant and appropriate.

Policy History

9. This policy was adopted on May 9, 1988.
10. This policy was revised on August 25, 2008, ~~This policy was further revised on~~ May 17, 2011, ~~This policy was revised on~~ March 17, 2014 and May 15, 2017.

Secretary's Certificate

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Date

Background

1. The Board of Retirement recognizes that effective communication is integral to good governance. In order to achieve the mission and objectives of OCERS, the Board must establish mechanisms for communicating clearly among Board members, and with senior management, plan sponsors, plan members, and external parties. The Board has adopted this Policy to provide the Board as a whole, individual Board members, and staff with guidelines for executing the communications function of the Board.

Policy Objectives

2. To encourage and facilitate open, accurate, timely, and effective communications with all relevant parties.
3. To mitigate risks to OCERS, to the Board, and to Board members that may arise in connection with communications.

Principles and Assumptions

4. Inappropriate or erroneous communications from Board members may represent a significant risk to OCERS, the Board, and individual Board members.
5. A Board member communications policy must balance the need to mitigate that risk with the need for open and efficient communication.

Policy Guidelines

General Guidelines

6. Members of the OCERS Board and staff represent many differing backgrounds and viewpoints. Partisan political communications from persons in positions of authority may create a hostile work environment. Therefore, Board members and staff shall refrain from sending any partisan political communications to a majority of the members of the Board or a majority of the members of a standing committee, or to OCERS staff, contractors, temporary employees, or others working for or providing services to OCERS.
7. Members of the Board and staff shall also refrain from using OCERS equipment for disseminating partisan political communications to anyone, except where specifically authorized for fulfillment of duties of a duly appointed labor representative.
8. OCERS Board and staff shall also refrain from engaging in any communications that may be considered offensive, profane, vulgar, or based on any protected class under Federal law or laws in the State of California, regardless of the motivation for such communications.
9. Electronic mail allows for near instantaneous communications between individuals and / or groups of people. The prevalence of electronic communications also brings challenges in managing communications and potential infringement of the *Ralph M. Brown Act* (Gov. Code §§ 54950-54962) (the "Brown Act") and challenges in complying with the Public Records Act (Gov. Code

OCERS Board Policy Communications Policy

§§6250, et.seq.). As such, the OCERS Board has adopted the following guidelines for use and management of electronic mail by Board members:

- a. Electronic mail pertaining to OCERS business shall be treated as a business record of OCERS subject to the OCERS Records Retention and Guidelines Policy and the Public Records Act.
- b. Electronic mail between Board members must not violate any provision of the Brown Act.
- c. Communications that a Board member wishes to disseminate to a majority of the members of the Board or a majority of the members of a standing committee shall be submitted to the CEO or his or her designee only. The CEO or his or her designee will then, in his or her discretion, forward said communications to the full Board via a special email. Regardless of whether or not provided via a special email, unless the content of the message is inconsistent with OCERS' policies or applicable law (e.g., violates paragraph 8 above of this policy), it will be distributed publicly to the entire Board as a communications item posted with the public agenda for the next regular Board meeting. This paragraph in no way authorizes serial communications or communications by or between a majority of the members of the Board or a standing committee of the Board that would violate the Brown Act.
- d. Electronic mail communications from OCERS staff to Board members may be sent to a personal email account designated by individual Board members. In such event, OCERS staff shall retain a copy of the email communication according to the Records Retention and Guidelines Policy and for purposes of compliance with the Public Records Act.
- e. Electronic mail communications regarding OCERS business are public records disclosable under the Public Records Act (unless otherwise covered by an exemption) regardless of the fact that they were sent, received or stored in a personal email account. Whenever possible, electronic mail communications regarding OCERS business should be sent to and from an OCERS email address. For records retention and public records law purposes, when sending In the event an electronic mail communications pertaining to OCERS business is sent from a personal email account to OCERS staff, ~~or~~ other Board members or to any other party, the Board members shall ~~send to or from, or~~ copy the electronic mail message to, an OCERS email address so that OCERS can maintain a record of the electronic mail communication and produce it in response to a request for it under the Public Records Act. This paragraph in no way authorizes serial communications or communications by or between a majority of the members of the Board or a standing committee of the Board that would violate the Brown Act.

Communications Among Board Members

10. The Board shall carry out its activities in accordance with the spirit of open governance, including the provisions of the Brown Act, which include, but are not limited to:
 - a. Ensuring that communications by and between Board members comply with the Brown Act (section 54952.2 of the Brown Act);
 - b. Properly noticing and posting an agenda for Board and Committee meetings (section 54954.2 of the Brown Act);

OCERS Board Policy **Communications Policy**

- c. Allowing proper public comment on agenda items before or during consideration by the Board (Section 54954.3 of the Brown Act);
 - d. Properly describing all items to be considered in closed session in the notice or agenda for the meeting (Section 54954.5 of the Brown Act);
 - e. Not conducting or participating in a series of communications one at a time or in a group that in total constitutes a quorum of the Board or Committee either directly or through intermediaries or electronic devices, for the purpose of developing a concurrence as to action to be taken (a serial or secret meeting prohibited by Section 54953 of the Brown Act);
 - f. Not taking any action, whether preliminary or final, by secret ballot (Section 54953(c) of the Brown Act); and
 - g. Ensuring Board and committee meeting agenda materials are properly made available to members of the public, upon request and without delay (Section 54957.5 of the Brown Act).
11. Internal or external counsel for OCERS shall provide Brown Act training/education annually to members of the Board.
12. A member of the Board shall disclose information in his or her possession pertinent to the affairs of OCERS to the entire Board in a timely manner.
13. During meetings of the Board and its committees, Board members shall communicate in a straightforward, constructive manner with due respect and professionalism.

Board Member Communications with Plan Members and Plan Sponsors

14. Members of the Board shall mitigate the risk of miscommunication with plan sponsors, active and deferred plan members, and retirees, and potential liability through adverse reliance by third parties by avoiding giving explicit advice, counsel, or education with respect to the technicalities of the plan provisions, policies, or processes.
15. Where explicit advice, counsel, or education with respect to the technicalities of the plan provisions, policies, or process is needed, Board members will refer inquiries to the Chief Executive Officer or appropriate designee. The Chief Executive Officer or such designee will inform the Board Member when and how the matter was resolved.
16. Board members shall not disclose confidential communications received orally or in writing in closed session meetings of the Board of Retirement or a Board Committee or received orally or in writing from internal or external legal counsel and identified as confidential.

Board Member Communications with OCERS Management

17. a. Board members who seek information solely in order to respond to inquiries from members about OCERS' policies and practices may direct their inquiries to the CEO or, with notice to the CEO, to the appropriate Assistant CEO or department head, who shall in turn direct subordinate staff as appropriate.

OCERS Board Policy Communications Policy

- b. All other Board member requests for information shall be directed to the CEO, who shall in turn direct staff as appropriate.
 - c. All Board member expressions of concern and ideas about OCERS' policies, administration, contracting, investments, benefits, media relations and public policy issues shall be directed solely to the CEO. Under no circumstances shall Board members directly communicate about any such matters with any staff subordinate to the CEO outside of a duly noticed Board or committee meeting, without the CEO's prior express permission. If exigent circumstances arise during the CEO's absence, such matters may be directed to the CEO's designee, who shall act in lieu of the CEO.
18. a. The CEO may decline to accept Board member requests for information that require the expenditure of significant staff time or external resources, provided that the CEO then places the matter on the next subsequent Board or committee agenda, as appropriate, for consideration and direction by the full Board or committee.
- b. The Board and individual Board members shall not retaliate against either the CEO or any of OCERS' staff for acting consistently with this Policy. Board member conduct inconsistent with this Policy may be deemed by the Board to constitute a breach of fiduciary duty, and may subject the Board member to public censure or reprimand, loss of committee membership or other privileges of office, and/or other appropriate action by the Board.
19. The CEO shall ensure that all information requested by one or more Board members is made available to the entire Board.
20. Board members shall share any information in their possession pertinent to the affairs of OCERS with the CEO in a timely manner. Similarly, the CEO shall ensure that all relevant and pertinent information is disclosed to all of the Board members in a timely manner.

Board Member Communications with External Parties

21. In general, in communicating with external parties, the following guidelines will apply:

The purpose of any communications by members of the Board shall be consistent with their sole and exclusive fiduciary duty to represent the interests of all plan members;

Board members and OCERS management are expected to respect the decisions and policies of the Board in external communications even if they may have opposed them or disagreed with them during Board deliberations;

Board members shall not disclose confidential communications received orally or in writing in closed session meetings of the Board of Retirement or a Board Committee or received orally or in writing from internal or external legal counsel and identified as confidential;

Individual Board members shall not speak for the Board as a whole unless authorized by the Board to do so; and

In external communications, Board members are expected to disclose when they are not representing an approved position of the Board of Retirement or are not speaking in their Board of Retirement capacity.

OCERS Board Policy **Communications Policy**

22. Subject to section 21 above, in situations that call for a spokesperson from the Board, the Chair or his or her designee shall act as spokesperson for the Board. The spokesperson generally should request that reporters put questions in writing.
23. When interviewed, or otherwise approached by the media for information concerning the affairs of OCERS, members of the Board shall refrain from making any unilateral commitments on behalf of the Board or OCERS.
24. To help ensure the accuracy of any oral and/or written material created for the purpose of publication or presentation by members of the Board, in their capacity as such, and to ensure that neither OCERS, the Board, or such member of the Board is placed at risk thereby, all such material shall be peer reviewed by the CEO or legal counsel prior to being submitted for publication or presentation.

Policy Review

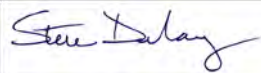
25. The Board shall review this policy at least every 3 years to ensure that it remains relevant and appropriate.

Policy History

26. This policy was adopted by the Board of Retirement on November 18, 2002.
27. The policy was revised on April 16, 2007, March 24, 2008, May 17, 2011, March 17, 2014, January 20, 2015, ~~and~~ March 16, 2015 and May 15, 2017.

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.



3/16/155/15/17

Steve Delaney
Secretary of the Board

Date

Background

1. The Board of Retirement recognizes that effective communication is integral to good governance. In order to achieve the mission and objectives of OCERS, the Board must establish mechanisms for communicating clearly among Board members, and with senior management, plan sponsors, plan members, and external parties. The Board has adopted this Policy to provide the Board as a whole, individual Board members, and staff with guidelines for executing the communications function of the Board.

Policy Objectives

2. To encourage and facilitate open, accurate, timely, and effective communications with all relevant parties.
3. To mitigate risks to OCERS, to the Board, and to Board members that may arise in connection with communications.

Principles and Assumptions

4. Inappropriate or erroneous communications from Board members may represent a significant risk to OCERS, the Board, and individual Board members.
5. A Board member communications policy must balance the need to mitigate that risk with the need for open and efficient communication.

Policy Guidelines

General Guidelines

6. Members of the OCERS Board and staff represent many differing backgrounds and viewpoints. Partisan political communications from persons in positions of authority may create a hostile work environment. Therefore, Board members and staff shall refrain from sending any partisan political communications to a majority of the members of the Board or a majority of the members of a standing committee, or to OCERS staff, contractors, temporary employees, or others working for or providing services to OCERS.
7. Members of the Board and staff shall also refrain from using OCERS equipment for disseminating partisan political communications to anyone, except where specifically authorized for fulfillment of duties of a duly appointed labor representative.
8. OCERS Board and staff shall also refrain from engaging in any communications that may be considered offensive, profane, vulgar, or based on any protected class under Federal law or laws in the State of California, regardless of the motivation for such communications.
9. Electronic mail allows for near instantaneous communications between individuals and / or groups of people. The prevalence of electronic communications also brings challenges in managing communications and potential infringement of the *Ralph M. Brown Act* (Gov. Code §§ 54950-54962) (the "Brown Act") and challenges in complying with the Public Records Act (Gov. Code

OCERS Board Policy **Communications Policy**

§§6250, et.seq.). As such, the OCERS Board has adopted the following guidelines for use and management of electronic mail by Board members:

- a. Electronic mail pertaining to OCERS business shall be treated as a business record of OCERS subject to the OCERS Records Retention and Guidelines Policy and the Public Records Act.
- b. Electronic mail between Board members must not violate any provision of the Brown Act.
- c. Communications that a Board member wishes to disseminate to a majority of the members of the Board or a majority of the members of a standing committee shall be submitted to the CEO or his or her designee only. The CEO or his or her designee will then, in his or her discretion, forward said communications to the full Board via a special email. Regardless of whether or not provided via a special email, unless the content of the message is inconsistent with OCERS' policies or applicable law (e.g., violates paragraph 8 above of this policy), it will be distributed publicly to the entire Board as a communications item posted with the public agenda for the next regular Board meeting. This paragraph in no way authorizes serial communications or communications by or between a majority of the members of the Board or a standing committee of the Board that would violate the Brown Act.
- d. Electronic mail communications from OCERS staff to Board members may be sent to a personal email account designated by individual Board members. In such event, OCERS staff shall retain a copy of the email communication according to the Records Retention and Guidelines Policy and for purposes of compliance with the Public Records Act.
- e. Electronic mail communications regarding OCERS business are public records disclosable under the Public Records Act (unless otherwise covered by an exemption) regardless of the fact that they were sent, received or stored in a personal email account. Whenever possible, electronic mail communications regarding OCERS business should be sent to and from an OCERS email address. In the event an electronic mail communication pertaining to OCERS business is sent from a personal email account to OCERS staff, other Board members or to any other party, the Board member shall copy the electronic mail message to an OCERS email address so that OCERS can maintain a record of the electronic mail communication and produce it in response to a request for it under the Public Records Act. This paragraph in no way authorizes serial communications or communications by or between a majority of the members of the Board or a standing committee of the Board that would violate the Brown Act.

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 - c. Allowing proper public comment on agenda items before or during consideration by the Board (Section 54954.3 of the Brown Act);

OCERS Board Policy **Communications Policy**

- d. Properly describing all items to be considered in closed session in the notice or agenda for the meeting (Section 54954.5 of the Brown Act);
 - e. Not conducting or participating in a series of communications one at a time or in a group that in total constitutes a quorum of the Board or Committee either directly or through intermediaries or electronic devices, for the purpose of developing a concurrence as to action to be taken (a serial or secret meeting prohibited by Section 54953 of the Brown Act);
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 - g. Ensuring Board and committee meeting agenda materials are properly made available to members of the public, upon request and without delay (Section 54957.5 of the Brown Act).
11. Internal or external counsel for OCERS shall provide Brown Act training/education annually to members of the Board.
12. A member of the Board shall disclose information in his or her possession pertinent to the affairs of OCERS to the entire Board in a timely manner.
13. During meetings of the Board and its committees, Board members shall communicate in a straightforward, constructive manner with due respect and professionalism.

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15. Where explicit advice, counsel, or education with respect to the technicalities of the plan provisions, policies, or process is needed, Board members will refer inquiries to the Chief Executive Officer or appropriate designee. The Chief Executive Officer or such designee will inform the Board Member when and how the matter was resolved.
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- b. All other Board member requests for information shall be directed to the CEO, who shall in turn direct staff as appropriate.

OCERS Board Policy **Communications Policy**

- c. All Board member expressions of concern and ideas about OCERS' policies, administration, contracting, investments, benefits, media relations and public policy issues shall be directed solely to the CEO. Under no circumstances shall Board members directly communicate about any such matters with any staff subordinate to the CEO outside of a duly noticed Board or committee meeting, without the CEO's prior express permission. If exigent circumstances arise during the CEO's absence, such matters may be directed to the CEO's designee, who shall act in lieu of the CEO.
18. a. The CEO may decline to accept Board member requests for information that require the expenditure of significant staff time or external resources, provided that the CEO then places the matter on the next subsequent Board or committee agenda, as appropriate, for consideration and direction by the full Board or committee.
- b. The Board and individual Board members shall not retaliate against either the CEO or any of OCERS' staff for acting consistently with this Policy. Board member conduct inconsistent with this Policy may be deemed by the Board to constitute a breach of fiduciary duty, and may subject the Board member to public censure or reprimand, loss of committee membership or other privileges of office, and/or other appropriate action by the Board.
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- Board members and OCERS management are expected to respect the decisions and policies of the Board in external communications even if they may have opposed them or disagreed with them during Board deliberations;
- Board members shall not disclose confidential communications received orally or in writing in closed session meetings of the Board of Retirement or a Board Committee or received orally or in writing from internal or external legal counsel and identified as confidential;
- Individual Board members shall not speak for the Board as a whole unless authorized by the Board to do so; and
- In external communications, Board members are expected to disclose when they are not representing an approved position of the Board of Retirement or are not speaking in their Board of Retirement capacity.
22. Subject to section 21 above, in situations that call for a spokesperson from the Board, the Chair or his or her designee shall act as spokesperson for the Board. The spokesperson generally should request that reporters put questions in writing.

OCERS Board Policy **Communications Policy**

23. When interviewed, or otherwise approached by the media for information concerning the affairs of OCERS, members of the Board shall refrain from making any unilateral commitments on behalf of the Board or OCERS.
24. To help ensure the accuracy of any oral and/or written material created for the purpose of publication or presentation by members of the Board, in their capacity as such, and to ensure that neither OCERS, the Board, or such member of the Board is placed at risk thereby, all such material shall be peer reviewed by the CEO or legal counsel prior to being submitted for publication or presentation.

Policy Review

25. The Board shall review this policy at least every 3 years to ensure that it remains relevant and appropriate.

Policy History

26. This policy was adopted by the Board of Retirement on November 18, 2002.
27. The policy was revised on April 16, 2007, March 24, 2008, May 17, 2011, March 17, 2014, January 20, 2015, March 16, 2015 and May 15, 2017.

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.



5/15/17

Steve Delaney
Secretary of the Board

Date

Purpose and Background

1. The Board of Retirement (“Board”) of the Orange County Employees Retirement System (“OCERS”) adopts this Policy to establish guidelines and procedures regarding responses to requests made by the public including, but not limited to, the media, business entities, individuals, and any other person or entity unaffiliated with OCERS, pursuant to the California Public Records Act (“PRA”).

The Board is committed to transparency. The Board recognizes that it has an obligation to balance its members’ right to privacy with the public’s right to information regarding public business. This Policy is not intended to cover all of the complex legal and factual issues that may arise in responding to a PRA request. However, the Board has determined that it would be useful to establish certain guidelines for OCERS to consider when a request is made under the PRA, and to publish those guidelines for the benefit of its members, their beneficiaries, and the public at large.

This policy will operate in conjunction with OCERS’ Plan Sponsor, Member, and Stakeholder Data Request Policy, which provides guidelines for responding to requests for information from persons and entities that have a direct affiliation with OCERS.

Policy Objectives

2. The objectives of this policy are to provide guidelines to staff and assist in responding to public records requests from members of the public.
3. OCERS prefers that all requests under the PRA are made in writing in order to facilitate a clear understanding of the request and the records being sought by the requestor. When a request is made verbally, staff should ask the requesting party to put the request in writing. In the event the requesting party refuses to make a written request, staff should seek to clarify the request verbally and take detailed notes regarding the request.
4. The PRA generally requires OCERS to disclose “public records” unless the particular information is exempt from disclosure. “Public record” includes any writing containing information relating to the conduct of the public’s business (i.e., OCERS’ business) that is prepared, owned, used or retained by OCERS. It includes public records that are sent, received or stored in OCERS staff and Board member private accounts or on their private devices. OCERS will disclose public records in its possession that are not exempt from disclosure.
5. OCERS will not disclose records exempt from disclosure under the PRA, including, but not limited to, the following:
 - ▶ Records pertaining to pending litigation to which OCERS is a party until the litigation or claim has been finally adjudicated or otherwise settled
 - ▶ Records, the disclosure of which is exempted or prohibited pursuant to state or federal law, including, but not limited to, the provisions of the Evidence Code related to privilege
 - ▶ Preliminary drafts, notes or interagency or intra-agency memoranda that are not retained by OCERS in the ordinary course of business, provided that the public interest in withholding those records clearly outweighs the public interest in disclosure

Public Records Request Policy

- ▶ Sworn statements and individual records of members, pursuant to Government Code section 31532 which provides as follows: “Sworn statements and individual records of members shall be confidential and shall not be disclosed to anyone except insofar as may be necessary for the administration of this chapter [the ‘37 Act] or upon order of a court of competent jurisdiction, or upon written authorization by the member.”
6. ~~OCERS is aware of recently published decisions by the California Courts of Appeal interpreting the applicability of section 31532 to requests for records under the PRA. Until there is a relevant change in legal requirements,~~ OCERS will respond to production requests in accordance with the decision in *Sonoma County Employees’ Retirement System v. Superior Court* (2011) 198 Cal.App.4th 986. ~~In that decision, the Court specifically ruled~~ which held that the retirement system was required to release the names and gross monthly benefit amounts paid to any member. However, the court ruled that the age at retirement of a member is confidential. The decision also provided guidance regarding the scope of the confidentiality required by section 31532. The Court found that the statute does make confidential all information submitted to a retirement system either by the member or by a third party (e.g., an employer) about a member that would not otherwise be considered public information.
7. In accordance with the *Sonoma* decision, in response to a PRA request, OCERS will publicly release the following information, to the extent available:
- ▶ Member or benefit recipient name
 - ▶ Current gross monthly benefit amount
 - ▶ Original gross monthly benefit amount
 - ▶ Cost of living adjustments
 - ▶ Total final compensation
 - ▶ The components of total final compensation
 - ▶ Total years of credited service
 - ▶ Effective date of retirement
 - ▶ Information regarding the member’s former employment department, agency and/or job class to the extent it is received by OCERS
 - ▶ Statutory basis for the benefit calculation formula
 - ▶ Type of retirement (e.g., service, service connected disability, non-service connected disability)
8. Also in accordance with the *Sonoma* decision, OCERS will not publicly disclose the following information:
- ▶ Social Security number
 - ▶ Date of birth
 - ▶ Age at any time
 - ▶ Address

OCERS Board Policy

Public Records Request Policy

- ▶ Telephone and fax numbers
 - ▶ Email address
 - ▶ Disability information and medical records
 - ▶ Spouse or registered domestic partner and beneficiary designations
 - ▶ Member contributions
 - ▶ Individual accounts
 - ▶ Gross refund amount
 - ▶ Personal retirement option election
 - ▶ Individual benefit calculation formula rate
 - ▶ The components of credited service
 - ▶ Personnel records
 - ▶ Non-public correspondence with OCERS
 - ▶ Non-public information provided to OCERS by the member
9. Requests for information not listed above will be determined on a case-by-case basis, in accordance with applicable law. Also, a request for disclosable records may be objectionable if it is unreasonably burdensome. In such situations, staff should consult with counsel.
10. If a request seeks public records held in Board members' or OCERS' employees' non-governmental accounts or on their personal devices, OCERS will communicate the request to the Board members and employees in question and they must thereafter perform a reasonable search of their personal files, accounts and devices for responsive material.
11. Applicable law allows OCERS to recover copying and data retrieval and compilation costs incurred due to a request under the PRA. OCERS will provide an estimate of the cost to copy or produce requested records and will fulfill the request for records as soon as possible after payment of the full estimated amount. Any payments made based on the estimate that are in excess of the actual cost for copying or producing the requested records will be refunded to the requestor.

Policy Review

12. The Board shall review this Policy at least every three years to ensure that it remains relevant and appropriate.

Policy History

13. The Board adopted this Policy on March 19, 2012. The Board reviewed and amended this policy on December 14, 2015 and May 15, 2017.



OCERS Board Policy

Public Records Request Policy

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.

A handwritten signature in blue ink that reads "Steve Delaney". The signature is written in a cursive style and is contained within a rectangular box.

12/14/155/15/17

Steve Delaney
Secretary of the Board

Date

Purpose and Background

1. The Board of Retirement (“Board”) of the Orange County Employees Retirement System (“OCERS”) adopts this Policy to establish guidelines and procedures regarding responses to requests made by the public including, but not limited to, the media, business entities, individuals, and any other person or entity unaffiliated with OCERS, pursuant to the California Public Records Act (“PRA”).

The Board is committed to transparency. The Board recognizes that it has an obligation to balance its members’ right to privacy with the public’s right to information regarding public business. This Policy is not intended to cover all of the complex legal and factual issues that may arise in responding to a PRA request. However, the Board has determined that it would be useful to establish certain guidelines for OCERS to consider when a request is made under the PRA, and to publish those guidelines for the benefit of its members, their beneficiaries, and the public at large.

This policy will operate in conjunction with OCERS’ Plan Sponsor, Member, and Stakeholder Data Request Policy, which provides guidelines for responding to requests for information from persons and entities that have a direct affiliation with OCERS.

Policy Objectives

2. The objectives of this policy are to provide guidelines to staff and assist in responding to public records requests from members of the public.
3. OCERS prefers that all requests under the PRA are made in writing in order to facilitate a clear understanding of the request and the records being sought by the requestor. When a request is made verbally, staff should ask the requesting party to put the request in writing. In the event the requesting party refuses to make a written request, staff should seek to clarify the request verbally and take detailed notes regarding the request.
4. The PRA generally requires OCERS to disclose “public records” unless the particular information is exempt from disclosure. “Public record” includes any writing containing information relating to the conduct of the public’s business (i.e., OCERS’ business) that is prepared, owned, used or retained by OCERS. It includes public records that are sent, received or stored in OCERS staff and Board member private accounts or on their private devices.
5. OCERS will not disclose records exempt from disclosure under the PRA, including, but not limited to, the following:
 - ▶ Records pertaining to pending litigation to which OCERS is a party until the litigation or claim has been finally adjudicated or otherwise settled
 - ▶ Records, the disclosure of which is exempted or prohibited pursuant to state or federal law, including, but not limited to, the provisions of the Evidence Code related to privilege
 - ▶ Preliminary drafts, notes or interagency or intra-agency memoranda that are not retained by OCERS in the ordinary course of business, provided that the public interest in withholding those records clearly outweighs the public interest in disclosure

Public Records Request Policy

- ▶ Sworn statements and individual records of members, pursuant to Government Code section 31532 which provides as follows: “Sworn statements and individual records of members shall be confidential and shall not be disclosed to anyone except insofar as may be necessary for the administration of this chapter [the ‘37 Act] or upon order of a court of competent jurisdiction, or upon written authorization by the member.”
6. OCERS will respond to production requests in accordance with the decision in *Sonoma County Employees’ Retirement System v. Superior Court* (2011) 198 Cal.App.4th 986 which held that the retirement system was required to release the names and gross monthly benefit amounts paid to any member. However, the court ruled that the age at retirement of a member is confidential. The decision also provided guidance regarding the scope of the confidentiality required by section 31532. The Court found that the statute does make confidential all information submitted to a retirement system either by the member or by a third party (e.g., an employer) about a member that would not otherwise be considered public information.
7. In accordance with the *Sonoma* decision, in response to a PRA request, OCERS will publicly release the following information, to the extent available:
- ▶ Member or benefit recipient name
 - ▶ Current gross monthly benefit amount
 - ▶ Original gross monthly benefit amount
 - ▶ Cost of living adjustments
 - ▶ Total final compensation
 - ▶ The components of total final compensation
 - ▶ Total years of credited service
 - ▶ Effective date of retirement
 - ▶ Information regarding the member’s former employment department, agency and/or job class to the extent it is received by OCERS
 - ▶ Statutory basis for the benefit calculation formula
 - ▶ Type of retirement (e.g., service, service connected disability, non-service connected disability)
8. Also in accordance with the *Sonoma* decision, OCERS will not publicly disclose the following information:
- ▶ Social Security number
 - ▶ Date of birth
 - ▶ Age at any time
 - ▶ Address
 - ▶ Telephone and fax numbers
 - ▶ Email address

Public Records Request Policy

- ▶ Disability information and medical records
 - ▶ Spouse or registered domestic partner and beneficiary designations
 - ▶ Member contributions
 - ▶ Individual accounts
 - ▶ Gross refund amount
 - ▶ Personal retirement option election
 - ▶ Individual benefit calculation formula rate
 - ▶ The components of credited service
 - ▶ Personnel records
 - ▶ Non-public correspondence with OCERS
 - ▶ Non-public information provided to OCERS by the member
9. Requests for information not listed above will be determined on a case-by-case basis, in accordance with applicable law. Also, a request for disclosable records may be objectionable if it is unreasonably burdensome. In such situations, staff should consult with counsel.
10. If a request seeks public records held in Board members' or OCERS' employees' non-governmental accounts or on their personal devices, OCERS will communicate the request to the Board members and employees in question and they must thereafter perform a reasonable search of their personal files, accounts and devices for responsive material.
11. Applicable law allows OCERS to recover copying and data retrieval and compilation costs incurred due to a request under the PRA. OCERS will provide an estimate of the cost to copy or produce requested records and will fulfill the request for records as soon as possible after payment of the full estimated amount. Any payments made based on the estimate that are in excess of the actual cost for copying or producing the requested records will be refunded to the requestor.

Policy Review

12. The Board shall review this Policy at least every three years to ensure that it remains relevant and appropriate.

Policy History


13. The Board adopted this Policy on March 19, 2012. The Board reviewed and amended this policy on December 14, 2015 and May 15, 2017.

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.



OCERS Board Policy Public Records Request Policy



Steve Delaney
Secretary of the Board

5/15/17

Date

C-11

Memorandum

DATE: April 14, 2017
TO: Members of the Board of Retirement
FROM: Steve Delaney, Chief Executive Officer
SUBJECT: TRAVEL REPORT – 2017 PUBLIC RETIREMENT INFORMATION SYSTEMS MANAGEMENT (PRISM)

Recommendation

Receive and file.

Background/Discussion

From April 9-12, 2017, Jon Gossard, Information Technology Manager, and Javier Lara, Information Technology Operations Supervisor, attended the 2017 Public Retirement Information Systems Management (PRISM) Association Conference in Nashville, TN.

The total cost for both individuals' attendance is included in the following:

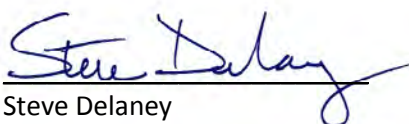
Conference Fee	Hotel	Transportation	Meals	Total
\$1,100	\$1,515	\$1,392	\$108	\$4,115

As it is not presently pre-approved, OCERS' Travel Policy, Section 19, states:

"Board Members and staff who travel to conference or seminars that are not automatically authorized in paragraphs 8 and 12 shall file with the Chief Executive Officer a report that briefly summarizes the information and knowledge gained that may be relevant to other Board members, provides an evaluation of the conference or seminar, and provides a recommendation concerning future participation. Reports by a Board Member or staff will be made on the Conference / Seminar Report form shown in the appendix. The Chief Executive Officer shall cause a copy of the report to be distributed to each Board Member and to the Chief Investment Officer."

A report summarizing the conference is attached.

Submitted by:



Steve Delaney
Chief Executive Officer

Report of Attendance at Conference or Seminar

Name of Staff Attending: Jon Gossard, Information Technology Manager, Javier Lara, Information Technology Operations Supervisor

Name of Conference/Seminar: 2017 Public Retirement Information Systems Management (PRISM) Association Conference

Location of Conference/Seminar: Hilton Nashville Downtown, Nashville, TN

Conference/Seminar Sponsor: PRISM Association

Dates of Attendance: April 9-12, 2017

Total Cost of Attendance: \$4,115 (approx. \$2,058 per person)

Brief Summary of Information and Knowledge Gained:

The theme of the 2017 Public Retirement Information Systems Management (PRISM) Association conference was “Pension Digitalization,” recognizing the ongoing efforts of our respective systems to continually innovate and modernize our systems and processes. Included within this theme were numerous sessions which provided opportunities for OCERS’ IT representatives to glean knowledge from others in similar situations and who are facing similar business problems. Sessions attended by OCERS staff covered these topics:

- **Cybersecurity**, including discussions around employing multi-factor authentication, identity proofing and device registration to secure self-service web portals, strengthening the “human firewall” in the organization and illustrating the inner-workings of phishing, whaling and ransomware attacks.
- **Business intelligence**, including discussions around aggregating data sources to provide high-level dashboard to answer common management questions.
- **Cloud services**, including discussions around how to leverage cloud-based technology solutions to rapidly address business needs.
- **Member roundtable**, providing an opportunity to share our current projects with other attendees and to hear what others are working on, allowing us to identify other systems with whom we would like to speak.

Evaluation of the Conference or Seminar:

The PRISM Conference affords OCERS staff an excellent opportunity to network with like-minded information technology leaders from sister agencies to discuss issues and solutions that are unique to the public retirement system administration field. Also discussed are current initiatives underway at other agencies, whose representatives are always willing to share what is going well and what could have been

Report of Attendance at Conference or Seminar

done better. Additionally, PRISM allows OCERS to give back by sharing our own experiences with projects such as the V3 implementation.

The PRISM Association also invites a select group of vendors who offer public pension-specific solutions, bringing together under one roof an amalgam of representatives to speak with regarding future initiatives.

Recommendation Concerning Future Attendance:

I highly recommend that we continue to attend the PRISM Conference on an annual basis. It is likely the single best conference we attend due to the specific focus of both the conference and the attendees on subjects that affect public retirement systems.

Submitted By: _____



Jon Gossard, Information Technology Manager

Return to: Executive Assistant

Copies to: Board Members, Chief Executive Officer & Assistant Chief Executive Officers

C-12

Memorandum

DATE: May 15, 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 Chris Prevatt

- **Private Equity's Gravity-Defying Fee Bonanza**
<https://www.bloomberg.com/gadfly/articles/2017-04-13/private-equity-revels-in-a-gravity-defying-fee-bonanza>

From Russell Baldwin

- **When Rising Seas Transform Risk Into Certainty**
https://www.nytimes.com/2017/04/18/magazine/when-rising-seas-transform-risk-into-certainty.html?_r=0
- **Down forever, no last hoorah: Why the market for fossil fuels is all burnt out**
- <http://www.calgaryherald.com/down+forever+last+hoorah+market+fossil+fuels+burnt/13310302/story.html>

+++++

From Shari Freidenrich

- **Huntington Beach City Council to grapple with pensions at Monday meeting**
<https://na01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.latimes.com%2Fsocal%2Fdaily-pilot%2Fnews%2Ftn-dpt-me-hb-council-preview-20170414-story.html&data=02%7C01%7CShari.Freidenrich%40ttc.ocgov.com%7C3ee63e5037e54a4c152108d486b82e79%7Ce4449a56cd3d40baae3225a63deaab3b%7C0%7C0%7C636281572990394106&sdata=zRwyBjzOaCCeUY4L39I08Sr1XOE0LUGDu8z3j%2Fa9yTE%3D&reserved=0>

From Mr. Packard

- **The Billion Dollar Budget Item Garcetti didn't mention in his State of the City Speech**
<http://www.latimes.com/local/lanow/la-me-pensions-20170421-story.html>

From Suzanne Jenike

Good afternoon Members of the Board,

A quick update on the communication efforts of the last few days regarding the AOCDS POST training issue. A letter was mailed last Friday to all 140 retirees as well as 10 ex-spouses impacted by the POST training benefit correction issue. The letter included information regarding the monthly overpayment as well as the items the Board would be discussing on May 15th, i.e. correct monthly benefits going forward, options for collection of overpayments etc...

In addition to the letter the Member Services supervisory team and I personally called every individual. Out of the 150 people impacted we were able to speak with the majority, probably upwards to 80-85%. For the most part the members reactions have been positive. They are not pleased to hear that their benefits will be reduced however most individuals were understanding and very appreciative of the call. Most individuals indicated that they would wait for a letter indicating the Board's decision but that attendance at the Board meeting would not be necessary.

We have not seen an increase in the call volume in general nor have we received any press inquiries to day. Please let me know if you have any questions or need clarification. This memo will be included in the May 15, 2017 edition of the Board Communications document.

Regards,

Suzanne Jenike | Assistant CEO, External Operations | Orange County Employees Retirement System

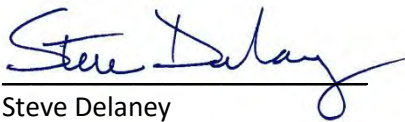
From Steve Delaney

- **What makes a great Chief Investment Officer?**
<http://www.charlesskorina.com/>

Other Items: (See Attached)

1. Monthly summary of OCERS staff activity, starting with an overview of key customer service as well as highlights and updates for the month of March.
2. Vermont Pension Investment Committee Climate Risk Divestment Discussion – Mr. Baldwin
3. Active vs Passive: From PCA – Allan Emkin

Submitted by:



Steve Delaney
Chief Executive Officer

Memorandum

DATE: April 28, 2017
TO: Members of the Board of Retirement
FROM: Steve Delaney, Chief Executive Officer
SUBJECT: OCERS ACTIVITIES AND UPDATES – MARCH 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 MARCH 2017.

CUSTOMER SERVICE

The top three questions in the month of March as received by OCERS' counseling staff:

What is the COLA percentage this year?

The Board of Retirement formally adopted COLA granting at the February Board meeting. OCERS' actuary, Segal Company, calculated the CPI of 1.89% rounded up to 2% for 2017. COLA is effective 4/1/17 and paid on the 5/1/17 benefit payment as we pay one month in arrears. Retirees and their survivors with retirement effective dates on or before 4/1/1982 received the full 3% COLA as governed by the plan as they had a COLA bank.

How do I update my tax withholding?

Tax withholding updates can be processed through the member's myOCERS self-service account. They can also download the forms from the OCERS website and submit them by mail.

Can I have a duplicate 1099-R mailed?

Tax form 1099-R is issued to payees with distributions from pensions. OCERS mails these forms by January 31st every year. The forms are also available to payees via their online member portal account. Payees who don't have computer access rely

MEMBER SERVICE STATS FOR MARCH 2017

Member Approval 100 %

Unplanned Recalcs 1

Retirement Apps Received

<i>Mar 2017</i>	79
<i>Feb 2017</i>	107
<i>Jan 2017</i>	151
<i>Dec 2016</i>	62
<i>Nov 2016</i>	64
<i>Oct 2016</i>	53
<i>Sept 2016</i>	45
<i>Aug 2016</i>	61
<i>July 2016</i>	62
<i>June 2016</i>	65
<i>May 2016</i>	51
<i>April 2016</i>	61
<i>Mar 2016</i>	61
<i>Feb 2016</i>	95

on mailed forms. When duplicate forms are requested, we mail them the form OCERS submitted to the IRS. Most of the time they misplace the form, yet sometimes we discover address changes that were not previously reported.

ACTIVITIES

OCFA VISIT TO OCERS REGARDING CONTRACT CITIES and UAAL

Executive staff, joined by Chair Ball and Vice Chair Prevatt, was happy to host Ms. Lori Zeller and Ms. Tricia Jakubiak of the Orange County Fire Authority. They came to OCERS offices on March 9 to provide us with an in-depth discussion of the challenges faced by Contract Cities in dealing with the cost of fire services, especially as nearly 90% of those costs relate to personnel, and any rise in OCERS contribution rates has a direct impact on what the cities must pay. Of special interest was a detailed discussion of the responsible plan OCFA has put into place, to pay off their UAAL in a shortened period of 10 years. Already three years into that plan, they are ahead of schedule. This material was very enlightening, and Chair Ball has requested that Ms. Zeller join us in September at the Board's Strategic Planning Workshop to share similar materials with the full Board.

OCERS SECURITY MEETING WITH GARTNER

Mr. Jon Gossard, OCERS IT and Security Manager provides a report on an important meeting in March with one of our key security consultants:

On March 8, OCERS hosted Gartner Research Director Matt Stamper, whose area of expertise is Security and Risk Management. For over an hour, Mr. Stamper discussed the current state of cybersecurity and the threat landscape with CEO Steve Delaney, IT Director Jenny Sadoski, Assistant CEO Brenda Shott and myself. Mr. Stamper validated our current information security initiatives and suggested several others we will pursue as we stay focused on protecting our member's confidential data.

As background, OCERS enjoys an effective relationship with Gartner, an industry-leading \$2 billion information technology research and advisory firm providing numerous services that offer significant value to OCERS. Among these services are:

- **Access to the entirety of Gartner's research in an easily searchable online repository.** OCERS' IT staff frequently consults this research when investigating a technology project or a specific vendor. Gartner's research includes Magic Quadrants and hype cycle charts, which visualize the state of a specific technology space, such as managed security services, colocation facility providers or cloud telecommunications vendors, making it easy to determine who the major players are within a certain field and the maturation of specific technologies, respectively.
- **Advisory services such as document reviews.** OCERS' IT Department makes a point of requesting Gartner analysts to evaluate documents such as requests for proposals, proposal submissions and service contracts in order to leverage Gartner's extensive experience in these areas. Gartner's exposure to information not just nationwide but globally allows them to offer unique insight that

OCERS alone would have difficulty recognizing. OCERS has used these specific services for our business continuity and disaster recovery initiative and our colocation facility RFP, among others.

- **Analyst consultations on technology topics of interest.** As noted above, Gartner analyst Matt Stamper was recently onsite at OCERS headquarters to discuss OCERS' cybersecurity practices with executive and IT staff and offer additional recommendations on what OCERS can do to better protect confidential member data.
- **State-of-the-art conferences on targeted technology areas.** Gartner offers well over a dozen conferences on specific technology areas, offering an opportunity for OCERS' IT staff to network with IT staff from disparate fields, which is frequently a horizon-expanding experience. In the past three years, IT staff has twice attended the Gartner Data Center, Infrastructure & Operations Management Conference, which is particularly timely in light of OCERS' current data center migration as part of its overall business continuity and disaster recovery planning. Gartner also offers broader view conferences in the form of its Catalyst and Symposium events.

SPECIAL MEETING WITH SUPERVISOR STAFF

I am joined alternately by Ms. Jenike and Ms. Shott for our monthly "OCERS Informational Update" meeting with the Executive Assistants of the County Supervisors, as well as representatives of the County's CEO Office, held at the County's Administrative building on the second Wednesday of every month. In addition, on March 17, I held a special meeting with all five staff members working for Supervisor Do. A new Executive Assistant had been hired, Mr. Chris Wangsaporn, and he requested that I come and meet his entire staff in order to bring them up to speed on all things OCERS. It was an excellent meeting, all were engaged, wanting to understand benefit structures, rate setting processes, how PEPRAs has impacted costs, and many other very relevant topics.

UPDATES

LAST YEAR'S ATTEMPT TO ILLEGALLY REDIRECT A RETIREE'S BENEFIT CHECK

You will recall that we learned the individual who attempted to redirect our retiree's check was apprehended in England. We had not heard anything in some months, so I requested that Mr. David James, who remains our informational lead for this matter, reach out to his contacts at the Orange County Sheriff's Department for an update. Mr. James provides the following report:

I heard back from Investigator Scott Yuen of OCSD this morning about the status of the investigation. He told me UK law enforcement is moving along with the prosecution, and it is in their hands at this point. He said they have finalized their investigation and presented their evidence to the Crown Court. The suspect was arrested and is out on bail. Because the nexus for the crime was in the UK, the UK authorities can carry out the prosecution. The UK authorities will determine whether to go to trial, settle, or what the outcome will be.

Investigator Yuen said the process could take months more.

I also asked about the FBI, with whom I filed the initial report describing the attempted hack. I attempted numerous times to call various agents, but they have not returned the calls. Investigator Yuen said he has been in contact with agents from the FBI and the Secret Service who work cybercrimes, but they had determined that what was being done by OCSD and the UK police was sufficient, so we should continue to contact OCSD for information.

Investigator Yuen asked if we could share with them a copy of the report on the incident and IT security done for OCERS by Mandiant. I told him I would ask management at OCERS if we can send it to him.

SECOVA HEALTH INSURANCE CONVERSION

We previously reported positive news, the County of Orange did step up and add a number of assets on their side to tackle this issue, and our phone call load decreased significantly.

Ms. Catherine Fairley of Member Services provides the following report as of the end of March:

Call volume has decreased. OCERS has resumed normal processing for the monthly pension files and discontinued additional analysis. Working with County staff on process improvements with Secova - especially responding to error reports and retirement intent file usage. OCERS Member Services staff audited 50 survivor accounts to confirm status, and Finance division working on trust reconciliation for payees who received a check from the County for reimbursement of premium deduction errors. County Employee Benefit staff has improved response to escalated calls sent by OCERS. The County set up FTP site so all files with PII (personally identifiable information) are sent securely.

CIO SEARCH

As reported at Monday's (April 24) Investment Committee meeting, through the month of March we had received more than 160 applications, and conducted 22 Skype interviews. From those interviews we culled the top eight candidates for in-person interviews to take place in April, with three finalists to be interviewed in person by myself and the Board's ad hoc CIO Search Committee (Trustees Ball, Hilton and Prevatt), together with our two main consultants, Mr. Emkin and Mr. McCourt.

INVESTMENT DEPARTMENT UPDATE

Ms. Chary, OCERS Director of Investment Operations, provides a report on March activities in the Investment Department:

During the month, the Investment Committee voted to adopt Meketa's recommended target ranges. Meketa believe that the widths of the target ranges represent a best practice. The ranges are sufficiently wide to allow for future tactical positioning, if desired, and can accommodate opportunistic investments, while still maintaining adequate diversification. OCERS' portfolio at the end of February is in excess of \$14.1 billion with the one-year return at 16.0%. During the month, OCERS closed on Argo Capital, the investment will be managed in a separately managed account. The objective of the investment is to invest in middle-market core energy and utility infrastructure opportunities in North America.

OCERS SELF-SERVICE PORTAL

In our pursuit of improved customer service, we continue to emphasize serving our members via the OCERS Self-Service Portal. Ms. Catherine Fairley reports that while we had 22,000 member accounts set up on PG at the time of going live with V3, and that accrued over a period of nearly 10 years, we are already at more than 16,000 member accounts registered with *myOCERS*. The report below provides a breakdown of who is signing up:

OCERS - Management Information System (MIS)

MEMBER SELF SERVICE PORTAL (MSS) STATISTICS as of 04/04/2017

 [View MSS Analytics](#)

MSS Users	Total Contributors	Total Payees	Total members
16012	21892	14245	36137

MSS Registered Users by Status

User Type	Count
1 Active only	8528
2 Active and DRO or Beneficiary	30
3 Deferred only	1043
4 Deferred and DRO or Beneficiary	1
5 DRO or Beneficiary	390
6 Rehired Retiree only	10
7 Rehired Retiree and DRO or Beneficiary	0
8 Retiree or Disabled only	5710
9 Retiree or Disabled and DRO or Beneficiary	87
10 Others	255
11 Total	16012

MARCH STAFFING SUMMARY

A super hire with regard to the Deputy Chief Counsel, Lee Fink, former Deputy General Counsel of the Department of Agriculture in Washington DC accepted the OCERS offer to come work alongside our Ms. Ratto. He will be relocating to Orange County when he joins OCERS on April 14th.

The Administrative Services Department was extremely busy with the recruitments in March and filled five positions, including a Sr. IT Applications Developer, an Extra Help-Deputy Chief Counsel and an Office Technician. In addition, two current employees received promotions, one to Retirement Benefits Technician and one to Retirement Benefits Supervisor.

As of March 31, 2017, a total of four employees left OCERS employment (two voluntary resignations, one transfer to the County and one probationary release). The current annual turnover rate is rounded

to 5%. 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 nine vacancies, two of which have candidates scheduled to start in April. The six remaining positions are either in the recruitment phase or the department is working with the department head to open the recruitment. Of the 80 budgeted positions (28 OCERS Direct and 52 County positions), OCERS has 71 positions filled.

Please find the details of recent recruitment activity below:

Position Type	Position Title	Department	Comments
OCERS	Chief Investment Officer	Investments	Interviews April 12 &13
OCERS	Deputy Chief Counsel	Legal	Start date April 14, 2017
County	(2) Retirement Program Specialist	Member Services	Interviews April 6, 2017
County	Office Technician	Member Services	Start Date April 14, 2017
County	IT Business Analyst	Information Technology	New position 01/01/2017 (pending open date)
OCERS	Member Services Manager	Member Services	New position 01/01/2017 (pending open date)
County	(2) Sr. Retirement Program Specialist	Member Services	New position 01/01/2017 (pending open date)

As a reminder you will see this memo included with the BOARD COMMUNICATIONS document as part of the consent agenda for the May 15 meeting of the OCERS Board of Retirement.



Vermont Pension Investment Committee

CLIMATE RISK DIVESTMENT DISCUSSION

February 8, 2017

PCA

PENSION
CONSULTING
ALLIANCE

Sarah Bernstein, Ph.D., FSA

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Acknowledgements

In PCA's opinion, VPIC stands among the leaders of U.S. public pension funds in its efforts to consider and to address potential climate change risks and their potential impacts on the VPIC portfolio. PCA is honored that VPIC retained our firm to examine the potential impact on the VPIC portfolio of divestment from one or more of the following: a) coal, b) ExxonMobil, and c) fossil-fuel investments, and to work with the Treasurer, VPIC staff and NEPC LLC to try to seek consensus recommendations for consideration by VPIC.

We thank the VPIC, the Vermont Treasurer, and VPIC staff for their inputs throughout this process; the 26 U.S. public pension funds that responded to PCA's survey of VPIC peers on climate change related investing strategies (Appendix 1); MSCI for providing lists of fossil fuel and thermal coal securities derived from the MSCI ACWI IMI universe, which PCA distributed to all VPIC managers for the sole purpose of preparing information for this report; every VPIC investment manager for their time and effort in contributing information for this report; FTSE/Russell, MSCI, SPDJI for providing information on new ESG indexes; MSCI, Northern Trust, Rhumblin, and SSGA for providing information on potential new passive ESG investment vehicles; CERES/INCR and the Sustainable Accounting Standards Board ("SASB") for their input; and Allan Emkin, PCA founder and Managing Director, for his insights and support.

VPIC's process for this report included outside review of PCA's report by a group designated by VPIC. We thank these individuals, each representing their respective organizations, for their thoughtful involvement: Margaret Belmondo and Chris Levell, Vermont's Investment Consultants, NEPC, LLC.; Andrew MacLean, ExxonMobil ("Exxon" or "XOM"); Austin Davis, 350.org Vermont; Eric Becker, Clean Yield; Guy Page, Divestment Facts; Joe Choquette, who represents the American Petroleum Institute in Vermont; Robb Kidd, Sierra Club, Vermont Chapter; and Sarah Wolfe, VPIRG.

Forward

Eighteen of the past 19 years have been the hottest on record. In our opinion, whether or not you are convinced of humanity's role in climate change, there is a preponderance of evidence for climate change and its potential risks. We believe climate risks to investments, including potentially stranded assets, have become a potentially material investment issue to the degree that the question has become: why would you not seek to understand and manage these risks? We believe VPIC should continue its effort to address and manage climate and other ESG risks and opportunities, and stay abreast of ever-changing assessments of risks and approaches to managing them. In our opinion, divestment of fossil fuels for VPIC is one possible strategy to mitigate one, potentially significant, climate risk – possible stranded assets of fossil fuel suppliers.

This report addresses the impact on the VPIC investment portfolio of divestment from fossil fuels, thermal coal, and ExxonMobil. We analyze these divestment strategies' potential impact on the expected returns, risks and costs to the VPIC investment portfolio, and the potential impacts of divestment phased in over time; consider divestment within the context of the VPIC's governance structure, including its asset allocation, investment strategy within public equities, proxy voting and engagement policy, and in the context of other investment management tools available to VPIC.

By the numbers, the larger the scope of any divestment, the larger the expected potential impact on returns and risk to the portfolio. For this report we employed a narrower definition of fossil fuels and of coal than was analyzed by VPIC staff in its 2015 study of divestment. We include only companies that own fossil fuel reserves rather than the full GICS energy sector; thermal coal rather than all coal; and we exclude utilities. VPIC invests in commodities via futures. Thus commodities are not relevant to this definition of fossil fuels. As a consequence of these differences in definition, this report finds a smaller fossil fuel and coal exposure and a smaller potential risk-return impact on the VPIC portfolio than the results reported by staff. A second consequence is that our report is less consistent than the VPIC staff report with the underlying general themes – divest from all fossil fuels and divest from all coal. In our opinion, our results and conclusions are consistent with those found by VPIC staff.

Second, VPIC's overall investment strategy is designed to diversify among asset classes to balance overall market risks. In our opinion, fossil fuel supplier divestment can be a tool primarily in public equities to remove exposure to potentially stranded fossil fuel owner assets. In our opinion, other portfolio-wide potentially material financial risks and opportunities posed by climate change are not addressed by fossil fuel divestment. Divestment does not: address climate change material risks (including technological, policy, and physical) evident in other industries from agriculture and forestry to infrastructure, buildings and insurance. Divestment does not provide enhanced exposure to companies involved in energy efficiency and renewable energy. Publicly held equity divestment only transfers ownership of fossil fuel securities; it cannot provide fossil fuel alternatives with any new financial resources. In our opinion, addressing potential climate change risks and opportunities in the VPIC portfolio is best accomplished through a bottom up analysis within each asset class.

Third, within VPIC's equity asset class, we find that divestment adds ongoing costs to portfolio management that are proportionally greater the smaller the fossil fuel divestment strategy (i.e., it is most expensive relative to the market value of the assets divested, to divest from ExxonMobil). We find that investment conflicts with VPIC's equity asset class governance structure, including its investment strategy, and proxy voting and engagement approach. VPIC allocates its publicly held equity assets primarily towards passively managed funds to gain inexpensive overall market exposure. VPIC complements these investments with actively managed investments in discrete market segments where VPIC believes active management can increase its risk-adjusted returns, net of fees. Divestment constrains active managers in their mandate to: find the best investment opportunities; distinguish

among differing magnitudes of risk by type of fossil fuel; weigh stranded asset risks at each company with other risks in security selection; and time buy/sell decisions.

For passively managed, market-wide equity investments, the risk of stranded assets is one of many potential long-term risks that VPIC must consider, including other climate risks. VPIC's passive equities are managed against market-cap weighted indexes. These indexes do not separately account for potentially stranded asset risks, over and above any stranded asset risk embedded in a company's market cap. These indexes include other biases. There exists a multitude of market-wide benchmarks that seek to offer investors better overall risk-adjusted returns than market-cap weighted indexes. These include fundamental, equal-weighted, smart-beta, and a burgeoning plethora of Environmental, Social and Governance ("ESG") indexes. We believe benchmarks other than ex-fossil fuel, or ex-coal can better balance potential stranded asset risk with the multitude of climate, ESG and macro risks (an ex-Exxon benchmark must be custom developed). Divestment of fossil fuels, thermal coal, or ExxonMobil, even within the equity asset class, requires costly restructuring of investments from inexpensive comingled funds, to higher cost separately managed accounts ("SMA"). In our opinion, divestment from fossil fuels or ExxonMobil would negate a critical element of VPIC's proxy voting efforts on these matters - VPIC's voting and co-sponsoring of shareholder proxies at fossil fuel companies (Appendix 2).

We believe that VPIC's significant proxy voting and engagement efforts on climate risk issues at fossil fuel companies, including ExxonMobil, and investment strategies other than divestment, are better suited than divestment for VPIC to manage risks and opportunities posed by climate change within its role as fiduciary of a U.S. public pension fund.

Executive Summary

Conclusions

- **We find that divestment from fossil fuels, thermal coal, or ExxonMobil could:**
 - increase costs
 - add diversification and technological change risks to VPIC's portfolio,
 - only effect potential stranded assets risk, not other material climate change risks and opportunities,
 - leave unaffected the financial situation of companies offering alternatives to fossil fuels,
 - conflict with VPICs governance in its asset allocation, equity investment strategy, and proxy voting and direct corporate engagement, and
 - introduce a slippery slope of potential for other restrictions on VPIC's investment universe whose potential benefits have not been shown to outweigh the potential harm to the VPIC portfolio.

Each of the three divestment tracks carry different degrees of these central concerns.

- Fossil fuel divestment may introduce meaningful diversification risk, increase costs - including cost to restructure the VPIC portfolio from commingled funds into to SMAs, higher management fees, and operational costs, reduce VPIC's proxy voting and engagement opportunities across an entire sector of the economy, introduce a slippery slope potential for other restrictions, particularly for other aspects of today's carbon economy. Fossil fuel divestment does not reduce the global economic dependence on, or demand for, fossil fuels, or impact the financing of the targeted companies.
 - Thermal coal divestment would entail higher proportional costs to VPIC than fossil fuel divestment, because the full costs of transitioning out of inexpensive commingled funds and paying the ongoing management fees of more expensive SMA's would be incurred for a much smaller divestment.
 - ExxonMobil divestment would entail the highest costs proportional to the size of the assets divested and reinvested, and would introduce a single company precedent for exclusion that would dramatically widen the opportunities for demands for exclusion from VPIC's investment universe despite increased costs to the plan. Exxon divestment would negate the proxy voting and engagement efforts at Exxon that VPIC and the Vermont Treasurer undertake (Appendix 2), and thereby potentially work against the broader institutional investor climate change related efforts that have gained traction among Exxon shareholders.
- **Markets now offer meaningful tools to address climate risk other than divestment**, from coordinated proxy voting and corporate and public policy engagement, to passive and active low carbon alternatives that avoid the broad market exit risk inherent in near-term divestment approaches.
 - **Divestment conflicts with VPIC governing policies:** Given the financial and governance costs that come with fossil fuel divestment, in PCA's opinion, divestment of fossil fuels, thermal coal, or Exxon has not been shown to be in the best interests of VPIC pension beneficiaries, and conflicts with VPIC governance structure.

Recommendations

- **Be an active shareowner of fossil fuels in the VPIC portfolio.**
- **Continue VPIC's active shareowner proxy voting, and engagement** with both companies and public policy regulators regarding climate risk matters; maintain ongoing manager monitoring of climate change risk and opportunity management. Consider integrating distinctions between material and immaterial ESG risks, such as those defined by the Sustainable Accounting Standards Board ("SASB"), into VPIC's manager monitoring, and decisions over which shareholder proposals to invest VPIC's corporate engagement time and resources.
- **Continue VPIC's active engagement in institutional investor organizations** such as Ceres, INCR and SASB to further leverage VPIC's efforts.
- **Conduct a thorough review of VPIC's passive equity manager's proxy voting.** In the event that VPIC conducts a search for a passive equity manager, include consideration of managers' proxy voting policies and actual votes on climate change and other ESG issues to potentially further broaden VPIC's alignment of interests with the proxy voting done on VPIC's behalf by passively managed equity managers.
- **Reach out to other state public pension funds to explore possibility of creating a new passive equity investment vehicle that VPIC could potentially seed, designed to more closely align with VPIC's proxy voting** and engagement. The investment vehicle could be designed for VPIC and other U.S. public pension funds that do not have the resources to bring their passive equity investing in-house. Such a vehicle would offer long-term ongoing opportunity, regardless of market change, including long-term transformations in global energy. There appear to be options that could keep costs in line with VPIC's current passive equity commingled fund cost structure. Depending on how a fund was implemented, a new investment vehicle may involve higher management fees or costs than VPIC's current passive equity commingled funds.

As of June 30, 2016, 53% of VPIC equities were passively managed (\$806.5 million). PCA requested information from VPIC's current passive equity manager – SSGA, and from Northern Trust ("NT") on a potential new commingled vehicle. SSGA responded that it is not an option at this time for SSGA to launch a fund that implemented either custom public fund proxy voting guidelines, or guidelines of a third party proxy voting entity, as SSGA believes that their corporate policy is strong on ESG/climate issues (Appendix 3).

Northern Trust offered a few options: VPIC could invest in NT's existing R3000 Labor Select Index Fund, which votes proxies according to ISS's Taft Hartley proxy voting guidelines and outsources the proxy voting to ISS; NT could open a new commingled passive equity fund for public fund investors to either invest according to a specialized proxy voting guideline from a proxy service provider, (such as the ISS' or Glass Lewis' public fund or ESG guidelines), or to invest in a new vehicle that votes proxies according to a new public fund custom proxy voting guideline developed by VPIC (or developed jointly with other public funds). The preliminary fee schedules for these options are set forth in Appendix 4. They assume a minimum of \$250 million in assets to launch a new fund. The fee schedule is 3 basis points per annum for an S&P 500 (with securities lending) index fund, dropping to 2 basis points per annum for any investment \$500 million or more. Implementation of a non-U.S. fund is more expensive. A final alternative might be for VPIC and other funds to set up their own investment management entity, such as a limited partnership, then retain the appropriate resources for legal, custody to operate the fund, conduct an RFP for a manager to passively invest in a commingled fund the new entity's assets, and conduct a search to retain a proxy service provider to implement the custom proxy voting guidelines.

For the custom public proxy voting guideline option, that utilizes NT, rather than going through a new entity, the participating funds would not need to establish a more expensive independent investment partnership. In PCA's opinion, a challenge may be reaching agreement among a sufficient number of public funds on a new custom public fund proxy voting policy to seed a new passive commingled equity fund. The participating pension plans could consider establishing an entity to manage their collective process and collaborations.

- **Work with VPIC custodian to explore custodial reporting on ESG factors in VPIC portfolio compared to market**, possibly including ESG corporate ratings, and carbon footprint analysis to further support VPIC manager monitoring efforts.
- **Consider shifting a portion of VPIC assets to strategies that are expected to stimulate and benefit from long-term shifts to a low-carbon economy.**
 - Public equities - consider shifting a portion of VPIC's passively managed assets to a fund benchmarked to an index such as MSCI's Low Carbon Index, or FTSE's Green Revenue Index. Neither index divests from fossil fuels. Instead, they reweight securities in the underlying benchmark to either reduce the economy-wide carbon footprint, or increase the green exposure, while optimizing to maintain a close tracking to their core underlying benchmarks. Today, low carbon indexes provide meaningful reduction in exposure to carbon emissions. Over time, we expect low carbon indexes to more closely resemble the carbon exposure of the underlying market cap weighted benchmark as the world moves towards a low carbon economy. At this point in time, a VPIC investment in such a passive equity fund would increase VPIC's management fees. There are not yet commingled passive equity funds in which VPIC could invest based on either benchmark. An ETF does exist based on MSCI's Low Carbon Index.

PCA requested information from SSGA, Rhumblin (specializes in passive index funds) and MSCI on potential management fees to establish a new commingled low carbon fund. We used MSCI's Low Carbon Target Index as an example. Potential fee schedules are listed in Appendix 3 (SSGA), and Appendix 4 (Rhumblin). Any fund of this sort would include additional fees compared to VPIC's current passive equity, including index fees wrapped in due to the additional three to four basis points that MSCI currently charges for their custom ESG indexes.

Private equities - consider shifting a portion of VPIC's allocation to a strategy that includes a higher portion of clean technology investments. The costs involved in this strategy include the staff and Board time to determine a strategy, the costs and time of issuing an RFP, and may involve ongoing higher private equity management fees because VPIC's current sole private equity manager does not have an offering of this type.

Findings

As of June 30, 2016, VPIC held 3.6% of its \$3.74 billion total portfolio in fossil fuels. This percentage is based on the MSCI ACWI IMI universe (broader than the VPIC MSCI ACWI reference benchmark because it includes securities for small cap companies, while the MSCI ACWI focuses on the large/mid cap universe), and defines fossil fuel companies as any company with proven fossil fuel reserves. Coal companies are defined using the California list of thermal coal companies, as provided by MSCI.

Fossil fuels:	3.6% (\$134 million)
Thermal coal:	0.6% (\$22 million)
ExxonMobil ("XOM"):	0.3% (\$10 million)

At 3.6%, VPIC's actual exposure to fossil fuels was significantly lower than the benchmark. VPIC fossil fuel exposure was approximately half (54%) the 6.6% exposure of the MSCI ACWI exposure. Similarly, VPIC's Exxon exposure was 0.3% of its total portfolio, compared to 1.1% of the MSCI ACWI. VPIC's 0.6% exposure to thermal coal companies was below the 0.8% of the MSCI ACWI.

Equities represented the largest VPIC asset class:

Equities:	40%
Fixed Income:	32%
Absolute Return:	17%
Alternatives:	11%

The VPIC equity asset class held the vast majority VPIC's fossil fuel exposure:

VPIC share of fossil fuels in VPIC Equity Asset Class:	79%
VPIC share of thermal coal in VPIC Equity Asset Class:	92%
VPIC share of ExxonMobil in VPIC Equity Asset Class:	92%

VPIC commingled funds (which includes all passively managed and many actively managed funds) held the largest share of VPIC's exposure to fossil fuels:

VPIC commingled funds share of VPIC fossil fuels:	58%
VPIC commingled funds share of VPIC thermal coal:	78%
VPIC commingled funds share of VPIC ExxonMobil:	97%

Active managers held modest to zero fossil fuel and thermal coal positions, and zero Exxon.

VPIC's total percentage exposure to fossil fuels, thermal coal and Exxon were each less than that of an equity reference benchmark presented in VPIC performance reports – the MSCI ACWI.

Risk and Return: By definition, divestment reduces diversification and thus increases risk. Going forward rates of return differences between VPIC's actual portfolio and its hypothetical portfolios under divestment cannot be estimated. Future returns cannot be forecast by historic returns. Macro and industry experts have failed to predict dramatic shifts, such as shale production. In our opinion, the potential to accurately predict the timing, industry and company return impacts for VPIC is low, given the high uncertainty in policy, winning technologies, and which companies may successfully adapt. PCA analyzed VPIC managers' hypothetical historic rates of returns for trailing one-year and five-year periods under the three divestment scenarios. The VPIC manager's estimates were self-reported. All managers were asked to use the fossil fuel and thermal coal lists of companies provided by MSCI for all data responses. The results show that under divestment, VPIC managers would have had mixed results compared to their actual performance for VPIC – some marginally better and some marginally worse rates of return than their actual returns.

Costs: The largest measurable explicit costs of divestment to VPIC would be ongoing increased management fees. **Management fees would increase under each of these three divestment scenarios** because VPIC commingled funds, where the bulk of VPIC's fossil fuel were held, would have to be restructured into materially higher-cost SMA funds. The ongoing higher fees are proportionally higher for the divestment scenario with the lowest amount of assets to be divested - Exxon - because the fee changes would be the same, whether VPIC restructured and set up an SMA to divest just from ExxonMobil, or to divest from all fossil fuels. For two of VPIC's four commingled equity funds, the commingled fund manager, SSGA, responded that VPIC cannot be moved to an SMA for those funds because the current level of AUM in those two accounts is too small, and such a transition would be cost prohibitive. VPIC's current SMA managers that held any fossil fuels reported that management fees would remain largely unchanged. **Transaction costs:** VPIC's commingled fund managers, which held the vast majority of VPIC's fossil fuel positions, cannot divest VPIC from individual securities, because VPIC does not hold direct ownership of individual securities in a commingled fund. Thus these funds

would have to be closed and restructured as SMAs. In addition to the ongoing higher management fees of a new SMA, the costs to close down these funds and reopen SMAs, where possible, would include the administrative costs of opening an SMA, new custodial costs to allow VPIC to hold the individual securities, and transaction costs to buy in VPIC's name the full set of ex-fossil fuel, ex-thermal coal, or ex-Exxon securities. The fossil fuel companies in the MSCI ACWI IMI trade in highly liquid markets. Consistent these market dynamics, and reflecting the small exposure to fossil fuels and thermal coal in VPIC SMAs, the combined transaction costs to divest (sell) were estimated by VPIC SMA managers: VPIC SMA fossil fuels, \$185,422, and VPIC SMA thermal coal, \$35,914.

VPIC private equity fossil fuel divestment would require selling all holdings on the secondary market, likely at a significant discount to Net Asset Value (NAV). **Monitoring costs** would increase to insure compliance throughout the portfolio of VPIC manager's compliance with VPIC-specific divestment lists. **Opportunity costs** are expected to vary depending on the manager's target market, and timing.

Phase-in: A short-term divestment phase-in would incur essentially the same magnitude of costs, including transaction costs and management fees, as immediate divestment, and may be at a poor time in the energy market. **A long-term divestment period**, could be designed to divest more in line with a long-term technological shift to a lower carbon economy. For example, Vermont's energy policy sets forth a 30-year period for the state to transition to 90% reliance on renewable energy. A 30-year divestment period might harmonize better with a shift from global dependence on fossil fuels to a degree that renewables become a larger share of global energy consumption. Such a long-term divestment period, if implemented in incremental steps throughout the portfolio, with regular review and reassessment, could smooth out divestment impacts and reduce the impact of near-term market timing. The increases in management fees required to dismantle VPIC's inexpensive commingled funds, and restructure those assets into more expensive SMA's would still be borne by VPIC, but would be spread out over time, if VPIC did not dismantle and restructure all commingled funds at one time. In our opinion, extending divestment over five-to-seven-year business cycle would do little to address the key underlying global dependence on fossil fuels, although, depending on timing, it could potentially contribute to smoothing out return impacts somewhat.

Additional divestment from VPIC's commodity asset class would allow VPIC to completely exit all fossil fuel related exposure. We agree with VPIC's staff analysis that such divestment would undermine the strategic benefits including inflation protection and diversification that the asset allocation to commodities brings VPIC and require a reassessment of VPIC's asset allocation strategy.

Divestment would negate VPIC's and the Vermont Treasurer's considerable efforts in proxy voting at fossil fuel companies, even as climate change related shareholder proxies are expanding in voting share. VPIC's efforts went beyond voting their proxies and included in 2016 co-filing six proxy proposals at major oil companies, including Exxon. Engagement at the regulatory level, and through general letters with broad institutional investor organizations of which VPIC is a member could still be undertaken.

Climate change risk is ubiquitous. Divesting from fossil fuels can reduce stranded asset risk, but does not address other climate change risks. Divesting from fossil fuel suppliers:

- Has little proven impact on fossil fuel corporate policies, or on government policies.
- Increases investments in: sectors whose products and services generate demand for fossil fuel energy including utilities and transportation, sectors that generate significant CO2 emissions, such as construction, sectors that finance fossil fuel development, and sectors facing material physical risks of climate change including real estate and consumer goods.
- Retains investments in oilfield services and equipment, necessary to fossil fuel production.
- Does not overweight VPIC's exposure to companies potentially stimulating and benefitting from low-carbon and renewable energy solutions.

Divestment from fossil fuels sets a 'slippery slope' precedent for VPIC to restrict its manager's stock selection based on criteria that are not proven to benefit VPIC. Divesting Exxon, as a single company, and then excluding it going forward from VPIC's securities universe, would open VPIC to an entirely new degree of precedent setting for demands for individual companies to be excluded for many varieties of reasons.

Introduction

VPIC's mandate to PCA for this project was to review potential divestment and its potential impacts on the VPIC portfolio, and to work with Treasurer staff and NEPC LLC to seek to come to consensus recommendations, for consideration by the VPIC subcommittee that was formed to examine the potential impact of divestment from one or more of the following: a) coal, b) ExxonMobil, and c) fossil-fuel investments from equities, fixed income, commodities, and other investment classes. For this report, VPIC requested that: "Specifically, this study would look at all three tracks (coal, ExxonMobil, and fossil fuels) and would consider a) the impacts, if any, on the return and risk characteristics of the VPIC portfolio, b) impact on costs, if any, including transaction costs, c) impacts on the governance structure of VPIC, including construction, management and oversight, and d) impacts that phase-in of various divestment strategies could have on the previously identified considerations."

In our review of the considerable prior work and discussion by VPIC on potential divestment of fossil fuels, we found the reports by VPIC Staff to provide thorough and thoughtful analysis of the potential impacts of fossil fuel divestment. We find the related memorandums and comments by NEPC well-reasoned. PCA's findings are consistent with the findings and recommendation of VPIC staff. As summarized in the July 28, 2015 staff report to VPIC: "*Staff recommends that proposals for fossil-fuel/energy divestment be rejected. Staff believes that analysis demonstrates that such divestment fails to satisfy the criteria set forth in the VPIC ESG Policy, presents significant governance challenges, and is not in the best interest of the pension beneficiaries.*"

For this report, we seek to expand on the existing VPIC body of research by analyzing additional input from VPIC's managers on their estimates of return, risk, transaction costs, opportunity costs and management fees under three different scenarios: divestment from fossil fuels, thermal coal, and ExxonMobil. Managers were asked to estimate what hypothetical changes in their historic returns to VPIC under divestment, using their June 30, 2016 assets, and using June 30, 2016 as the endpoint for historic analysis. Similarly, managers were asked to estimate potential costs of potential divestment.

We further analyze divestment within the context of comparison to VPIC peer public pension funds actions regarding climate change issues. This report also assesses divestment strategies compared to other market alternatives available to institutional investors to address climate change issues, highlighting key parameters for institutional investors.

The VPIC Regulatory Framework

The framework for PCA's review is the legal and regulatory framework that guides VPIC. VPIC and its investment managers are required to make VPIC's investments in accordance with the standards of care established by the prudent investor rule under 14A V.S.A. 902. As noted in staff reports, the VPIC is "required to consider general economic conditions, the possible effect of inflation or deflation, the total role that each investment or course of actions plays within the overall trust portfolio, the expected total return from income and the appreciation of capital, and an asset's special relationship or special value, if any, to the purposes of the trust or to one or more of the beneficiaries."

The State retirement plans are subject to Section 401(a) of the Internal Revenue Code which provides that the plans must be maintained and the trustees must act for the exclusive benefit of the plan's beneficiaries. The exclusive benefit rule is codified in Vermont state law as follows:

Under any trust or custodial account, it shall be impossible at any time prior to the satisfaction of all liabilities with respect to members and their beneficiaries for any part of the corpus or income to be used for, or diverted to, purposes other than the exclusive benefit of members and their beneficiaries (3 V.S.A. 472a(b)).

VPIC's ESG policy, adopted November 2013, further states that: the Committee may choose to consider ESG Initiatives, provided they are consistent with the Committee's obligations to the members and beneficiaries of the participating retirement systems and with the standard of care established by the prudent investor rule. In cases where investment characteristics, including return, risk, liquidity, and compliance with the allocation policy are appropriate for the Portfolio, the Committee may consider ESG Initiatives that have a substantial, direct and measurable benefit to the interests of the Portfolio.

The VPIC ESG Policy states that ESG Initiatives will be evaluated according to five specific factors:

- 1) Any ESG Initiative must add to or complement and not dilute or compromise the overall Portfolio strategy. ESG Initiatives will be evaluated within the context of the Portfolio as a whole and not in isolation. The Committee is a long-term investor that strives to maximize investment returns without undue risk of loss.
- 2) The ESG Initiative must target risk-adjusted, market-rate returns and provide net returns equivalent to or higher than other available investments at commensurate levels of risk. Social benefits of the ESG Initiative will not justify lower risk adjusted returns or higher investment risk for the Portfolio or any asset class within the Portfolio.
- 3) ESG Initiatives must not exceed a reasonable weighting in the Portfolio, or skew a reasonable weighting in the Portfolio as a result of investment in or divestment from any one investment strategy, sector or geographic locations. ESG Initiatives should maintain the overall Portfolio's compliance with its asset allocation strategy. Social benefits of an ESG Initiative will not justify deviation from the Asset Allocation Plan adopted by the Committee.
- 4) ESG Initiatives requiring an investment should be managed by qualified discretionary investment managers. The Committee will not make any direct investments. Similarly, any divestment of Portfolio assets should be accomplished by a qualified discretionary investment manager in a manner designed to minimize transactional costs and minimize losses to the Portfolio.
- 5) Any benefits of ESG Initiatives should be able to be quantified, reviewed and monitored by the Committee, State Treasurer's staff and third-party consultants without inappropriate expenditure of time and resources. A review of both the investment performance and the collateral benefits will be undertaken for the purpose of determining whether the Committee will maintain and ESG Initiative. The collateral benefits of an ESG Initiative shall be measured, in terms of foregone return, transaction costs and monitoring costs, alongside the estimated return of the ESG Initiative.

Reductions in expected returns to VPIC, whether from investment return downturns or increased costs, could increase the unfunded liability of the pension plans managed by VPIC, and potentially negatively affect the plans' funded status. As of June 30, 2016, the funded status of the State Employees', State Teachers' and Municipal Employees' plans were 75%, 58%, and 86% respectively. Vermont State Employees' and Teachers' plans are considered mature pension plans. For example, the ratio of retirees and beneficiaries to active employees was reported at 78% for the Vermont State Employees, and 88% for the Teacher's as of June 30, 2016. The Vermont Municipal Employees Retirement plan ratio of retirees and beneficiaries to active employees was 39% as of June 30, 2016. The more mature a plan, the less flexibility it typically has to recover from any market downturn.

The Numbers: Defining Fossil Fuels, Coal and ExxonMobil

VPIC allocates the largest share of its assets to the Equities asset class (40%), followed by Fixed Income, Absolute Return, Real Estate, Commodities, and Private Equity, as indicated below.

VPIC Asset Allocation (June 30, 2016)

Asset Class	Assets Under Management	
	(%)	(\$Millions)
Total Plan	100.0%	\$3,743.2
Equities	40.0%	\$1,507.7
Fixed Income	32.0%	\$1,194.4
Absolute Return	17.0%	\$647.8
Alternatives	11.0%	\$393.2
Real Estate	6.4%	\$239.9
Commodities	2.8%	\$104.4
Private Equity	1.3%	\$48.9

A reference portfolio for VPIC's Composite portfolio, as presented in NEPC's 2Q2016 Performance Report for VPIC, is 60% MSCI All Country World Index ("MSCI ACWI"), and 40% Barclay's Global Aggregate. To analyze manager estimates of divestment impacts based on consistent definitions of the set of securities to be divested, this analysis relies on an MSCI ACWI IMI ex-fossil fuel list of fossil fuel companies, and the MSCI ACWI IMI ex-thermal coal list of thermal coal companies.

The data analyzed in this report differs from that employed by staff in its 2015 analysis of the impact of divestment from fossil fuels and from coal. Staff's report identifies VPIC holdings by the Global Industrial Classification Standard ("GICS") codes. The GICS codes included in the VPIC study were energy (ex-Coal), Coal, and Utilities. Today's report concentrates on a narrower set of holdings, as outlined above. In particular, this study identifies fossil fuel holdings as only those companies that hold fossil fuel reserves, rather than the full GICS energy sector; we focus on thermal coal holdings, rather than the full GICS coal sector. Thermal coal is the coal used to produce energy, and generates high CO₂ emission, as compared to metallurgical coal, which is used primarily in the production of steel, and generates relatively little carbon emissions. The thermal coal list from MSCI is the list adopted by California pension fund CalSTRS in its restriction on domestic U.S. thermal coal companies from the CalSTRS portfolio. Third, we identify utilities as users of fossil fuels, rather than suppliers, and include utilities as major contributors to carbon emissions, but exclude them from this analysis of divestment, focusing on suppliers of fossil fuels. The narrower definitions in this report result in smaller estimates of VPIC total exposure to fossil fuels and coal than staff reports. In our opinion, these studies are consistent with each other.

We note a few particulars that result in differences in the number of fossil fuel companies excluded from the MSCI ACWI compared to the MSCI ACWI IMI related list that was shared with VPIC managers. First, the MSCI ACWI index is composed of large/mid cap stocks and had 2,468 constituents. The ACWI IMI list includes large/mid/small cap and had 8,616 constituents (as of Nov. 30). With the more comprehensive list, we were able to query VPIC managers that may have held small cap names in their portfolios.

Second, the list of fossil fuel companies sent to VPIC managers, and those that are excluded from the MSCI ACWI IMI in the MSCI ACWI ex-Fossil Fuels Index can differ due to the type of fossil fuel reserves. The MSCI ACWI IMI ex-Fossil Fuels Index removes companies that have *proven fossil fuel reserves used*

for energy purposes. There are companies that have reserves but don't use them for energy. This broader list, based on all proven fossil fuel reserves, was sent to VPIC managers.

Both MSCI ACWI IMI fossil fuel and thermal coal divestment lists relate to investable equity benchmarks. MSCI does not publish an index that just excludes ExxonMobil. No comparable fossil fuel divestment lists of securities exist for the Barclay's Global Aggregate. MSCI provided PCA with the relevant equity and bond security identifiers for all of the companies included in its fossil fuel lists, so that we could request comparable information from VPIC's equity and fixed income managers, and from any absolute return managers that invest in company-level securities. The lists were distributed to all VPIC managers, for the sole purpose of preparing materials for this report.

The divestment analysis in this report is constrained to company-level securities of publicly traded securities. Thus, MSCI fossil fuel lists were not applicable to VPIC's Commodities asset class, which is invested through commodities futures. VPIC's Real Estate asset class holds no fossil fuel securities. VPIC's private equity asset class holds none of the publicly traded companies on the fossil fuel divestment lists used here. However, VPIC's private equity manager, Harbourvest, reviewed all eight of its funds in which VPIC is invested, and provided information on the market value of any private equity securities that might be deemed fossil fuels. We incorporate Harbourvest's estimates into our overall analysis of VPIC's exposure to fossil fuels.

VPIC Exposure to Fossil Fuels

To measure the VPIC exposure to ExxonMobil ("XOM", or "Exxon"), Thermal Coal ("ThC") and Fossil Fuel ("FF") holdings, we used the securities in the MSCI ACWI IMI Index of companies that held proven reserves of fossil fuels. All information is as of June 30, 2016 and provided by each VPIC manager. In total, VPIC held 3.6% (\$134 million) of its \$3.74 billion in assets under management ("AUM") in fossil fuel securities, 0.6% (\$24 million) in thermal coal securities, and 0.3% (\$11 million) in Exxon securities.

VPIC Total Plan Exposure to XOM, Thermal Coal and Fossil Fuel Holdings
(June 30, 2016)

	VPIC Assets Under Management							
	Total Plan		XOM		ThC		FF	
	\$Millions	% of Total Plan	\$Millions	% of Total Plan	\$Millions	% of Total Plan	\$Millions	% of Total Plan
Assets Under Management	\$ 3,743	100%	\$11	0.3%	\$24	0.6%	\$134	3.6%

As shown below, equities comprise the vast majority of VPIC's fossil fuel, thermal coal, and Exxon investments. Equities accounted for 79% of VPIC's total fossil fuel investments. In both thermal coal and Exxon, 92% of VPIC's investments were in the Equity asset class. Commingled funds made up the bulk of these investments. Equities in commingled funds garnered 50% of the total FF investments, 71% of the thermal coal exposure and 89% of VPIC's investments in Exxon.

VPIC Asset Class Exposure to XOM, Thermal Coal and Fossil Fuel Holdings
(June 30, 2016)

VPIC Assets Under Management								
	Total Plan		XOM		ThC		FF	
	\$Millions	% of Total Plan	\$Millions	% of Total Plan	\$Millions	% of Total Plan	\$Millions	% of Total Plan
Total Plan	\$3,743	100%	\$11	0.3%	\$24	0.6%	\$134	3.6%
VPIC Assets Under Management								
	\$Millions	% of Total Plan	\$Millions	% of Total XOM	\$Millions	% of Total ThC	\$Millions	% of Total FF
Total Plan	\$3,743	100%	\$10.9	0.3%	\$23.9	0.6%	\$134.0	3.6%
Asset Class								
Equities	\$1,508	40%	\$10.0	92%	\$21.9	92%	\$106.1	79%
Equities Commingled	\$878	23%	\$9.7	89%	\$17.0	71%	\$66.9	50%
Fixed Income Total	\$1,194	32%	\$0.9	8%	\$2.0	8%	\$19.3	14%
Fixed Income Commingled	\$694	19%	\$0.9	8%	\$0.4	2%	\$12.7	9%
Absolute Return	\$648	17%	\$0.0	0%	\$0.0	0%	\$7.8	6%
Alternatives	\$393	11%	\$0.0	0%	\$0.0	0%	\$0.7	1%

The fixed income asset class held no positions in Exxon or thermal coal companies, and accounted for 2% of VPIC's exposure to fossil fuel companies. Absolute return strategies held no positions in Exxon or thermal coal companies. The absolute return asset class held \$7.8 million, or 6% of VPIC's exposure to fossil fuel companies. Among the alternative investments – commodities, real estate and private equity, none of these asset classes held any of the fossil fuel companies under review. VPIC's private equity manager, Harbourvest, estimated that across all VPIC private equity funds, there were investments in private fossil fuel companies estimated at approximately \$0.7 million of the total \$48 million allocated to private equity within the \$393 million allocated to Alternatives. Private equity accounted for approximately 1% of VPIC fossil fuel exposure. The commodities strategies do not invest in companies, but in commodities futures. VPIC's Real Estate managers only invest in real estate, not fossil fuel companies.

Due to the concentration of VPIC's fossil fuel investments in equities, SSGA holds the largest share of VPIC's fossil fuel investments. SSGA manages five passive equity funds for VPIC, and one passive bond fund. Combined, SSGA manages approximately 25% of VPIC's total assets, and held 100% of VPIC's exposure to XOM, 36% of the exposure to thermal coal, and 44% of its exposure to fossil fuel securities.

VPIC's total percentage exposure to fossil fuels, thermal coal and Exxon were each less than that of an equity reference benchmark presented in VPIC performance reports – the MSCI ACWI. At 3.6%, VPIC's actual exposure to fossil fuels was significantly lower than the benchmark. VPIC fossil fuel exposure was approximately half (54%) the 6.6% exposure of the MSCI ACWI exposure. Similarly, VPIC's Exxon exposure was 0.3% of its total portfolio, compared to 1.1% of the MSCI ACWI. VPIC's 0.6% exposure to thermal coal companies was below the 0.8% of the MSCI ACWI 0.8%.

VPIC Manager Exposure to XOM, Thermal Coal and Fossil Fuel Holdings
(June 30, 2016)

VPIC Total Actual Exposure to Fossil Fuels (June 30, 2016)			
	Total number of ACWI IMI companies	VPIC Market Value (\$millions)	Percent of VPIC Market Value
VPIC Total		\$3,743.2	100%

VPIC Equity Reference Benchmark Exposure to Fossil Fuels (June 30, 2016)			
	Total number of companies	VPIC Market Value (\$millions)	Percent of VPIC Market Value
MSCI ACWI	2,481	\$2,433.0	100%

VPIC Equity Reference Fossil Fuel Divestment Scenarios			
	Number of companies removed from ACWI	Assets reallocated within ACWI (\$millions)	Percent of VPIC Market Value Reallocated
MSCI ACWI ex-Exxon	1	\$10.0	0.3%
MSCI ACWI ex-Thermal Coal		\$ 22.2	0.6%
MSCI ACWI ex-Fossil Fuels		\$ 134.0	3.6%

Source: MSCI and VPIC managers.

VPIC passive equity funds, consistent with their mandates, hold the greatest number of fossil fuel and thermal coal companies (Appendix 5). XOM, a U.S. large cap security, was held by the two VPIC large cap mandated passive accounts. VPIC had no assets allocated to large cap U.S. active managers, a highly efficient market. Thus, no active equity managers held Exxon securities.

The VPIC S&P500 index account held the largest dollar amount of fossil fuel investments. The SSGA MSCI ACWI ex-US passive account held positions in 147 fossil fuel companies, the highest number of fossil fuel companies. The two SSGA S&P500 accounts held the second highest number of fossil fuel companies - 27 in each portfolio.

VPIC active managers held modest to zero fossil fuel and thermal coal positions. No active equity manager held over 12 fossil fuel companies or over four thermal coal companies. Commingled Emerging Market active manager, Aberdeen, held the largest assets in fossil fuels among active equity managers, with \$24.3 million aggregate invested in six fossil fuel holdings (0.65% of VPIC total portfolio AUM), and \$9.8 million in three thermal coal companies. Among the active fixed income managers, Guggenheim high yield held the most (eight) fossil fuel companies with combined \$4.4 million in fossil fuel assets.

Potential Impacts of Divestment

The information presented below on the potential financial impacts of divestment seeks to incorporate each individual VPIC manager's assessment of these impacts. This approach allowed us to analyze estimates of a hypothetical impact on historic returns had VPIC mandated divestment, and estimate costs based on each manager's detailed information on their mandate and strategy for VPIC. We confine our financial estimates to the impacts reported by VPIC's managers. Thus, this report excludes estimates of potential returns foregone due to the future value of costs or return losses that cannot be reinvested.

Financial Risk and Returns

By definition, divestment reduces diversification and thus increases risk. Divestment of a broad set of securities typically introduces a greater reduction in diversification. Among the three divestment tracks, fossil fuels carry the greatest diversification risk, followed by thermal coal, then ExxonMobil. Because of the minimal exposure to thermal coal and ExxonMobil in the VPIC portfolio, in our opinion, the impact of increased diversification risk of either of divestment strategy is not material.

Most of the information we received from the VPIC managers on risk and returns that we found comparable enough to report, concentrated on each manager's historical actual return results compared to the hypothetical results had they excluded fossil fuels, thermal coal, or ExxonMobil from their VPIC investment portfolios.

In our opinion, going forward, rates of return differences between VPIC's actual portfolio and its hypothetical portfolios under divestment cannot be estimated. Future returns and the timing of different returns cannot be projected based on historic returns, either for the fossil fuel industry, or for individual companies, such as ExxonMobil. In our opinion, carbon prices in particular are heavily influenced by government policies. Without consistent international policy frameworks that support a transition to a low carbon economy, we will face continued uncertainty in fossil fuel markets generally. Within that, thermal coal most likely faces the most immediate risks from a global transition to a low carbon economy.

PCA analyzed VPIC managers' hypothetical historic rates of returns for trailing one-year and five-year under the three divestment scenarios. The results show that under divestment VPIC managers would have had mixed results compared to their actual historic performance for VPIC – some marginally better and some marginally worse rates of return than their actual returns.

The VPIC manager managers provided estimates of the impact on returns under the three different divestment scenarios for the trailing one year and five years ending June 30, 2016 (Appendix 6). The equity managers each had a five-year track record for VPIC. Few managers had 10-year or longer term track records with VPIC for the current strategies. The fixed income, absolute return, and alternatives managers often had shorter VPIC track records.

Because each manager determined their hypothetical return estimates under divestment based on assumptions that they felt made the most sense for the fund/s they manage for VPIC, an aggregate total VPIC portfolio return estimate is not available. To provide some VPIC-wide portfolio estimates of divestment returns, we used the VPIC reference portfolio for its overall equity exposure from all asset classes – MSCI ACWI. As shown below, trailing one year returns ending June 30, 2016 for the MSCI ACWI were -3.7%. The MSCI ACWI ex-thermal coal and ex-fossil fuel indexes generated marginally better returns than the underlying benchmark during this period.

MSCI ACWI Trailing Returns Compared to MSCI ACWI ex-Thermal Coal and ex-Fossil Fuel Indexes

Asset Class	Account	Assets Under Mgt	Trailing Returns								
			1-Year			5-Year					
		(%)	(Millions)	ACWI	x-XOM	x-ThC	x-FF	ACWI	x-XOM	x-ThC	x-FF
Total Plan		100.0%	\$3,743.2								
MSCI ACWI (65% of VPIC Reference Portfolio)				-3.7	-	-3.5	-3.4	5.4	-	5.7	8.0

Source; MSCI

For the five-year period ending June 30, 2016, the ex-thermal coal and ex-fossil fuel indexes show better returns than the underlying benchmark, with the ex-fossil fuel outperforming by over 2.5 percentage points during this period which was marked by a dramatic drop in oil prices.

The table below identifies the number of VPIC managers that estimated under divestment that they would have generated trailing rates of return below the actual rate of return they generated for VPIC. For the trailing one-year period, both passive managers holding XOM estimate that the returns had they excluded XOM would have been below the actual rates of return for VPIC. Two of the three managers holding thermal coal, and four of the 10 equity managers that held fossil fuels, estimate their returns would have been reduced had they excluded the thermal coal companies they held during that period.

Number of Managers with Trailing x-XOM, x-ThC or x-FF returns below actual						
	1 Year			5-Year		
	x-XOM	x-ThC	x-FF	x-XOM	x-ThC	x-FF
Equities						
Total Number of funds	10	10	10	10	10	10
Number of funds holding some FF securities	2	6	10	2	6	10
Number of funds with x-FF below actual return	2	4	4	0	2	3
Fixed						
Total Number of funds	9	9	9	5	5	5
Number of funds holding some FF securities	0	3	5	0	1	2
Number of funds with x-FF below actual return	0	2	2	0	1	0
Absolute Return						
Total Number of funds	4	4	4	4	4	4
Number of funds holding some FF securities	0	1	1	0	1	1
Number of funds with x-FF below actual return	0	0	1	0	0	1

The trailing five-year estimates by VPIC managers show that during this trailing period, a minority of managers would have hypothetically generated returns under these divestment scenarios below their actual returns.

We note that the estimates of fixed income securities historic returns can be more challenging than that for equities because bonds have specific maturity dates and issue dates. We confirm that VPIC's passive core bond manager, SSGA, which held fossil fuel securities historically during the trailing five-year period, conducted the additional analysis to identify corporate bonds by the fossil fuel companies identified for this report that may have expired before June 30, 2016, but that were part of the VPIC portfolio during the trailing 1-year or 5-year period.

In PCA's opinion, the hypothetical return estimates based on historic divestment scenarios cannot be used to project future returns. Overall market dynamics can shift the performance of fossil fuel stocks compared to the broader economic index and would affect all managers, passive and active. Potential performance going forward of active managers, without fossil fuel restrictions, and with fossil fuel security restrictions by VPIC will also be affected by how their security selection without restrictions will compare to a restricted portfolio.

Costs

Management Fees from Portfolio Restructuring

Based on the structure of the VPIC portfolio, the largest measurable explicit costs of divestment for the VPIC portfolio are expected to be ongoing increased management fees. Management fees would increase under any of these divestment scenarios because VPIC commingled funds held the bulk of VPIC's fossil fuel. VPIC cannot divest from individual securities in commingled funds. VPIC's commingled funds would have to be closed, and the assets reallocated into materially higher-cost SMA funds. The

ongoing higher fees would be proportionally higher for divestment scenarios with the lowest amount of assets to be divested because the fee changes would be the same, whether VPIC restructured to divest just from ExxonMobil, or to divest from all fossil fuels.

VPIC held fossil fuel securities in a total of nine commingled funds that held public securities. The private equity portfolio also held fossil fuel assets. Among the nine commingled funds with publicly held securities, manager responses indicate that three of the funds would be cost prohibitive to move to an SMA structure, due to the relatively small AUM in each fund (Appendix 7). These commingled funds were the SSGA S&P Mid Cap, SSGA MSCI ACWI ex-US, and SSGA Barclays Aggregate. The managers of five other commingled funds indicate that fees would be meaningfully increased under a SMA structure. In addition to higher management fees, VPIC would have to pay its custodian to open and maintain custody of any securities held in an SMA that, in comingled funds, are part of the manager fees. Not all VPIC managers offered estimates of fee changes for this report.

As an example, VPIC's largest exposure to fossil fuels in a single account was \$27.4 million (20% of VPIC's total fossil fuel exposure) held in the SSGA S&P500 comingled passively managed account. In total, this account held \$453 million VPIC assets on June 30, 2016. SSGA's preliminary fee estimates indicate that, should VPIC restructure this comingled account into an SMA, the annual fee increase per annum would be approximately \$65,000, added to VPIC's current annual fee of \$137,500 per year. Over 30 years, divestment from VPIC's largest fossil fuel holding would result in \$1.95 million net additional fees that would be costs rather than invested.

VPIC's largest exposure to thermal coal in a single account was \$9.8 million (44% of total thermal coal exposure) was found in Aberdeen's Emerging Market Equity comingled fund. Aberdeen managed \$247 million VPIC assets in this account. Aberdeen's preliminary fee estimates indicate that, should VPIC restructure this comingled account into an SMA, the annual fee increase per annum would be approximately \$132,500, added to VPIC's current annual fee of \$1,867,000 per year. Over 30 years, divestment from VPIC's largest thermal coal holding would result in \$3.98 million net additional fees that would be costs rather than invested. These management fees do not include the additional ongoing cost to open and maintain a separate account at VPIC's custodian to house these emerging market securities. Emerging market custodial fees are meaningfully higher than those for large developed markets.

One comingled fund, (GAM fixed income unconstrained portfolio), suggested that the cost would be minimal to move VPIC to a different class without fossil fuels. GAM, which managed 3.5% of VPIC assets, held no XOM, and such a minimal exposure to thermal coal and fossil fuels that they responded that the exposure would be de minimis. VPIC's SMA managers reported that fees would remain largely unchanged.

VPIC's private equity manager, Harbourvest, indicated that fossil fuel divestment would require selling all holdings on the secondary market, likely at a significant discount to Net Asset Value (NAV). To reinvest those assets without fossil fuel exposure, Harbourvest suggested that VPIC would have to move their assets to a co-investment fund with opt-out provisions to opt out of any fossil fuel related securities.

Transaction Costs

For this report, we identify transaction costs strictly as the costs to sell (divest) securities that were in the VPIC portfolio. This definition differs from the broader use of transaction costs in the VPIC staff divestment report. The VPIC report includes direct security transaction costs and the portfolio restructuring costs discussed above in transaction costs. Transaction costs as defined here are not relevant to VPIC's comingled fund managers, where the vast majority of VPIC's fossil fuel positions were held because they cannot divest individual securities.

VPIC could divest from its SMAs, so transaction costs for selling these securities are relevant to VPIC's SMAs. VPIC SMA managers estimated the transaction costs to divest. Combined together for all VPIC SMA managers, the transaction costs for SMA divestment were estimated at, \$185,422 for fossil fuels, \$35,914 for thermal coal, and \$68 for ExxonMobil divestment (Appendix 8). In our opinion, these small numbers are consistent with the small exposure to fossil fuels in VPIC SMAs and the market dynamics for the fossil fuel companies in the MSCI ACWI. These securities IMI trade in highly liquid markets.

We note that estimating transaction costs for corporate bonds is more difficult than estimating these costs for equities. Bonds trade based on the bid-ask spread at any given moment, thus, depending on when the manager assumes the divestment would occur, the estimate can vary. In total, we find that SMA manager estimates of transaction costs to divest from VPIC fossil fuels, thermal coal or Exxon would be de minimis.

In addition to restructuring and transaction costs, VPIC monitoring costs would increase under divestment scenarios to insure compliance throughout the portfolio of VPIC manager's compliance with VPIC-specific divestment lists. Opportunity costs are expected to vary depending on the manager's target market, and timing.

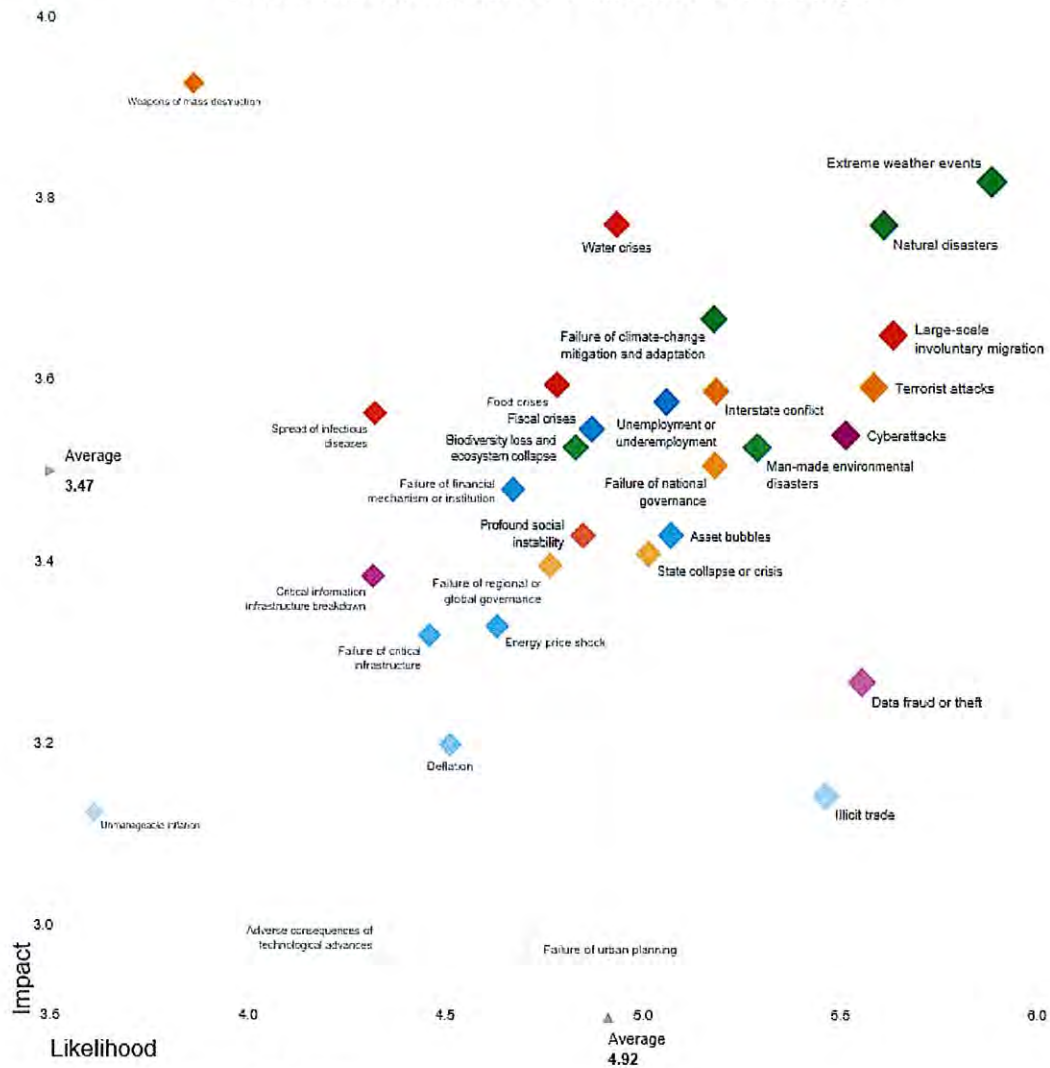
Climate Risks

The above analysis focused on divestment impacts, including costs, returns and diversification risk. In this section, we provide background on the climate risks that motivate portfolio management efforts to assess, monitor and manage these risks, including fossil fuel divestment. We then consider the potential impact of divestment in managing these risks.

There is growing evidence that significant risks face the global economy and investors from climate change. As reported in "Assessing the Global Climate in 2016" by the NOAA National Centers for Environmental Information ("NCEI"): "the globally averaged temperature over land and ocean surfaces for 2016 was the highest since record keeping began in 1880,"... "surpassing the previous record set the previous year".

In January, 2017, ahead of its annual meeting of global political and business leaders in Davos, Switzerland, the World Economic Forum ("WEF") reported climate change is growing in prominence as "humanity's biggest threat". The WEF surveyed 750 experts on what the most likely and impactful risks facing humanity are in 2017. Extreme weather events ranked as the highest likelihood, second only to weapons of mass destruction in severity of impact. Three of the 2017 top five risks in terms of impact were environmental related: extreme weather events, water crises, and failure of climate-change mitigation and adaptation.

World Economic Forum: 2017 Global Risks Landscape



Source: World Economic Forum

Data reported from the United States shows the recorded physical effects of weather and climate disasters are increasing. The NCEI reported in "Assessing the Global Climate in 2016":

"In 2016, there were 15 weather and climate disaster events with losses exceeding \$1 billion each across the United States. These events included a drought event, 4 flooding events, 8 severe storm events, a tropical cyclone event, and a wildfire event...The U.S. 4 billion-dollar inland flood events during 2016, doubled the previous record, as no more than 2 inland flood events have occurred in a year since 1980... Overall, these events resulted in the deaths of 138 people and had significant economic effects on the areas impacted. The 1980–2016 annual average is 5.5 events (CPI-adjusted); the annual average for the most recent five years (2012–2016) is 10.6 events (CPI-adjusted)."

U.S. 2016 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the 15 billion-dollar weather and climate disasters that have impacted the United States during 2016.

Source: National Centers for Environmental Information

The information above illustrates that there appears to be a growing consensus, and increasing factual information indicating that global climate-related risks are increasing. In a paper published in *Nature* in 2015, Marshall Burke, Solomon Hsiang, and Edward Miguel, economists based at Stanford and the University of California Berkeley, presented a new analysis that found that:

business as usual emissions throughout the 21st century will decrease per capita GDP by 23% below what it would otherwise be, with the possibility of a much larger impact. Secondly, they conclude that countries with an average yearly temperature greater than 55°F will see decreased economic growth as temperatures rise. For cooler countries, warming will be an economic boon. This non-linear response creates a massive redistribution of future growth, away from hot regions and toward cool regions, with countries like those in Scandinavia likely experiencing substantial benefits, while those in hot regions through Asia, Africa, and the Americas, as well as island nations, facing potentially huge losses.

Research from different perspectives illustrates that climate change may impact many industries, but in different ways. For example, SASB's October, 2016 Climate Risk Technical Bulletin finds that climate risk is ubiquitous. SASB identified material financial impacts from climate change for companies in 72 out of 79 industries, representing \$27.5 trillion, or 93% of the U.S. equity market. In the forward to the SASB bulletin, Henry M. Paulson, 74th United States Secretary of the Treasury, Co-Chair, Risky Business Project, and Robert E. Rubin, 70th United States Secretary of the Treasury, Member, Risky Business Project highlight that: "As this new report from SASB makes clear, no matter what actions we take tomorrow, there are real, material climate risks that have already been "baked in" to the economy." Paulson and Rubin cite three examples out of the many areas SASB found to be vulnerable to climate risk.

Agricultural companies: Extreme weather events, heat, and humidity can materially affect the industry's production efficiency and supply chain.

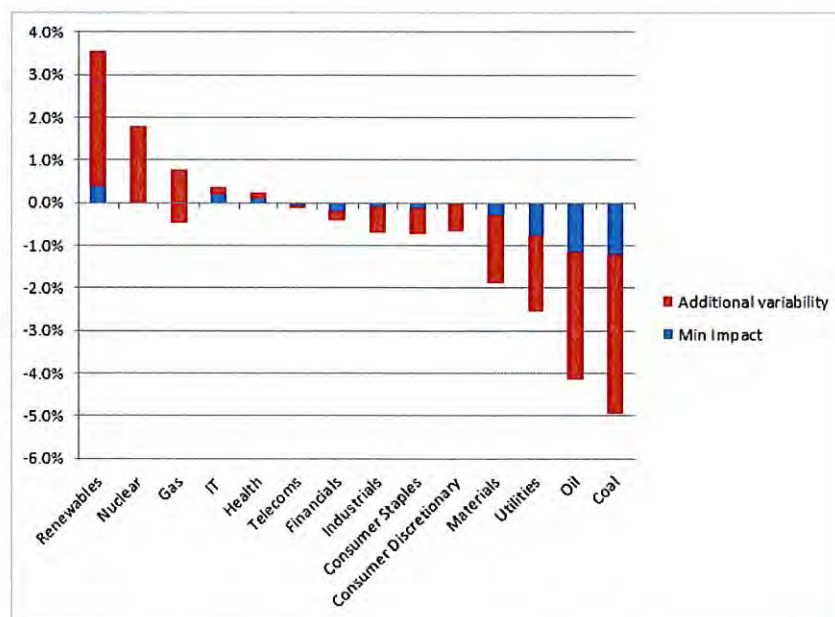
Commercial and residential real estate: Sea level rise and increased storms are expected to have significant consequences on coastal property and infrastructure.

Manufacturing industry: Dangerous levels of extreme heat and rising seas may cause large disruptions in supply chain operations and labor productivity--especially as many manufacturing plants are located in high-risk areas such as the Southeast.

The non-renewable energy sector can be materially affected by a global shift toward renewables. Government energy policies can exert a material influence on energy markets. Governments are adopting different energy policy approaches to potential climate risks. Some governments are actively moving to support a transition to a low carbon economy. For example, France passed a law mandating that investors and banks report on the carbon risks and climate friendliness of their portfolios, with disclosures separated between carbon risk and friendliness objectives. In December 2016, France inaugurated the world's first 'solar highway', a road paved with solar panels that are expected to provide enough energy to power the street lights of the small Normandy town of Tourouvre. According to Bloomberg, Colas SA, a subsidiary of France's construction firm, Bouygues Group, has plans to test the technology across four continents at 100 sites in 2017. Saudi Arabia, one of the world's biggest oil producers is seeking up to USD 50 billion of investment in solar and wind energy. U.S. policy may support fossil fuels longer than other countries. In that event, U.S. fossil fuel companies may fare better, and U.S. low carbon technologies may fare worse in the near to medium term than their respective non-U.S. counterparts from countries that provide a policy framework aimed at supporting a transition to a low carbon economy. Over the long term, if the global markets transition to low carbon energy, U.S. companies may be less competitive than counterparts from countries whose governments developed clear energy transition policies.

Mercer finds in its 2015 report "Investing in a Time of Climate Change", that:

climate risk impacts may vary considerably among industries...The figure below shows the potential climate impact on median annual returns for industry sectors over the next 35 years... The energy sector is broken into its sub-sectors, as one of the most negatively impacted industries in Mercer estimates.



Source: Mercer

Results such as Mercer's can be used as reinforcement of an argument for sector-wide fossil fuel divestment based on the potential for stranded fossil fuel assets. UBS's 2016 paper, "Stranded Assets:

"What lies beneath" provides an analytical framework for thinking about the stranded assets debate, based on a study led by Dr. Dinah Koehler and Bruno Bertocci of the UBS Sustainable Investors team. Using scenario analysis, they isolate how publicly traded oil and gas companies may be affected by a steep drop in future consumption of oil and gas.

The author's key conclusions include:

"Any analysis of the investment implications of the stranded assets hypothesis must take market pricing and dynamics into account; Not all asset value associated with reserves are automatically lost. It depends on whether the price of oil justifies the effort to extract and produce a barrel of oil; at any moment in time a certain amount of known oil and gas reserves cannot be economically produced; even under the most extreme scenarios of reduced oil/gas consumption, many oil/gas companies in the MSCI World Index retain value in the next 10-20 years; There are some oil/gas companies that are not an attractive investment today, and continue to lag behind their peers at various future scenarios; If divestment is chosen as an investment strategy, it should be targeted at those oil/gas companies where the investment is unlikely to be recovered or exceeded in the next 10-20 years."

In our opinion, climate risks to investments, including potentially stranded assets, have become a potentially material investment issue. We believe divestment of fossil fuels, based on the definition employed here, could directly address the risk of potentially stranded assets, primarily in public equities. Divestment of thermal coal could directly address potential stranded asset risk within the sub-sector of fossil fuels that is perhaps at highest risk of becoming stranded. Thermal coal is viewed as a type of fossil fuel that is at highest risk of becoming stranded due to its relatively high carbon emissions. Divestment from Exxon would not significantly reduce VPIC's total exposure to stranded assets.

We believe divestment of all fossil fuels is a blunt tool to apply across a large industry that exhibits varied outlooks for each type of fossil fuel. As one VPIC manager stated "with regard to the stranded asset thesis, Mondrian does not believe the risk of stranded assets applies equally across the fuels as the world must consider the substitutability of each fuel, and the cost to implement substitution. Mondrian believes coal is most at risk, given its higher carbon intensity and the ease of substituting its use in generating electricity. Oil, while next in line in terms of carbon intensity, is primarily used in transportation, and despite multi-year investments in alternatives, the world still has not found an economically viable substitute. Finally, gas, with its lower carbon intensity, would appear to have the lowest risk of stranded reserves."

Divesting from a single fossil fuel company, in this case ExxonMobil, in our opinion, raises additional company-level investment questions. In our opinion, it is not already determined which energy companies will become obsolete, and which will manage to transition to a new energy economy over time. It is conceivable that a dominant fossil fuel company of the 20th century transitions to become a powerful force in a 21st century (or beyond) low carbon energy global economy.

For example, in January 2017, oil and gas majors, Royal Dutch Shell and Total SA announced, along with Toyota Motor Corp. and four of its biggest car-making peers, plans to invest a combined \$10.7 billion in hydrogen-related products within five years. In all, 13 energy transport and industrial companies are forming a hydrogen council to consult with policy makers and highlight its benefits to the public as the world seeks to switch from dirtier energy sources, according to a joint statement issued from Davos, Switzerland. The wager demonstrates that batteries aren't the only way to reduce pollution from cars, homes and utilities that are contributing to climate change.

On another front, Royal Dutch Shell, SABIC and Dow/DuPont have made strategic moves to change how petroleum is used, from mostly combustion, which generates carbon emissions, to mostly materials (polymers). Shell's chief oil and gas scientist, Joe Powell, told colleagues at Massachusetts Institute of

Technology that there is no reason the industry could not completely flip the ratio, with 80 percent of oil and gas going to material feedstocks. Such a move could, on the one hand, make use of a stranded resource (oil and gas), and on the other fill a resource vacuum (low carbon building materials). Buildings account for about 30 percent of emissions, about half of which comes from the "embodied" carbon emissions of the building itself -the energy it takes to make the building materials, transport them and build the building. Portland cement alone accounts for five percent of all carbon emissions worldwide. Steel and aluminum require intense industrial heat to manufacture. Lumber, in general, needs to stay in the ground as trees to sequester as much atmospheric carbon as possible. With the world in the midst of an unprecedented period of urbanization, and three billion people set to enter the global middle class in the coming decades, emissions from construction are at an all-time high.

In our opinion, divestment from a single fossil fuel company does little to reduce VPIC's stranded asset risk overall, and raises company selection risks in a period of enormous energy transition. In our opinion, because of the global dependence on fossil fuels, divestment of all fossil fuels could expose VPIC to technological shift risks if divestment is not phased in over a long, for example, 30-year period.

Phasing in Various Fossil Fuel Divestment Strategies

A short-term divestment phase-in would likely incur essentially the same magnitude of costs as immediate divestment, and may be at a poor time in the energy market. In our opinion, divestment of fossil fuels over a business cycle time frame would not address the key long-term divestment risk of global dependence on fossil fuel energy. A long term, for example, 30-year divestment, geared toward implementation over a technological change cycle that was taken in incremental steps throughout the portfolio, with regular review and reassessment, could smooth out divestment impacts. The increases in management fees required to dismantle VPIC's inexpensive commingled funds and restructure those assets into more expensive SMA's would still be borne by VPIC, just spread out over time. However, a long-term strategy might increase VPIC's asset allocation analyses costs and staff and Board review time.

Financial analysts vary on near-term prospects for fossil fuel companies, as they do on other market investments and the market as a whole. For example, VPIC International Equity manager Mondrian responded to this survey with the overview perspective that "Our analysis indicates that fossil fuel companies, despite low long term growth, are undervalued. We believe the portfolio would lose exposure to the potential real returns offered by these companies, should they be divested". Macquarie Research (October 13, 2016) held a different opinion: "The [integrated oil] sector still looks expensive versus global markets, with forward PERS [price earnings ratios] at historical highs relative to normal levels despite the recent sharp fall (the integrations traditionally trade at 20-30% discounts to the key indices)."

Long term outlooks for the carbon energy market also range widely. The U.S. Energy Information Administration, International Energy Outlook 2016 estimates fossil fuels to have accounted for 84% of world energy consumption in 2012, nuclear 4%, and other, which includes renewables, at 12%. Overall world energy consumption is projected to grow at an annual average rate of 1.4% through 2040. By 2040, fossil fuels, combined (liquids, natural gas and coal) are projected to account for 78% of total world energy consumption.

World Energy Consumption			
	History	Projections	
			Average Annual Percent Change,
Fuel	2012	2040	2012-40
Liquids	33%	30%	1.1
Natural Gas	23%	26%	1.9
Coal	28%	22%	0.6
Nuclear	4%	6%	2.3
Other (renew)	12%	16%	2.6
Total	100%	100%	1.4

Source: U.S. Energy Information Administration

Optimistic predictions, such as in the International Energy Association's ("IEA") 30-year forecasts expect continued strong global demand for oil and gas, based on increasing population, and expected inability of the global economy to meet those demands with renewables and energy efficiency.

Because PCA's mandate for this research involved discussion of potential divestment from a single company – ExxonMobil, for this report, we asked ExxonMobil and three competing integrated oil and gas majors (Chevron, Royal Dutch Shell and BP) to provide us with answers to specific questions regarding the potentially material risks regarding environmental concerns. Specifically, we asked each firm to provide data according to SASB's accounting standards and metrics for this industry sector. We received no response from Chevron, Shell or BP. Exxon's responses to our questionnaire for this report echo the long-term optimistic assumptions of the IEA (Appendix 9).

At the other extreme, as reported by Responsible Investor, Lou Allstadt, former Executive Vice President at Mobil Oil involved in the ExxonMobil merger in 1999, and current town trustee of Cooperstown, N.Y. which divested its de minimis exposure to fossil fuels, questions the survival of the oil majors "I don't think they are going to survive, I personally divested from ExxonMobil three years ago and reinvested in renewables. Allstadt also referred more broadly to the weak financial conditions that fossil fuels companies are facing. He stated they are being "squeezed from all sides", low prices which force them to increase borrowing, reduce share buybacks, dividends and investments in new projects, OPEC's ability to destroy their profitability by driving down oil prices through output fluctuation, or increasing government regulation and competition from cleaner sources of energy, among other factors.

Some observers feel that the reason the 2015 Paris Agreement succeeded was because the technological advances and potential competitiveness of renewables make them economically viable in a way they were not even five years prior. From this latter perspective, Carbon Tracker Executive Director Mark Campanale argues that from an engagement perspective, shareholders and regulators should put fossil fuel companies into an 'orderly wind down' while increasing investment in renewables.

More generally, the Risky Business November 2016 report, "From Risk to Return: Investing in a Clean Energy Economy" finds that "seriously addressing climate change requires reducing greenhouse gas emissions by at least 80 percent by 2050 in the U.S. and across all major economies". The report finds that this goal is "technically and economically achievable using commercial or near-commercial technology". The report is a product of the Risky Business Project, co-chaired by financial leaders involved in efforts to reduce climate change risks - Michael Bloomberg, Henry M. Paulson, Jr. and Thomas Steyer. The 2014 inaugural report "Risky Business: The Economic Risks of Climate Change in the United States" found that the economic risks from unmitigated climate change to American business and long-term investors are large and unacceptable. This second report turns to the question: how to respond to those risks. Risky Business modeled four different potential approaches, without endorsing

any approach, including: 1) Rely heavily on renewable energy, 2) Significantly expand reliance on nuclear energy, 3) Include a substantial amount of fossil fuel power plants with carbon capture and storage, and 4) generate electricity from a relatively even mix of these three zero- and low-carbon resources. "Given an appropriate policy framework, we expect these investments to be made largely by the private sector and consumers, and to yield significant returns." The report argues that "the large investment needs of a transition to a clean energy economy are manageable, especially when compared to the costs that would be imposed by unmitigated climate change and continued fossil fuel dependence, and comparable to other recent investments, such as in unconventional oil and gas production, and in computers and software. Those investments have transformed the American economy, yielding huge returns to those businesses that led in the development of new technologies and products."

In our opinion, a long-term divestment strategy would likely bear less market risk than an immediate fossil fuel divestment strategy that cannot incorporate longer-term changes in technology and global policy.

Divestment within the Context of VPIC Governance Structure

Divestment of fossil fuels, thermal coal, or ExxonMobil should be considered in relation to the VPIC's governance structure, including its relation to VPIC's asset allocation, its equity investment strategy, and VPIC's approach to proxy voting and engagement.

VPIC Asset Allocation

As discussed above, divestment from fossil fuels, thermal coal, or ExxonMobil would require significant restructuring of the VPIC investment manager structure because of the dominant share of fossil fuel, thermal coal, and ExxonMobil exposure in commingled funds. To divest from fossil fuels, VPIC would likely have to conduct an asset allocation analysis that addressed how VPIC would restructure to accomplish divestment in its SSGA S&P Mid Cap 400 fund, its SSGA MSCI ACWI ex-U.S. fund, and its SSGA Barclays Aggregate Bond Index fund that each hold too few assets for VPIC to be able to transition to a SMA.

VPIC's overall investment strategy is designed to diversify among asset classes. As discussed above, we believe divestment of fossil fuels can be a tool primarily in public equities to remove exposure to potentially stranded fossil fuel assets. Divestment does not help VPIC manage other climate change material risks evident in other industries, or provide enhanced exposure to companies involved in energy efficiency and renewable energy. Divestment within VPIC's public equity asset class adds diversification risks if all fossil fuels are divested, and introduces technological shift risks if stocks are not divested over a long period. In our opinion, VPIC's limited exposure to thermal coal and to ExxonMobil would result in minimal diversification or technological changes risks from either of these divestment paths. Thermal coal and ExxonMobil divestment offer equally limited reduction in exposure to potentially stranded assets, compared to VPIC's overall investment portfolio.

In our opinion, divestment, with a proportional reallocation to non-fossil fuel companies increases investments in economic sectors:

- whose products and services generate demand for fossil fuel energy including utilities and transportation;
- that generate significant CO₂ emissions, such as construction;
- that finance fossil fuel development; and

- face material physical risks of climate change including agriculture, real estate and consumer goods.

Divestment does not overweight VPIC's exposure to companies potentially stimulating and benefitting from low-carbon and renewable energy solutions.

Divesting from fossil fuel suppliers, in our opinion, has limited direct impact on fossil fuel corporate policies. PCA's 2014 review of the impacts of divestment found that studies suggest that the measurable financial impact on the companies targeted for divestment has been largely minimal. A comprehensive review (Oxford, 2013) found that divestment campaigns' successes have not been through the direct impact on the company's financials, but through a larger 'stigmatization' impact which resulted in successful lobbying of governments for restrictive legislation, which in turn could have meaningful effects on the business practices of targeted companies/industries. This study does not compare engagement strategies with divestment strategies.

Divestment from fossil fuels in the publicly listed bond market can be expected to have the same types of benefits and constraints as in equities. Because of VPIC's minor fixed income exposure to fossil fuel, thermal coal, or ExxonMobil, divestment impacts would be more muted than in equities. One difference between equities and bonds is that because new bonds are regularly issued, while divestment doesn't increase green bond exposure, investments in new green bonds can directly help provide financing for green initiatives.

Real Estate holds no fossil fuels as defined in this report. Divestment from fossil fuels does nothing in the real estate market to address the real physical risks that have become of increasing concern with climate change. Divestment and restrictions on future fossil fuel investments in private equity markets could protect VPIC from any stranded asset risk in its private equity portfolio. Divestment does not increase investments in green privately held companies. Unlike public equity, investment in green companies could directly provide financing to green initiatives.

VPIC's commodities asset class exposes VPIC to fossil fuel commodity markets through commodity futures investments. Divestment based on the definitions of used here for fossil fuels and thermal coal, is not relevant because the VPIC commodities asset class gains exposure through commodities futures, not holdings of any individual securities that own fossil fuel reserves. Any divestment from VPIC's commodities asset class would necessitate eliminating this asset class from VPIC's portfolio. Such an action would conflict with VPIC's current asset allocation strategy.

VPIC's absolute return asset class exposure to stranded assets, and to broader climate change risks, cannot be easily assessed. These assets are invested in some cases through fund of funds, and often through derivatives rather than direct holdings of securities of individual companies. In our opinion, the estimates that result from this study provide little insight into the potential risks to VPIC's absolute return managers in the event of any significant disruptive climate change risk.

In our opinion, addressing potential climate change risks and opportunities in the VPIC portfolio is best accomplished through a bottom up analysis within each asset class.

VPIC Equity Investment Strategy

VPIC allocates its publicly held equity assets primarily through passive investments to gain overall market exposure. As of June 30, 2016, 53% of VPIC equities were passively managed (\$806.5 million). VPIC complements these investments with actively managed investments in discrete market segments where VPIC believes active management can increase its risk adjusted returns.

In our opinion, the risk of stranded assets is one of many potential long-term risks that VPIC must consider, including other climate risks in its passively managed equity funds, as discussed above. Today, VPIC's equities are managed against market-cap weighted indexes. These indexes do not explicitly account for potentially stranded asset risks. Market cap weighted indexes also include other biases. There exist a multitude of market wide benchmarks that seek to improve the overall risk adjusted return to investors over market-cap weighted indexes, including fundamental, equal-weighted, smart-beta, and a burgeoning plethora of ESG indexes. We believe other benchmarks may better balance potential stranded asset risk with other macro risks than can divestment.

Divestment constrains active managers in their mandate to find the best opportunities to invest. Thus divestment conflicts with the underlying reason VPIC pays active managers higher management fees than passive management. In the responses from VPIC equity managers, examples of this conflict with a divestment of fossil fuels were evident. For example, one manager, that held only a few fossil fuel stocks for limited periods during the trailing five-year period reports that, its 17-month overweight holding of one fossil fuel stock contributed 74 basis points to the VPIC portfolio, and its 22-month overweight holding of another fossil fuel stock contributed 46 basis points to the VPIC portfolio. In general, if VPIC active managers were prohibited from owning fossil fuels, rather than being allowed to selectively choose geographic, sector, and company weights, and buy/sell timing of each security, VPIC could not receive the full benefits of its active manager's selection expertise.

VPIC Monitoring, Proxy Voting and Engagement

VPIC monitors its investment active managers for exposure to climate change risks. VPIC acts as an active shareholder, and has developed robust governance efforts focused on climate change as part of its overall approach to governance. This includes development of VPIC's custom proxy voting guidelines which bring a strong and coherent approach to voting its proxies, co-filing shareholder proxy proposals, and corporate and public policy and regulatory engagement actions. Appendix 2 lists VPIC engagements in 2015 and 2016. These included actions at XOM and other oil majors, coal companies, and efforts to effect regulatory change around climate change risks and disclosure. VPIC's most recent activity regarding Exxon was in November 2016 when it co-filed with NY State an Exxon Mobil Resolution 2 degree reporting for the 2017 annual meeting.

In our opinion, divestment from fossil fuels would materially undermine VPIC corporate governance strategies. VPIC's actions to promote regulatory and policy changes regarding climate change risks could remain intact. However, divestment would negate VPIC's shareholder governance voting efforts in fossil fuel companies. In our opinion, VPIC and the Vermont Treasurer, supported by the VPIC staff, stand out as a leader in climate change proxy voting and engagement. Through such actions, VPIC has exerted influence beyond its size, in our opinion.

Market Options for Institutional Investors to Manage Climate Change Risks

Divestment as a strategy for exerting political influence to bring about social change has been influential in the modern economy back to the anti-apartheid campaigns that began in the 1970s. The anti-apartheid divestment campaigns, like today's fossil fuel divestment campaigns, began on university campuses, and influenced many endowments and foundations. U.S. public pensions plans today are subject to the same fiduciary obligations that they were during the anti-apartheid movement forty years ago. However, public pension plans have undergone major transformations, along with the U.S. economy. In the 1970s, Vermont pension plans, and most U.S. public pension plans were confined

to investing in high quality (not high yield) bonds, and were younger, growing plans. Today, Vermont and many U.S. public plans are mature plans that face many funding challenges. Like other plans, VPIC's asset allocation is now diversified to equities, globally, and across private investments, commodities, and absolute return strategies that didn't exist in the 1970s.

The institutional investment market and the organizations that exist to foster collaboration among like-minded institutional investors has evolved significantly since the well-known divestment movement surrounding South African Apartheid. In the 1970's, institutional investors, specifically U.S. public pension funds did not have the benefit of collaborative organizations to work together for common investment goals. Forty years ago, there was minimal coordinated effort by U.S. public pension funds on proxy voting or engagement with the companies in which they may have been invested. In our opinion, the organizational capacity of institutional investors has advanced materially since then. To mention a few examples, the U.S. Council of Institutional Investors was founded in 1985. In 2006, the Principles for Responsible Investment joined institutional investors globally. CERES was launched in 1989, with a mission to "mobilize investor and business leadership to build a thriving, sustainable global economy". Institutional investor organizations have grown surrounding accounting standards and reporting on ESG issues, including the Global Reporting Initiative. In the U.S., SASB incorporated in 2011 to develop and disseminate sustainability accounting standards.

Alongside these changes, financial markets developed multiple tools for institutional investors to address Environmental, Social and Governance ("ESG") concerns, including climate change risks and opportunities. Market forces continue to rapidly evolve the approaches available to address climate change risks. In our opinion, VPIC should consider divestment of fossil fuels, thermal coal, and Exxon within the context of the full set of options available. Each approach offers its own usefulness and limits, and each approach can reinforce other strategies to varying degrees. We consider the following approaches applied to climate change risks:

- divest
- monitor investment managers
- vote proxies
- engage with companies
- engage on regulatory issues
- invest in index funds or active managers

Peer Pension Plan Climate Change Survey Results

PCA surveyed VPIC peer U.S. public pension funds on climate change related investing strategies. We received twenty-six responses, representing a combined \$887 billion AUM. The respondents range in size from \$1.2 billion AUM to \$195 billion AUM as of June 30, 2016, including nine plans under \$5 billion AUM, 14 plans with between \$5-\$100 billion AUM, and three plans over \$100 billion AUM. The plan's dedicated investment staff range from 0 to 150. Fourteen respondents were state public employee plans.

Survey of VPIC Peers on Climate Change					
	VPIC	Under \$5B AUM	\$5-\$100B AUM	Over \$100B AUM	All Peer Plans
Number of Plans	1	9	14	3	26
Assets Under Management (\$Billions)	\$4	\$1.2B-\$4	\$8-\$68	\$179-\$195	\$1.2-\$195
Combined AUM (\$Billions)	\$4	\$18	\$315	\$554	\$887
Dedicated Investment Staff	2	0-4	Jan-52	59-150	0-150
	Number of Plans that responded 'Yes'				
Divested in relation to Climate Change Risk?	0	0	0	1	1
Exxon	0	0	0	0	0
Thermal Coal	0	0	0	1	1
Fossil Fuel	0	0	0	0	0
Stranded Assets	0	0	0	0	0
CO2 Emissions	0	0	0	0	0
Climate Risk	0	0	0	0	0
Measured Climate Change Risk and/or Opportunity of Total or Part of Portfolio?	0	1	0	2	3
Monitor Managers on Climate Change Risk and/or Opportunity of Total or Part of Portfolio?	1	1	1	2	4
Voted Proxies to Mitigate Climate Change Risk and/or increase Opportunity of Total or Part of Portfolio?	1	1	1	3	5
Engagement with individual companies on Climate Change Risk and/or Opportunities?	1	0	0	2	2
Action to make recommendations to regulators on Climate Change Risk and/or Opportunities?	1	1	0	2	3
Member of Institutional Investor organization/s that include a focus on climate change?	1	2	3	2	7
Adopted Climate Change Related Benchmark for Total or Part of Portfolio?	0	0	0	1	1
Invested in low carbon portfolio	0	0	0	2	2
Invested in Climate Change Opportunity	0	1	2	2	5

None of these pension plans have divested from Exxon individually, all fossil fuel companies, companies based on high stranded carbon reserve assets, high carbon emissions, or broader climate risk. One plan reported that under their Iran/Sudan policy they had a few fossil fuel related divestments. One plan with over \$100 billion in AUM reported divestment from U.S. thermal coal companies.

We found a greater number of plans pursue proxy voting and/or investments in green/climate change opportunities than divest from any definition of fossil fuels. Five plans report voting proxies to mitigate climate change risk (three plans larger than \$100 billion in AUM, one plan between \$5 billion and \$100

billion AUM, and one plan under \$5 billion AUM). Five plans reported investments in green/climate change opportunities within different asset classes that include public securities, private equity and infrastructure, while two plans over \$100 billion AUM have invested in a low carbon portfolio.

Seven of the 26 plans noted that they are members of institutional investor organizations that address climate risk related topics –including CERES/INCR, Council of Institutional Investors, Sustainable Accounting Standards Board ("SASB"), and UN Principles for Responsible Investing.

The September 2016 survey by the North Carolina Department of the State Treasurer entitled: "Long Term Stewardship: A pragmatic Approach for ESG Integration for Institutional Investment", included responses from 61 U.S. public pension plans ranging in size from less than \$5 billion to greater than \$100 billion. The survey concentrated on institutional approaches to ESG. The results were similar to those of this VPIC peer survey. Among the 61 public pension plans in the North Carolina study, 15% were found to be active on ESG factors, 26% were categorized as work in progress, and 59% were inactive. An investor was categorized as being "active" if it had an established ESG policy, incorporated ESG factors into either its investment or risk management process or had a systematic approach to corporate governance issues such as shareholder activism. One of the key observations based on the responses of the U.S. public pension plans touched on divestment, and reported similar results as this VPIC peer survey:

"For most of the active plans, engagement with companies on ESG issues is viewed as being more impactful than divestment. This viewpoint is supported by empirical studies and the pensions' direct experience. Impactful corporate engagement is both time and staff intensive. Consequently, smaller plans are interested in collaborating with larger ones on certain shareholder resolutions. Plans may also outsource this activity to external firms that provide corporate engagement services." (Long Term Stewardship, page 9).

Divestment

To supplement our survey on divestment of fossil fuels by U.S. public pension funds, we reviewed other sources of U.S. public pension fund divestments. The December 2016 Arabella Advisors report: "The Global Fossil Fuel Divestment and Clean Energy Movement" made headlines in December 2016 by stating that the value of assets represented by institutions and individuals committing to some sort of divestment from fossil fuel companies has reached \$5 trillion". The report states that "pension funds and insurance companies now represent the largest sectors committing to divestment, reflecting increased financial and fiduciary risks of holding fossil fuels in a world committed to stay below 2 degrees Celsius warming". PCA sought to identify which U.S. public pension plans were included in these numbers. We secured the list of U.S. pension plans from one of Arabella's partners who is credited with helping gather and analyze the data for the Arabella report – the Divest/Invest Network. The Divest/Invest organization identified seven U.S. public pension plans that have divested from some version of fossil fuel securities. We checked the information on each of the seven plans and found that only four of those seven plans have divested from any version of fossil fuels. For example, CalPERS, the largest plan among the seven, and the largest U.S. public pension plan, was included as having divested. To date, CalPERS has not divested from any fossil fuels, and has the issue under review. The largest U.S. public pension plan in the Divest/Invest list that has made any fossil fuel divestments is CalSTRS – a respondent to our survey.

The total market value of the fossil fuel divestments made by the four plans identified by Divest/Invest that have in fact made a fossil fuel divestment has been approximately \$24 million, or 0.013% of their combined total plan assets of \$193 billion. The plans include:

- 1) CalSTRS divested approximately \$1.5 million in U.S. thermal coal, or 0.0008% of its \$186 billion portfolio. CalSTRS is now analyzing whether non-US thermal coal divestment makes sense,

including looking at whether in some areas of developing countries, the only alternative to coal is even worse polluting wood burning fuels).

- 2) The District of Columbia divested roughly \$21 million from the "Carbon Underground Top 200", or 0.03% of its \$6.4 billion portfolio.
- 3) Providence, Rhode Island divested about \$1.5 million in direct investments, or 0.6% of its \$282 million portfolio, from the "Filthy 15" (mostly companies that own coal-burning power plants or coal mining companies).
- 4) The Village of Cooperstown, N.Y. reallocated approximately \$8,386, or 0.9% of their total \$900,000 AUM, when they moved their \$140,000 investment in an S&P500 index fund to the SPYX ETF, which drops 29 fossil fuel stocks from the S&P500.

We conclude that divestment from fossil fuels is a sparsely used strategy among U.S. public pension plans, including by those plans, large and small, that are active on potential climate change risks to their investment portfolios.

In our opinion, divestment as a strategy is most closely aligned with traditional socially responsible investing (which often rests on 'negative' screening out of particular social outcomes) to impact investing. Negative screening seeks to achieve a social impact, and can seek both market or below or above market performance. While all investors typically prefer a competitive return, not all are legally bound to seek such returns. For example, individuals may decide they prefer investing in stocks that meet their social criteria, even with the expectation that their portfolio may generate below market investment returns. U.S. endowments and foundations are not bound by the same fiduciary framework as U.S. public pension funds.

As a strategy, in our opinion, divestment undermines institutional investor's ability to exercise their right to proxy votes and engagement with individual companies. For institutional investors actively voting proxies and/or engaging corporations, divestment's lack of consistency with such efforts can be meaningful. In cases where it is determined that proxy voting and engagement strategies are not useful, divestment may not pose a conflict with other institutional investor efforts. Such a determination can only be made, in our opinion, on a case by case basis, looking at the long-term potential for engagement. As with investment strategies, such a determination can and should be expected to differ among different institutional investors.

Invest in Low Carbon or Green Tilted Index Fund(s)

Index providers and investment managers are developing new products to address climate change concerns of investors. Most major index providers now offer ex-fossil fuel indexes. The major index providers also created low carbon and green indexes, and broader ESG indexes that incorporate governance and social factor ratings alongside environmental ratings. Instead of removing specific stocks from an underlying benchmark, these indexes seek to reduce the tracking error of the climate change related index to its underlying benchmark by reweighting the stocks in the index to reduce, for example, carbon emissions exposure, or increase, for example, exposure to non-carbon and carbon reduction energy products, while maintaining a narrow tracking error to the underlying benchmark.

We use as an example below, MSCI's climate risk related indexes as compared to the MSCI ACWI, an equity reference benchmark for VPIC. As shown below, the MSCI ACWI Low Carbon Index maintained a 0.4 tracking error to the MSCI ACWI during the trailing five-year period ending June 30, 2016, while the MSCI ACWI ex-Fossil Fuel deviated from the underlying passive benchmark by 1%. During this five-year period, the MSCI ACWI ex-Fossil Fuels index outperformed both the MSCI ACWI and the MSCI ACWI Low Carbon indexes in returns, as oil prices plummeted. In periods of rising oil prices, such as began in 2016 and are anticipated to continue in 2017 and 2018, the removal of fossil fuels may well be a drag on the portfolio returns.

For passive investments seeking market wide exposure, a key advantage of low carbon indexes such as MSCI's is that deviations from the underlying benchmark are kept within a narrow range by design. MSCI's ESG Index ranks companies based on ESG scores and key ESG controversies, and also sets a range for deviation from the underlying benchmark. The tracking error for MSCI's ESG index is designed to be somewhat wider than that of its Low Carbon Target Index. The MSCI ACWI ESG outperformed the ACWI and ACWI Low Carbon Target during this period.

Performance and Risk Data (periods ending June 30, 2016)					
Name of Index	ACWI	ACWI ESG	ACWI LOW CARBON TARGET	ACWI ex COAL	ACWI ex FOSSIL FUELS
Annualized Return Gross of License Fees)					
5-year Return	5.95%	6.71%	6.28%	6.28%	7.15%
Volatility (Standard Deviation)					
5-Year Risk	13.54%	13.07%	13.53%	13.42%	13.19%
5-Year Tracking Error	0.00%	1.10%	0.41%	0.26%	1.03%
5-Year Sharpe Ratio	47.85%	54.54%	50.15%	50.50%	57.32%
5-Year Maximum Drawdown	17.33%	15.98%	17.19%	17.06%	16.75%
No. of Constituents	2,481	1,221	1,786	2,439	2,353
Average Mkt Cap	\$14,397	\$14,667	\$17,629	\$14,525	\$14,174
Comparative Carbon Exposure					
Carbon Emissions (tons CO2e/\$M invested)	184		45	170	145
Carbon Reserves as Potential Emissions	2094		19	1438	0
ExxonMobil Share of Index	2nd (1.1%)	Below top 50	86th (0.6%)	2nd (0.1%)	Excluded

Source: MSCI

MSCI also publishes carbon metrics for its MSCI ACWI, MSCI ACWI Low Carbon Target Index, and its MSCI ACWI ex-Fossil Fuels Index. As shown, MSCI's ACWI Low Carbon Target Index reduces carbon emissions per million dollar invested by 76%, as compared to the ex-fossil fuel reduction of 5%. Measuring potential carbon emissions per million dollar invested, the MSCI ACWI Low Carbon Index reduces the MSCI ACWI exposure by 99%, as compared to the ex-Fossil Fuel Index reduction of 100%. When measuring fossil fuel reserves, the Low Carbon Index generated a 60% reduction from the MSCI ACWI, as compared to 78% for the ex-Fossil Fuels Index.

The reweighting of individual securities can be significant when comparing the MSCI low carbon and ESG indexes to the underlying MSCI ACWI. For example, for the period ending June 2016, ExxonMobil's was the second largest holding in the MSCI ACWI. This compares to ranking 86th in the MSCI ACWI Low Carbon Target Index, and below the top 50 largest holdings among MSCI's ACWI ESG Index.

Institutional investors, including U.S. public pension funds, have invested a portion of their passive equity allocations in funds benchmarked to such indexes. For example, in July, 2016, CalSTRS, the second largest pension fund in the US, committed up to \$2.5 billion to low-carbon strategies in U.S., non-U.S. developed and emerging equity markets based on MSCI's ACWI Low-Carbon Target Index. The passive index portfolio will be internally managed by the CalSTRS Global Equity investment staff and implementation will be phased in beginning with U.S. equity followed later by developed markets and then eventually emerging markets.

The \$185 billion New York State Common Retirement Fund ("NYSCRF") is the third largest pension fund in the US. NYSCRF intends to double its exposure to \$4 billion in a low carbon index strategy that it launched with Goldman Sachs Asset Management (GSAM) just prior to the Paris COP21 conference in 2015, after what it said were positive environmental and financial results. The NYSCRF low carbon passive equity investment is based on index data from FTSE Russell. Peter Grannis, the First Deputy Comptroller in the Office of the New York State Comptroller, noted in December 2016 that performance so far had been encouraging: "It's been in line with our expectations and with a tracking error of 0.25%. On the environmental side we've reduced the carbon emissions of this asset portion by 70%.

In June, 2016, FTSE released a new FTSE Green Revenue Index that seeks to increase the exposure to green product and services in all companies large and small, even should those products and services be sold by fossil fuel companies, while maintaining a close tracking error to the underlying benchmark. This index measures the green product exposures in companies in an underlying benchmark, and then reweights constituents based on their green weighting. As with the low carbon indexes, no securities are excluded. However, some companies can go to a 'zero weight', thus effectively being reduced to a zero weight as compared to the underlying benchmark.

As shown below, the FTSE Russell 1000 Green Revenue Index closely tracked the underlying Russell 1000 benchmark on risk and return metrics, the number of constituents, and average market cap for the period ending December 31, 2016. The Green Revenue index shows 2.17% exposure to green revenue, up from 1.47% in the Russell 1000.

FTSE Russell 1000 Green Revenue Index Compared to Underlying Benchmark (Periods ending December 31, 2016)		
Name of Index	Russell 1000 Green Revenue	Russell 1000
Annualized Return Gross of License Fees		
1-Year Return	2.95%	2.93%
5-year Return	11.74%	11.88%
Volatility (Standard Deviation)		
1-Year Risk	14.56%	14.62%
5-Year Risk	12.36%	12.33%
5-Year Tracking Error	0.16%	
5-Year Sharpe Ratio	0.94	0.96
5-Year Maximum Drawdown	-14.89%	-14.68%
No. of Constituents	1001	1001
Average Mkt Cap	\$20,318MM	\$20,271MM
Measure of Green Revenue Exposure	2.17	1.47
Measure of ESG (0-5, highest)	2.79	2.79

Source: FTSE Russell

FTSE designed the Green Revenue Index to make modest changes based on green revenue exposure, so typically, an individual company's share of the R1000 doesn't change dramatically based on the reweighting for their Green Revenue Index.

The underlying concept – that green revenues are being generated by very large companies, that often have wide-ranging product lines in addition to green revenues, including publicly listed companies, and even oil and gas companies. For example, SASB states that industrial conglomerates General Electric (U.S.) and Siemens (Germany) each generated 7.3% of their revenues (\$9 billion and \$6.1 billion respectively) from the renewable energy segment as defined by SASB in 2016. Archer Daniel

Midland, U.S. agricultural product processing and trading company generated 9.3% of its revenue (\$6.3 billion) from 'bio-products' ethanol segment in 2016. Valero, an energy oil and gas refining company, generated 3.9% of its revenue (\$3.4 billion) from ethanol biofuel in 2015.

Climate related, and ESG benchmarks first emerged in equities. Barclay's December 2016 report shows that:

- ESG need not be an "equity-only" phenomenon and can be applied to credit markets without being detrimental to bondholders' returns.
- A positive ESG tilt resulted in a small but steady performance advantage.
- No evidence of a negative performance impact was found.
- ESG attributes did not significantly affect the price of corporate bonds. No evidence was found that the performance advantage was due to a change in relative valuation over the study period.
- When applying separate tilts to E, S and G scores, the positive effect was strongest for a positive tilt towards the Governance factor, and the weakest for social scores.
- Issuers with high Governance scores experienced lower incidence of downgrades by credit rating agencies.
- Broadly similar results were observed using ratings from the two ESG providers considered in this report (MSCI and Sustainalytics) despite the significant differences between their methodologies.

Barclay's research findings underscore the potential importance of systematic biases that can be introduced when developing any ESG benchmark compared to its underlying market wide benchmark, and the potential negative impacts of exclusion of entire industries. As reported:

"In research conducted in 2015, Barclays Research analyzed the historical returns of both its Socially Responsible ("SRI") corporate bond index that is based on negative screening, and Barclays Sustainability index that uses a 'best-in-class' approach based on ESG ratings to choose the best-rated subset of index bonds within each industry.

While both had underperformed in terms of nominal returns, some of that underperformance was traced to systematic biases unrelated to ESG criteria. Once they were corrected, we found that the return impact due specifically to the ESG tilt in security selection was positive for the Sustainability index, but negative for the SRI one. We concluded that the wholesale exclusion of entire industries from the investment universe, while it may be desirable based on ethical considerations, is not justified based on purely financial criteria."

Low carbon, green revenue and broader ESG Indexes are relatively new products that offer institutional investors alternatives to simple divestment and the related tracking error complications of divestment strategies that can be critical to passive investment strategies. In our opinion these strategies complement proxy voting and engagement efforts in that they do not reduce the shareowner's position in fossil fuel companies to zero. Thus shareholders maintain a vote on proxy proposals. We note that low carbon indexes will often reduce the shareowner position in fossil fuel companies, thus reducing the investor's weight in any given fossil fuel company proxy vote. Currently, passive investments vehicles that track an ESG index, including low carbon/green revenue indexes, have higher management fees than those of widely used standard benchmarks. The higher all in management fees will include slightly higher index licensing fees than the licensing fees for core benchmarks.

Invest in Active Manager(s) Emphasizing Climate Risks/Opportunities

The active manager institutional investment market has evolved to include both managers explicitly targeting renewables, or low carbon markets, and managers who incorporate ESG metrics into their

stock selection, including climate change material risks. These efforts encompass both fundamental and quantitative management strategies. Most recently, active managers began more systematically incorporating ESG risk factors alongside traditional financial factors seeking to improve active management returns, labeled below as ESG Integration.

ESG Active Investment Management Approaches

Investment Approach to ESG Factors	Description	Social Outcome	Competitive Performance Outcome
Negative Screening	Exclude companies based on non-financial concerns such as tobacco, firearms, more recently, fossil fuels.	REQUIRED	NOT ALWAYS REQUIRED
Impact Investing	Incorporate social outcome and seek to make a market return.	REQUIRED	VARIED
Positive Screening	Select a portfolio of companies with desirable characteristics to form an investment universe.	REQUIRED	VARIED
ESG Integration	Integrate ESG material risks into traditional financial analysis, independent of seeking any specific social/environmental outcome to improve portfolio performance.	NOT EXPLICITLY REQUIRED	REQUIRED

The growth in ESG investment demand is fueling an expansion of the ESG investment manager universe. Historically ESG was primarily the purview of specialized ESG managers, and some managers that offered both traditional investment products and ESG products. Today, large global investment firms are developing ESG products, both through acquisition and increased hiring and reorganization. In some cases, a new ESG profile means emphasizing what a manager believes they have always done regarding these risks.

Similar to the passive investment market, active management around climate risk concerns grew first in equity markets. Today green bonds are being measured, rated, and targeted for specific investment strategies to boost their share in an overall bond portfolio.

In our opinion, active manager products that integrate climate risks or broader ESG risks into their security selection, bear the same active selection risks of the broader active manager market. Typically, the risk increases as the manager's universe of securities narrows. Such products are compatible with monitoring, proxy voting and engagement. To the degree that such a strategy replaces a strategy that doesn't account for climate risks, including stranded asset risk, the move to an ESG strategy incorporating these risks may reduce or remove the investor's proxy voting weight in such companies. ESG active manager fees are typically similar to fees charged by comparable non-ESG active managers.

Monitoring

Monitoring of a portfolio for ESG, including climate change, risks can be undertaken portfolio wide and by monitoring of individual managers. The tools for such analysis are rapidly being developed and marketed in response to institutional investor demand. There is widespread evidence of a concerted push for disclosure, standardization, quantification and systematic risk analysis to integrate sustainability into risk/return analysis across the market.

The December 2016 release of the recommendations from the Task Force on Climate-related Financial Disclosures ("TCFD") marked a prominent step in seeking consistent disclosure, without which investors cannot appropriately assess and price the risks involved. The TCFD's, which was assembled by Mark Carney as Chairman of the Financial Stability Board, and chaired by Michael Bloomberg, aims to help integrate better understanding of the risks and opportunities presented by climate change into

investment and insurance underwriting decisions. There are four key features to the TCFD's recommendations:

- Adoptable by all organizations.
- Included in financial filings rather than other reports such as corporate social responsibility reports.
- Designed to solicit decision-useful, forward looking information on financial impacts.
- A Strong focus on risks and opportunities related to the transition to a lower-carbon economy.

Crucially, the report recommends that companies use different scenarios to report on governance, strategy, risk management, and metrics and targets, including a 2degree scenario.

Portfolio-wide monitoring might involve looking at a plan's overall carbon footprint, or assessing a plan's overall exposure, compared to its benchmark, to E, S and or G, or combined ESG ratings of companies in their portfolio. Carbon footprint analysis today contains many inconsistencies and holes due to lack of consistent data reported by companies, but is improving as reporting improves. Firms such as MSCI and Sustainalytics provide ESG company ratings. ESG ratings can provide meaningful insights into individual company risks. These ratings are not quantitative metrics, such as a standard deviation that can be aggregated and reported as an overall portfolio risk exposure metric. All ESG ratings involve the judgement of the researchers conducting the analysis. Ratings can and do differ meaningfully among providers. For example, Northern Trust observed in January 2017 that they found MSCI and Sustainalytics gave similar ESG ratings for approximately 60% of the companies that they both rated.

Broader, portfolio-wide climate risk frameworks are being developed. Mercer sought to measure climate risk by asset class, and identify differing industry impacts in its ongoing work. Towers Watson announced in January 2017 that it is rolling out a new sustainability framework that seeks to link sustainability analysis with investment returns. As reported by Responsible investor, a pillar of their analysis is:

"industry level research to determine how business profit pools are likely to change and how private and public capital will be allocated. When its complete, the framework will allow investors to seamlessly integrate the same financial, sustainability and ESG metrics into all aspects of portfolio management. i.e., from risk management, through portfolio construction, all the way down to security selection."

The prominence of concerns over environment-related risks is generating new quantitative metrics too, that did not exist a decade ago. For example, a decade ago, a typical institutional investor interested in the energy sector would not necessarily consider a firm's track record on environmental issues. Today, regulatory changes facing the energy sector make such non-financial issues potentially material. Investment consultants to institutional investors have increased their efforts to monitor managers on environmental, social, and governance ("ESG") issues, including climate change risks, incorporating such questions into regular monitoring activities, and into requests for proposals when new managers are being considered.

Recent research indicates that distinguishing between material and immaterial ESG issues can be meaningful in capital allocation. Khan, Serafeim and Yoon's 2015 analysis:

"Corporate Sustainability: First evidence on Materiality", finds that "firms with good ratings on material sustainability issues significantly outperform firms with poor ratings on these issues. In contrast, firms with good ratings on immaterial sustainability issues do not significantly outperform firms with poor ratings on the same issues. These results are confirmed when we analyze future

changes in accounting performance. The results have implications for asset managers who have committed to the integration of sustainability factors in their capital allocation decisions."

Manager monitoring on ESG issues including climate risk can often be accomplished by a pension plan's investment consultant, without adding costs to the plan's overhead. Monitoring can signal managers that these issues concern their institutional clients and can complement proxy voting and regulatory activities. Monitoring in itself is often a first step in understanding the climate change issues facing the portfolio, without taking specific actions through voting, engagement, investment or divestment. As noted above, only a handful of U.S. public pension funds in the survey currently monitor their investment managers on climate change related risks. VPIC does monitor its managers on ESG issues. For example, VPIC reported the manager responses to staff's survey of managers on ESG integration in the State of Vermont Treasury Staff Divestment Memo, July 28, 2015.

Proxy Voting

As shown below, the number of shareholder proposals on environmental issues, and the average number of votes for shareholder proposals on environmental and environmental disclosure related issues, including climate change, trended upward for the Russell 3000, energy stocks, and for XOM since 2000. During the first 10 years of the 21st century (2000-2009), Russell 3000 stocks averaged 23 environmental-related shareholder proposals each year. During the most recent period (2010-16), this number more than doubled to an average of 57 environmentally related shareholder proposals each year. Similarly, during these periods, the average number of votes for environmentally related shareholder proposals among the Russell 3000 companies rose from 13% to 22%.

Shareholder Proposals on Environmental issues, 2000-2016*								
Period	Num. Went to Vote			Num. Passed		Avg Votes For		
	R3000	Energy	XOM	R3000	XOM	R3000	Energy	XOM
2000-2009	23	8	1.8	0.2	0	13%	16%	8%
2010-16	57	12	2.9	0.6	0	22%	22%	13%

Sources: CalSTRS and CII information based on ISS data.

Institutional investors anticipate re-filing a high profile shareholder resolution for the 2017 proxy season at ExxonMobil, which was filed in 2016 to urge Exxon to publish an annual assessment of the long-term portfolio impacts of public climate change policies. In 2016, this shareowner proposal got the support of 38% of shareholders, as part of a campaign of similar high-scoring resolutions at oil majors around the world, many of which received majority support.

Recent research finds that the impact of shareholder proxy voting proposals on material environmental and social issues have affected corporate financial performance. Grewal, Serafeim and Yoon's 2016 report "Shareholder Activism on Sustainability Issues" finds (based on SASB's industry level definitions of materiality) that:

"42 percent of the shareholder proposals in their sample were filed on financially material issues. We document that filing shareholder proposals are related to subsequent improvements in the performance of the company on the focal environmental or social issue, even though such proposals nearly never received majority support. Improvements occur across both material and immaterial issues. Proposals on immaterial issues are associated with subsequent declines in firm valuation, while proposals on material issues are associated with subsequent increases in firm value. We show that managers increase performance on immaterial issues in companies

with agency problems, low awareness of the materiality of sustainability issues, and poor performance on material issues."

Shareholder proxy proposals that are not explicitly related to carbon may exert influence at fossil fuel companies on carbon-related issues. A key example is the rising support for proxy access. At Exxon in 2016, a shareholder proposal passed that gives shareholders greater power to propose director candidates. Institutional investors anticipate using these steps to advocate for Exxon board members who are "climate competent". As reported by Sidley Austin LLP, in "Sidley Corporate Governance Report" (January 3, 2017):

"In late December 2016, proxy access reached the tipping point in terms of adoption by large companies – just over 50% of S&P 500 companies have now adopted proxy access. Through the collective efforts of large institutional investors, including public and private pension funds, and other shareholder proponents, shareholders are increasingly gaining the power to nominate a portion of the board without undertaking the expense of a proxy solicitation. By obtaining proxy access (the ability to include shareholder nominees in the company's own proxy materials), shareholders will have yet another tool to influence board decisions."

Proxy voting can complement manager and portfolio monitoring, engaging with companies and regulators. In a targeted low carbon fund, proxy voting at fossil fuel companies can still be useful, but to a smaller degree because the exposure to fossil fuel companies is reduced compared to a market wide fund. Divestment would negate VPIC's proxy efforts at fossil fuel companies because fossil fuel companies would be eliminated from the portfolio.

Summary of Market Options in Relation to Divestment

The table on the following page seeks to summarize key parameters for institutional investors of various tools available to control the climate change risks and opportunities. As shown, straight divestment strategies, by excluding companies from any given fund or universe, make a strong public statement and rely on a transparent and simple methodology.

Divestment does not consider short-term financial risks or long-term diversification risks, which increase as the universe of divested stocks increases. Divestment from fossil fuels, suppliers of fossil fuel energy, will, if simply reweighting the rest of the portfolio, result in an increased exposure to companies on the demand side of fossil fuel energy, and in the companies financing fossil fuels. Transaction, restructuring and opportunity costs may vary according to the assets being divested, and the fund structure from which they are being divested. Divestment removes an institution's ability to influence corporate behavior by voting proxies and engagement.

Approaches to Addressing Climate Risk

Key Parameters for Institutional Investors*

Approach	Short-term Financial Risk*	Long-term Investment Thesis*	Costs	Shareholder Communication*	Public Stance*
Divest	Not-considered	Based on individual security selection; or long-term stranded assets thesis; diversification risks not considered	Transaction costs, portfolio restructuring, and opportunity costs vary with assets being divested and with fund structure.	Transparent and simple methodology	Makes strong public statement; but cannot directly influence corporate behavior; removes proxy and engagement access to influence companies.
Monitor funds	None	Alert managers	Minimal	Highlight concerns	Shows concerns
Vote Proxies	None	Improve underlying fundamentals of individual public equity investments	Staff and board time; proxy service provider costs. Requires costly in-house or SMA passive management to control all votes.	Generally simple; specific proxies can be complex	Voting proxies makes public statement; can directly influence corporate behavior
Engage with Companies	None	Improve underlying fundamentals of individual public equity investments	Requires minimal to high staff and board time depending on the number and complexity of issues.	General simple; specific efforts can be private process; communication can be detailed	Makes statement. Often private during engagement process; can directly influence corporations
Engage on Regulatory Issues	None	Improve regulatory fundamentals	Requires minimal to high staff and board time.	Generally simple. Specific issues can be complex.	Makes statement and can influence regulatory environment
Invest in Low carbon or green tilted index funds	Optimizes to reduce tracking error to parent index	Optimize to reduce carbon increase green, and retain full opportunity set	Typically, a few basis points more in fees than underlying benchmark.	Sophisticated methodology, could be more difficult to explain	Makes statement for low carbon/high green economy. Allows voting proxies, engagement.
Invest in active focus on climate risks/opportunities	Risk depends on fund strategy	Relies on active manager skills to outperform	ESG active manager fees in line with non-ESG active manager counterparts	Transparent and simple to explain	Makes statement for low carbon/high green economy. Allows voting proxies; engagement;

*PCA developed this chart of approaches to climate change risk from MSCI's March 2015 key parameters for institutional investors for assessing different public equity index options. PCA's adaptation including adding the cost parameter.

Conclusion

In our opinion, divestment of fossil fuels, thermal coal, or Exxon is one possible approach for VPIC to mitigate a potentially significant climate risk – possible stranded assets of fossil fuel suppliers. Given the financial and governance costs that come with fossil fuel divestment, in PCA's opinion, divestment of fossil fuels, thermal coal, or Exxon has not been shown to be in the best interests of VPIC pension beneficiaries, and conflicts with VPIC governance structure. In our opinion, markets now offer meaningful tools to address climate risk other than divestment, from coordinated proxy voting and

corporate and public policy engagement, to passive and active low carbon alternatives that avoid the broad market exit risk inherent in near-term divestment approaches. We believe VPIC should continue its effort to address and manage climate and other ESG risks and opportunities. In our opinion, VPIC should continue to stay abreast of, and consider, the ongoing changes in assessments of climate risks, and approaches to managing these risks.

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Appendix 1) List of Peer Pension Plans that Responded to Climate Risk Survey

We thank the pension plans listed below for participating in this survey. The plans are listed according to their total assets under management.

2016 Climate Change Survey of VPIC peer U.S. Public Pension Plans	
Name of Pension Plan	Assets Under Management (\$ Billions)
Total	\$887
East Bay Municipal Utility District Retirement System	\$1
San Luis Obispo County Pension Trust	\$1
Louisiana Public Employees Retirement System	\$2
Municipal Fire and Police Retirement System of Iowa	\$2
San Joaquin County Employees Retirement Association	\$2
Seattle City Employees Retirement System	\$2
Sonoma County Employees Retirement Association	\$2
Fresno City Employees' Retirement System	\$3
Fresno County Employees' Retirement Association	\$4
Employees' Retirement System of Rhode Island	\$8
Arkansas Public Employees Retirement System	\$9
Municipal Employees Retirement System of Michigan	\$9
Oklahoma Public Employees Retirement System	\$9
Los Angeles City Employees Retirement System	\$14
Employees' Retirement System of Georgia	\$15
Employees' Retirement System of the State of Hawaii	\$15
West Virginia Investment Management Board	\$17
Kansas Public Employees' Retirement System	\$18
Los Angeles Fire and Police Pension Fund	\$19
South Carolina Retirement Systems	\$29
Public School & Education Employee Retirement Systems of Missouri	\$39
Maryland State Retirement and Pension System	\$45
Oregon Public Employees' Retirement System	\$68
New York State Common Retirement Fund	\$179
Florida State Board of Administration	\$180
California State Teachers Retirement System	\$195

Appendix 2) VPIC and Vermont Treasurer Climate Change Engagement Activities

VPIC and Vermont Treasurer Engagement Activities on Climate Change (April 2015 - December 2016)

4/16/2015	BP resolution that VPIC co-filed on received 98.28% of the vote to get better disclosure and get an A from CDP
4/17/2015	TRE & VPIC signed-on to letter to the SEC on better disclosure regarding climate change risks
4/21/2015	TRE signed-on to letter to the SEC to strengthen disclosure of corporate political contributions.
5/5/2015	Declare vote for the XOM resolution for GHG reduction targets
5/21/2015	Signed on to Letter: The New York State Common Retirement Fund and Green Century Capital Management, together with over \$1.5 trillion AUM from signatories, are calling on the Roundtable on Sustainable Palm Oil (RSPO) to strengthen its standards to support deforestation-free and exploitation-free palm oil.
5/27/2015	Treasurer attended XOM AGM. Beth introduced resolution and spoke in capacity as treasurer
7/6/2015	Signed on to letter to SEC re: proxy access
7/10/2015	Treasurer sent letter on behalf of VPIC & TRE to SEC re: proxy access proposal rulings 14a-8(i)(9) for proxy access (if mgmt brings similar resolution shareholder's is thrown out)
7/13/2015	TRE signed on to SEC letter asking for stronger private equity fee disclosure to public pension LPs. RI Treasurer was lead on letter
7/21/2015	TRE meets with ISS to discuss policy on Environmental resolutions and how we can get their support re: Exxon
7/22/2015	TRE meets with INCR members to create a work plan for the 2016 proxy season
7/27/2015	VMERS votes to reject divestment of fossil fuels
7/27/2015	Vermont Retired Teachers Association votes to reject divestment of fossil fuels
7/28/2015	VPIC votes unanimously to reject divestment of fossil fuels
7/29/2015	Follow-up with Investment Managers re: their UN PRI grade on fulfilling the principles
7/29/2015	Follow-up with Australia's SuperEnergy Fund re: PE disclosure laws, research, requests, etc
8/5/2015	Call with Exxon to discuss questions regarding transparency
9/4/2015	Treasurer hosted an informational session about Pensions and included an ESG session in the afternoon where Ceres presented to legislators
10/30/2015	Treasurer signed on to a letter to the Indonesian President urging him to support private-sector forest conservation policies (part of the Palm Oil deforestation movement)
1/27/2016	Treasurer Pearce is serving as a Convener of the 2016 Investor Summit on Climate Risk at the UN Headquarters in NYC
12/2/2015	VPIC co-files with As You Sow and Calvert on resolution with FirstEnergy requesting they create a report quantifying the potential financial losses associated with stranding of its coal generation facilities under a range of climate change driven regulation scenarios mandated by the Clean Power Plan.
12/11/2015	VPIC co-filed with Tri-State Coalition on a resolution at Chevron requesting they create GHG targets for the long-term.
12/14/2015	VPIC co-filed with NY State Common Retirement Fund and the Endowment of the Church of England at Exxon on a CAR resolution
2/10/2016	Treasurer Pearce, on behalf of VPIC, participated in a filer call with Exxon to discuss the resolution along with NY State, Church of England, Boston Trust, UC Davis and CDA
3/28/2016	Director of Investments sends Dear Colleague letter on Beth's behalf to Investment Managers, Vendors (NEPC, JPM, ISS, etc), and public fund sponsors requesting they declare their support publicly for CAR resolutions.
3/30/2016	ISS and Glass Lewis call with investors to discuss supporting the Chevron Resolution
4/5/2016	Vermont State Treasurer and VPIC sign on to "Declaration of Support" for 2D resolutions
4/6/2016	Staff attended webinar on EU Non-Financial reporting Directive (reporting on ESG factors requirement for companies)
4/21/2016	OT sent on behalf of VPIC a memo to ISS & Glass Lewis in support of the Exxon Resolution Item No. 12
4/21/2016	Dear Treasurer's Memo sent from Treasurer Pearce requesting their support for Exxon, Chevron & FirstEnergy proposals on the proxy vote.
6/13/2016	Signed on to a letter through CII directed to Honorable Maxine Waters (Ranking Member) and Honorable Jeb Hensarling (Chairman) of the House Committee on Financial Services to voice our concern with HR 5311. TRE then sent a letter to VT Congressional delegation to tell them we are not happy with section g of this bill and that we have signed on to CII letter concerning HR 5311.
7/8/2016	CII sends letter to SEC for comment period "Business and Financial Disclosure Required by Regulation S-K".
7/20/2016	State of VT Treasurer sends letter to SEC during their request for Comment period for "Business and Financial Disclosure Required by Regulation S-K".
9/1/2016	TRE signed on to a Ceres letter sent to House and Senate party leadership and relevant Appropriations Committee leadership to help preserve the Climate Risk Disclosure text that is under attack due specifically to Amendment #44 to the House of Representatives' Financial Services and General Government (FSGG) Appropriations bill, which passed on July 7, 2016.
9/2/2016	TRE signed on to Trillium/CalSTRS/NY Comptroller/Croatian Institute letter regarding the NC HR2 bill
11/10/2016	VPIC co-files with Mercy Investment Services at Marathon Petroleum on resolution 2 degree reporting
11/21/2016	VPIC co-files with NY State on Dominion Resources resolution 2 degree reporting
11/30/2016	VPIC co-files with NY State on Exxon Mobil resolution 2 degree reporting
12/7/2016	VPIC co-files with Wespeth Investment Management & Hermes EOS on Chevron resolution 2 degree reporting
12/7/2016	VPIC co-files with As You Sow and Arjuna Capital on Chevron resolution low carbon transition
12/7/2016	VPIC co-files with the Community of the Sisters of St. Dominic of Caldwell, NJ on Southern Company resolution 2 degree reporting

Appendix 3) SSGA preliminary estimates for possible commingled fund recommendations

Please note that the information below is preliminary, and for general information, not to be considered an official response to a request for proposals.

Option 1 – Launch commingled fund with custom proxy voting policies

- Not an option at this time. We believe our policy is strong on ESG/Climate issues. Happy to discuss our policy and approach to engagement.

Option 2 – Launch commingled fund that utilizes a 3rd party's proxy voting policies

- We will not be able to launch a commingled fund that utilizes a 3rd party proxy voting policy.

Option 3 – Transfer \$500M from SP500 Commingled to SP500 Ex Fossil Fuel Separately Managed Account

- Fee Schedule – 5 bps Flat fee
- \$65k would be added to current relationship minimum
- Vermont provide screens for SSGA to implement and would also be responsible for sending updates to SSGA
- Proxy options at this fee level: (1) Vermont votes or (2) SSGA votes in accordance with the SSGA policy
- Additional fees: Any additional index licensing fees may also apply

Option 4 – \$500 mm MSCI ACWI Low Carbon Target Index or MSCI ACWI Low Carbon Target IMI Index Separately Managed Account

- Fee Schedule – 12 bps for ACWI based benchmark, 15 bps for an ACWI IMI benchmark
- Minimum annual fee of \$125,000 per account to be added to current relationship minimum
- Proxy options at this fee level: (1) Vermont votes or (2) SSGA votes in accordance with the SSGA policy
- Additional fees: Any additional index licensing fees may also apply

Option 5 – SSGA opens an MSCI ACWI Low Carbon Target Index or MSCI ACWI Low Carbon Target IMI Index Commingled Fund

- Seed Capital - ~\$200M for an ACWI benchmark and ~\$300 mm for an ACWI IMI benchmark
- Fee Schedule – 10 bps for ACWI, 13 for ACWI IMI (not inclusive of licensing fees)
- Minimum annual fees of \$25,000 per commingled fund
- Proxies would follow SSGA policies and SSGA would vote – no custom voting would be available

Option 6 – SSGA opens an S&P 500 using MSCI Low Carbon Target for Index Commingled Fund

- Seed Capital - ~\$500M for a S&P500 benchmark
- Fee Schedule – 4 bps (subject to potential additional licensing fees)
- Minimum annual fees of \$25,000 per commingled fund
- Proxies would follow SSGA policies and SSGA would vote – no custom voting would be available

Appendix 4) Northern Trust and Rhumblin estimates for commingled fund recommendations

Please note that the information below is preliminary, and for general information, not to be considered as an official response to a request for proposals.

Northern Trust

Comingled vehicle to vote proxies along ISS specialized (such as Public Fund, or ESG) guidelines.

Northern Trust provided a few options for a commingled fund structure that might offer better alignment with VPIC proxy voting guidelines than their current passive equity investments offer. For each option, Northern Trust would manage the assets; outsource the proxy voting to ISS according to one of ISS's specialized guidelines. The pricing presented below is for lending options. Northern Trust notes that the fees quoted are for asset management services, and any operating expenses such as administration, audit, and ISS fees will be born within the fund NAV.

Option 1) Use NT's existing Russell 3000 Labor Select index fund. The primary objective of the Northern Trust Labor Select Russell 3000 Index Fund is to approximate the risk and return characteristics of the Russell 3000 Index. This Index is commonly used to represent the broad U.S. equity market. Proxies for securities held in the fund shall be voted in accordance with the AFL-CIO proxy voting guidelines. The proxy voting for this fund is outsourced to ISS and follows ISS Taff Hartley guidelines. This fund currently manages approximately \$500 million. The fee schedule is 3.5 basis points per annum for \$25 million to \$100 million; 2 basis points per annum for a \$100 - \$500 million; or 1.5 basis points per annum for \$500 million or above investment.

Option 2) Seed a commingled vehicle tracking the S&P500 and engage ISS to report proxies along their Public Fund (or other) guideline. NT could launch a new vehicle with a minimum of \$250 million. The fee schedule would be 4 basis points per annum for \$25 million to \$100 million; 3 basis points per annum for a \$100 - \$500 million; or 2 basis points per annum for \$500 million or above investment.

Option 3) Seed a commingled vehicle tracking the MSCI World-ex US Index (could use Low Carbon) and engage ISS to report proxies along their Public Fund policies. NT could launch a new vehicle with a minimum of \$250 million. The reason Northern Trust suggests the World Ex-US here rather than World only is to give your clients more flexibility in weighting between US and non-US by combining these two funds. The fee schedule would be 8 basis points per annum for \$25 million to \$100 million; 6 basis points per annum for a \$100 - \$500 million; or 4 basis points per annum for \$500 million or above investment.

Option 4) Seed a commingled vehicle to vote in line with a custom public fund proxy voting framework. Northern Trust offered the following thoughts for VPIC to consider if they were to establish their own board/governance structure for voting proxies jointly with other public pension plans through a commingled fund.

Custom Option a) The client could launch their own vehicle in a LP format, hire a sub-advisor to manage the investment portfolio, retain service providers to administer and conduct the legal and audit work around pooling investor assets. They could then hire a proxy service provider such as ISS or Glass Lewis to implement a custom proxy voting policy that the client/board governing this pool would establish and monitor.

Custom Option b) A second, less expensive path, would be to gather a collection of public funds who, together, wish to develop and adopt a public fund custom proxy

voting framework; have them agree on a custom proxy voting policy; agree to request the same passive equity investment manager to invest their assets according to this custom public fund proxy voting policy; and direct an agreed upon proxy voting service provider to vote and report the proxies according to their custom public fund proxy voting framework.

Under this option, each public pension fund would invest directly in the new vehicle that a passive equity manager establishes for this custom public fund proxy voting framework, similar to the process undertaken to launch NT's R3000 Labor Select Index Fund. For Northern Trust, the minimum assets to launch such a fund would be \$250 million, with fee schedules in line with those stated above, where a U.S. domestic fund is less expensive to implement than a non-U.S. or world.

Rhumbline

To open an additional passive comingled fund, it would take approximately 30-60 days for the legal work to be completed. The summary features and costs for launching a new fund with the objective of tracking the **MSCI ACWI Low Carbon Index** are as follows:

- Estimated Portfolio size - \$100 million.
- Estimated holdings – 1,500 companies across 46 countries.
- Number of trades per year – 500 to 1,000 depending on index turnover, corporate actions, liquidity needs, etc.
- Daily NAV and daily liquidity.
- Investment Management Fee – 10 basis points on the first \$100 million, 9 bps on next \$200 million, 7 bps on excess (inclusive of MSCI index licensing fee).
- \$25,000 minimum annual fee.
- Custody and Administration Fee (State Street) – 3 to 5 basis points depending on trading volume.

Appendix 5) VPIC Manager Exposure to XOM, Thermal Coal and Fossil Fuel Holdings (June 30, 2016)

Asset Class/Investment Man: Account Type	Assets Under Mgt		Exposure to							# of Firms		
			XOM		ThC		FF					
			(%)	(\$Millions)	% of Total	\$millions	% of Total	\$millions	% of Total	\$Millions	XOM	ThC
Total Plan		100.0%	\$3,743.2	0.27%	\$10.0	0.59%	\$22.2	3.12%	\$117.0			
Equities	Total	40.0%	\$1,507.7	0.27%	\$10.0	0.58%	\$21.9	2.83%	\$106.1			
Equities	Commingled	23.5%	\$877.9	0.26%	\$9.7	0.45%	\$17.0	1.79%	\$66.9			
SSGA S&P 500 Cap Weighted	Commingled Passive	12.1%	\$453.4	0.26%	\$9.7	0.07%	\$2.6	0.73%	\$27.4	1	4	27
Aberdeen Emerging Mkt Equi	Commingled Active	6.6%	\$247.1	0.00%	\$0.0	0.26%	\$9.8	0.65%	\$24.3	0	3	6
Mondrian Intl Equity	Separate Active	4.0%	\$149.6	0.00%	\$0.0	0.07%	\$2.5	0.42%	\$15.8	0	1	4
SSGA MSCI ACWI ex-US	Commingled Passive	4.2%	\$156.4	0.00%	\$0.0	0.12%	\$4.5	0.39%	\$14.7	0	56	147
Acadian Intl Equity	Separate Active	4.0%	\$149.1	0.00%	\$0.0	0.04%	\$1.6	0.34%	\$12.8	0	4	12
SSGA S&P500 Eq. Wtd Ex Tobz	Separate Passive	4.2%	\$158.7	0.01%	\$0.3	0.02%	\$0.8	0.23%	\$8.8	1	3	27
Wellington Smal Cap Value	Separate Active	2.0%	\$73.9	0.00%	\$0.0	0.00%	\$0.0	0.03%	\$1.1	0	0	1
SSGA S&P Mid Cap 400	Commingled Passive	0.6%	\$21.0	0.00%	\$0.0	0.00%	\$0.2	0.02%	\$0.6	0	3	12
Champlain Mid Cap	Separate Active	2.2%	\$81.5	0.00%	\$0.0	0.00%	\$0.0	0.01%	\$0.5	0	0	1
SSGA Russell 2000 ex-Tobacc	Separate Passive	0.5%	\$17.0	0.00%	\$0.0	0.00%	\$0.0	0.00%	\$0.1	0	0	7
Fixed Income	Total	32.0%	\$1,194.4	0.00%	\$0.0	0.01%	\$0.3	0.06%	\$2.3			
Fixed Income	Commingled	18.5%	\$694	0.00%	\$0.0	0.00%	\$0.0	0.05%	\$1.7			
SSGA Barclays Aggregate Inde	Commingled Passive	3.1%	\$117.7	0.00%	\$0.0	0.00%	\$0.0	0.00%	\$0.0			
Guggenheim High Yield	Separate Active	4.0%	\$147.9	0.00%	\$0.0	0.03%	\$1.2	0.12%	\$4.4	0	2	8
Wellington EMD	Commingled Active	5.1%	\$192.7	0.00%	\$0.0	0.00%	\$0.0	0.05%	\$1.7	0	0	1
PIMCO Core Plus	Separate Active	5.8%	\$216.3	0.00%	\$0.0	0.00%	\$0.0	0.03%	\$1.2	0	0	2
PIMCO Unconstrained Bond	Separate Active	2.5%	\$92.9	0.00%	\$0.0	0.00%	\$0.0	0.01%	\$0.3	0	0	1
KDP High Yield	Separate Active	1.1%	\$39.7	0.00%	\$0.0	0.01%	\$0.3	0.02%	\$0.8	0	1	3
Wellington DAS Plus Beta 10y	Commingled Active	2.9%	\$108.9	DU	DU	DU	DU	DU	DU	DU	DU	DU
GAM Unconstrained Bond	Commingled Active	3.5%	\$130.8	0.0%	\$0.0	de mini	de minimus	de minimus	de minimus	DU	DU	DU
BlackRock TIPS	Commingled Passive	3.8%	\$144.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Absolute Return	Commingled	17.0%	\$647.8	0.0%	\$0.0	0.0%	\$0.0	0.21%	\$7.8			
AQR Gbl Risk Prem Fd Moder	Commingled Active	8.3%	\$309.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grosvenor GIPMS HFOF	Commingled Active	5.2%	\$193.0	DU	DU	DU	DU	0.19%	\$7.0	DU	DU	DU
Allianz Structured Alpha	Commingled Active	1.9%	\$70.0	NA	NA	NA	NA	NA	NA			
Mellon Global Expanded Alpt	Commingled Active	2.0%	\$75.3	0.0%	\$0.0	0.0%	\$0.0	0.02%	\$0.8	0	0	3
Alternatives (Real Estate, Commodities, Private Equity)		11.0%	\$393.2	0.0%	\$0.0	0.0%	\$0.0	0.02%	\$0.7			
Total Private Equity- Habourv	Commingled Active	1.3%	\$48.9	0.0%	\$0.0	0.0%	\$0.0	0.02%	\$0.7	0	0	89

Appendix 6) VPIC Manager Trailing Return Estimated Impacts of Divestment

Asset Class/Investment Manager	Account Type	Assets Under Mgt		Trailing Returns											
		Bnmk	Actual	1-Year			5-Year								
				x-XOM	x-ThC	x-FF	Bnmk	Actual	x-XOM	x-ThC	x-FF				
(%)	(Millions)														
Total Plan		100.0%	\$3,743.2												
Equities		40.0%	\$1,507.7												
SSGA S&P500 Eq. Wtd Ex Tobacco	Separate	4.2%	\$158.7	2.5	2.5	2.4	2.4	2.9	11.9	11.9	11.9	11.9	12.6		
SSGA S&P 500 Cap Weighted	Commingled	12.1%	\$453.4	4.0	4.1	3.7	3.9	4.1	12.1	12.1	12.5	12.4	13.3		
Champlain Mid Cap	Separate	2.2%	\$81.5	0.6	4.7	-	-	5.3	10.9	12.6	-	-	13.7		
SSGA S&P Mid Cap 400	Commingled	0.6%	\$21.0	1.3	1.4	-	-1.0	-1.3	10.5	10.6	-	-9.9	10.4		
SSGA Russell 2000 ex-Tobacco	Separate	0.5%	\$17.0	-70.8	-10.8	-	-	-10.9	8.5	8.5	-	-	8.6		
Wellington Smal Cap Value	Separate	2.0%	\$73.9	-2.6	-0.8	-	-	-1.4	8.1	11.2	-	-	10.9		
Acadian Intl Equity	Separate	4.0%	\$149.1	-9.3	-5.4	-	-4.9	-4.6	2.1	4.2	-	4.3	4.6		
Mondrian Intl Equity	Separate	4.0%	\$149.6	6.5	8.1	-	7.5	6.6	7.4	7.3	-	7.7	8.1		
SSGA MSCI ACWI ex-US	Commingled	4.2%	\$156.4	-10.2	-10.0	-	-9.7	-9.6	0.5	1.7	-	-2.3	-2.1		
Aberdeen Emerging Mkt Equity	Commingled	6.6%	\$247.1	-3.7	-2.9	-	-	-1.9	-0.4	0.3	-	-	2.7		
Fixed		32.0%	\$1,194.4												
PIMCO Core Plus	Separate	5.8%	\$216.3	6.0	5.4	-	-	5.3	3.8	4.1	-	-	4.1		
PIMCO Unconstrained Bond	Separate	2.5%	\$92.9	-0.4	-0.4	-	-	-0.5	No VPIC 5-Year Track Record						
GAM Unconstrained Bond	Commingled	3.5%	\$130.8	0.5	1.0	de minimus					No VPIC 5-Year Track Record				
SSGA Barclays Aggregate Index	Commingled	3.1%	\$117.7												
Guggenheim High Yield	Separate	4.0%	\$147.9	1.7	0.8	-	0.8	0.9	No VPIC 5-Year Track Record						
KDP High Yield	Separate	1.1%	\$39.7	1.6	0.6	-	0.4	2.4	5.8	5.2	-	5.1	5.3		
Wellington EMD	Commingled	5.1%	\$192.7	10.3	10.0	-	de min	mixed+/-	No VPIC 5-Year Track Record						
Absolute Return		17.0%	\$647.8												
Mellon Global Expanded Alpha I	Commingled	2.0%	\$75.3	0.8	-0.9	-	-0.9	-1.3	4.3	6.1	-	6.1	5.7		
Alternatives (Real Estate, Commodities, Private Equit		11.0%	\$393.2												
Total Private Equity- Habourvest		1.3%	\$48.9	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU		

Appendix 7) Divestment Impacts on Transaction Costs

Asset Class/Investment Manager	Account Type	Assets Under Mgt		Transaction Costs to Divest						# of firms		
		(%)	(\$Millions)	XOM		ThC		FF		XOM	ThC	FF
				XOM (\$M)	Trnsct (\$)	AUM (\$M)	Trnsct (\$)	AUM (\$M)	Trnsct (\$)			
Total Plan		100.0%	\$3,743.2	\$10.0	\$68	\$22.2	\$51,191	\$117.0	\$185,422			
Equities Total		40.0%	\$1,507.7	\$10.0	\$68	\$21.9	\$8,683	\$106.1	\$132,593			
Equities Commingled		23.5%	\$877.9	\$9.7	CannotD	\$17.0	CannotD	\$66.9	CannotD			
Equities Separately Managed		16.8%	\$629.8	\$0.3	\$68	\$4.9	\$20,638	\$39.1	\$132,593			
SSGA S&P 500 Cap Weighted	Commingled	12.1%	\$453.4	\$9.7	CannotD	\$2.6	CannotD	\$27.4	CannotD	1	4	26
Aberdeen Emerging Mkt Equity	Commingled	6.6%	\$247.1	\$0.0	NA	\$9.8	CannotD	\$24.3	CannotD	0	3	6
Mondrian Intl Equity	Separate	4.0%	\$149.6	\$0.0	\$0	\$2.5	\$16,141	\$15.8	\$103,481	0	1	4
SSGA MSCI ACWI ex-US	Commingled	4.2%	\$156.4	\$0.0	NA	\$4.5	CannotD	\$14.7	CannotD	0	56	136
Acadian Intl Equity	Separate	4.0%	\$149.1	\$0.0	NA	\$1.6	\$4,187	\$12.8	\$27,204	0	4	12
SSGA S&P500 Eq. Wtd Ex Tobacco	Separate	4.2%	\$158.7	\$0.3	\$68	\$0.8	\$310	\$8.8	\$432	1	3	27
Wellington Smal Cap Value	Separate	2.0%	\$73.9	\$0.0	NA	\$0.0	NA	\$1.1	-	0	0	1
SSGA S&P Mid Cap 400	Commingled	0.6%	\$21.0	\$0.0	NA	\$0.2	NA	\$0.6	CannotD	0	0	12
Champlain Mid Cap	Separate	2.2%	\$81.5	\$0.0	NA	\$0.0	NA	\$0.5	\$1,312	0	0	1
SSGA Russell 2000 ex-Tobacco	Separate	0.5%	\$17.0	\$0.0	NA	\$0.0	NA	\$0.1	\$164	0	0	7
Fixed Income - Total		32.0%	\$1,194.4	\$0.0	NA	\$0.3	\$15,277	\$2.3	\$52,829			
Fixed Income - commingled w/FF		11.8%	\$441.2	\$0.0	CannotD	\$0.0	CannotD	\$1.7	CannotD			
Fixed Income - SMA - w/FF		10.9%	\$ 403.9	\$0.0	NA	\$1.5	\$15,277	\$6.3	\$52,829			
SSGA Barclays Aggregate Index	Commingled	3.1%	\$117.7									
Guggenheim High Yield	Separate	4.0%	\$147.9	\$0.0	NA	\$1.2	\$12,000	\$4.4	\$44,000	0	2	8
Wellington Emerging Market Debt	Commingled	5.1%	\$192.7	\$0.0	NA	\$0.0	NA	\$1.7	CannotD	0	0	1
PIMCO Core Plus	Separate	5.8%	\$216.3	\$0.0	NA	\$0.0	NA	\$1.2	\$600	0	0	2
GAM Unconstrained Bond	Commingled	3.5%	\$130.8	\$0.0	NA	\$0.0	CannotD	\$0.3	CannotD	0	de min	
KDP High Yield	Separate	1.1%	\$39.7	\$0.0	NA	\$0.3	\$3,277	\$0.8	\$8,229	0	1	3
Absolute Return		17.0%	\$647.8	\$0.0		\$0.0		\$7.8	DU			
Grosvenor GIPMS HFOF	Commingled	5.2%	\$193.0	DU	DU	DU	DU	\$7.0	DU	DU	DU	
Mellon EB DV Dynamic Growth Fund	Commingled	2.0%	\$75.3	\$0.0	NA	\$0.0	NA	\$0.8	CannotD	0	0	3
Alternatives		11.0%	\$393.2	\$0.0		\$0.0		\$0.7				
Total Harbourvest Partners	Commingled	1.3%	\$48.9	\$0.0	0	\$0.0	\$0	\$0.7	Sell entire portfolios on secondary market, likely at steep discount to NAV, to eliminate about 1% AUM	0	0	89

Appendix 8) Divestment Restructuring Fee Implications

Asset Class/Investment Manager	Account Type	Assets Under Mgt		Possible to divest in current fund	Divest Restructuring
		(%)	(\$Millions)		Fee Change to divest
Total Plan		100.0%	\$3,743.2		
Equities		40.0%	\$1,507.7		
SSGA S&P 500 Cap Weighted	Commingled	12.1%	\$453.4	NO	Increased Fees to move to SMA
Aberdeen Emerging Mkt Equity	Commingled	6.6%	\$247.1	NO	SMA operating costs meaningfully higher
SSGA S&P Mid Cap 400	Commingled	0.6%	\$21.0	NO	Prohibitively costly to move to SMA- too small \$AUM
SSGA MSCI ACWI ex-US	Commingled	4.2%	\$156.4	NO	Prohibitively costly to move to SMA- too small \$AUM
Wellington Smal Cap Value	Separate	2.0%	\$73.9	YES	Requires discussion of fees, benchmark, guidelines.
SSGA S&P500 Eq. Wtd Ex Tobacco	Separate	4.2%	\$158.7	YES	Fees unchanged
Champlain Mid Cap	Separate	2.2%	\$81.5	YES	Fees unchanged
SSGA Russell 2000 ex-Tobacco	Separate	0.5%	\$17.0	YES	Fees unchanged
Acadian Intl Equity	Separate	4.0%	\$149.1	YES	Fees unchanged
Mondrian Intl Equity	Separate	4.0%	\$149.6	YES	Fees unchanged
Fixed		32.0%	\$1,194.4		
Wellington DAS Plus Beta 10yr	Commingled	2.9%	\$108.9	NO	Cost to move out of this pool, create new fund of 1.
Wellington Emerging Market Debt	Commingled	5.1%	\$192.7	NO	Work with VPIC on most appropriate SMA
SSGA Barclays Aggregate Index	Commingled	3.1%	\$117.7	NO	Prohibitively costly to move to SMA- too small \$AUM
GAM Unconstrained Bond	Commingled	3.5%	\$130.8	NO	Minimal costs to move to different class without FF.
PIMCO Core Plus	Separate	5.8%	\$216.3	YES	Fees unchanged
PIMCO Unconstrained Bond	Separate	2.5%	\$92.9	YES	Fees unchanged
Guggenheim High Yield	Separate	4.0%	\$147.9	YES	Fees Unchanged
KDP High Yield	Separate	1.1%	\$39.7	YES	Fees Unchanged
Absolute Return		17.0%	\$647.8		
Mellon EB DV Dynamic Growth Fun	Commingled	2.0%	\$75.3	NO	Requires SMA-meaningfully higher fees
Alternatives		11.0%	\$393.2		
Total Harbourvest Partners	Commingled	1.3%	\$48.9	NO	Co-invest fund with opt-out; seek non-Harbourvest.

Appendix 9) Exxon-Mobil Response to Vermont Pension Investment Committee Questionnaire
(November 2016)

Question-1: Gross global Scope 1 emissions, percentage covered under a regulatory program, percentage by hydrocarbon resource

A combined response to Questions 1 and 2 is below

Question-2: Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks

In 2015, ExxonMobil's net equity greenhouse gas emissions were 122 million CO₂-equivalent metric tons. Relative to our 2014 performance, our 2015 emissions decreased by approximately 1 million CO₂-equivalent metric tons. This decrease was primarily driven by energy efficiency improvement and asset divestment. The net equity greenhouse gas metric includes direct and imported greenhouse gas emissions and excludes emissions from exports (including ExxonMobil's interest in Hong Kong power through mid-2014, when it was sold). ExxonMobil reports greenhouse gas emissions on a net equity basis for all our business operations, reflecting our percent ownership in an asset.

Energy efficiency

In 2015, energy used in our operations totaled 1.7 billion gigajoules. Energy consumed in our operations generates more than 80 percent of our direct greenhouse gas emissions and is one of our largest operating costs. As such, we have focused on energy efficiency for several decades. Since 2000, we have used our Global Energy Management System in the Downstream and Chemical businesses, and our Production Operations Energy Management System in our Upstream businesses to identify and act on energy savings opportunities.

Through our commitment to energy efficiency, application of structured processes and continued use of a bottom-up approach, we continue to yield industry-leading results. For example, in 2010, 2012 and 2014 refining industry surveys, ExxonMobil's global refining operations achieved first quartile energy efficiency performance.

Flaring

ExxonMobil has invested more than \$3.8 billion at our Upstream facilities around the world on emission reduction efforts, including flare mitigation since 2000. As a result, hydrocarbon flaring volumes from our combined operations in 2015 were 35 percent lower than 2006 levels.

In 2015, flaring volume from our combined Upstream, Downstream and Chemical operations totaled 5.3 million metric tons. This represents an increase of 0.8 million metric tons compared with our 2014 performance.

The increase in flaring was primarily due to operations in Angola, where a third-party-operated liquefied natural gas (LNG) plant was not operating. The increase was partially offset by flaring reductions resulting from the completion of commissioning work at our Papua New Guinea LNG plant and operational improvements at the Usan production field in Nigeria.

ExxonMobil is a charter member of the Global Gas Flaring Reduction Partnership. In addition, we put in place our own parameters, the Upstream Flaring and Venting Reduction Environmental Standard for Projects, in 2005. Our goal is to responsibly avoid routine flaring in new Upstream projects and reduce "legacy" flaring in our existing operations.

For example, our joint venture operations in Qatar have recently begun using a jetty boil-off gas recovery facility to recover natural gas that was previously flared during LNG vessel loading at the marine berths located at the Ras Laffan Port. Approximately 1 percent of the LNG loaded onto the ships evaporates due to the difference in temperature between the LNG and the ship tank. The recovery facility collects the boil-off gas and returns it to the LNG plants to be used as fuel or converted back into LNG. During one year of operation, the facility has recovered more than 500,000 metric tons of gas and reduced LNG vessel loading-related flaring by around 90 percent.

Venting and fugitive emissions

Our venting and fugitive emissions in 2015 totaled 6 million CO₂-equivalent metric tons, which is essentially the same as our 2014 performance. While venting and fugitive emissions, most of which are methane, represent approximately 5 percent of our direct greenhouse gas emissions, we recognize the importance of reducing these emissions. We continue to look for ways to reduce methane and other hydrocarbon emissions in our operations, such as replacing high-bleed pneumatic devices with lower-emission technology and conducting green well completions in targeted Upstream operations.

Cogeneration

ExxonMobil has invested more than \$2 billion since 2001 in support of Upstream and Downstream cogeneration facilities to more efficiently produce electricity and reduce greenhouse gas emissions.

Cogeneration technology captures heat generated from the production of electricity for use in production, refining and chemical processing operations. Due to its inherent energy efficiency, the use of cogeneration leads to reduced greenhouse gas emissions. ExxonMobil's cogeneration facilities enable the avoidance of approximately 6 million metric tons per year of greenhouse gas emissions.

We have interests in approximately 5,500 megawatts of cogeneration capacity in more than 100 installations at more than 30 locations around the world. This capacity is equivalent to the annual energy needed to power 2.5 million U.S. homes. Over the past decade, we have added more than 1,000 megawatts of cogeneration capacity and continue to develop additional investment opportunities.

For example, ExxonMobil began the construction of a new 84-megawatt cogeneration facility at our Singapore refinery's Jurong site. When this facility is completed in 2017, ExxonMobil will have more than 440 megawatts of cogeneration capacity in Singapore, enabling our integrated refining and petrochemical complex to meet all its power needs.

ExxonMobil provides detailed reporting on our greenhouse gas emissions each year in our Corporate Citizenship Report. The following table is from the 2015 report:

Performance data table*	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Page #
Managing climate change risks											
*Greenhouse gas emissions, absolute (net equity, CO ₂ -equivalent emissions), millions of metric tons	139	135	126	123	126	128	126	127	123	122	35
**Direct (excluding emissions from exported power and heat)	129	125	117	114	117	119	118	119	115	114	N/A
*Emissions associated with imported power	10	10	9	9	9	9	8	8	8	8	N/A
Greenhouse gas emission constituents (excludes emissions from exported power and heat), millions of metric tons											
CO ₂ (excluding emissions from exported power and heat)	134	131	122	119	122	124	120	119	116	115	N/A
Methane (CO ₂ -equivalent)	4	3	3	3	3	3	5	7	6	6	N/A
Other gases (CO ₂ -equivalent)	1	1	1	1	1	1	1	1	1	1	N/A
Emissions from exported power and heat	14	14	13	14	13	15	15	16	7	4	N/A
By-region greenhouse gas emissions (net equity, CO ₂ -equivalent emissions), millions of metric tons											
Africa/Europe/Middle East	50	50	45	43	45	45	44	44	43	44	N/A
Americas	69	65	62	62	64	66	68	70	66	65	N/A
Asia Pacific	20	20	19	18	17	17	14	13	14	13	N/A

By-division greenhouse gas emissions (net equity, CO ₂ -equivalent emissions), millions of metric tons											
Upstream	57	53	49	47	50	54	56	58	56	56	N/A
Downstream	60	59	57	56	55	54	51	49	47	45	N/A
Chemical	22	23	20	20	21	20	19	20	20	21	N/A
Carbon dioxide — captured for sequestration, millions of metric tons	N/A	N/A	N/A	N/A	N/A	50	48	59	69	69	34
Greenhouse gas emissions, normalized (net equity, CO ₂ -equivalent emissions), metric tons per 100 metric tons of throughput or production											
Upstream	22.6	21.7	21.0	20.1	20.5	20.7	22.3	22.8	23.4	23.4	35
Downstream	21.8	21.5	21.0	21.0	20.8	20.0	19.6	19.7	19.2	18.9	35
Chemical	60.9	62.1	59.8	60.7	57.9	57.2	56.3	57.0	53.4	52.3	35
Energy use (billion gigajoules)	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.7	36
Energy intensity, normalized versus Global Energy Management System (GEMS) base year (2002) — refining	94.8	94.2	93.7	92.5	91.8	90.9	90.0	90.5	90.3	91.2	N/A
Energy intensity, normalized versus GEMS base year (2002) — chemical steam cracking	90.4	89.6	90.4	88.6	87.6	87.3	88.2	88.8	86.4	86.6	N/A
Hydrocarbon flaring (worldwide activities), millions of metric tons	8.2	8.0	5.7	4.4	3.6	4.1	3.6	3.7	4.5	5.3	36
Cogeneration capacity in which we have interest, gigawatts	4.3	4.5	4.6	4.9	4.9	5.0	5.2	5.3	5.5	5.5	37

¹The net equity greenhouse gas emissions metric was introduced in 2011 as a replacement for the direct equity greenhouse gas metric. Information has been restated back to 2005 according to the new metric. The net equity greenhouse gas metric includes direct and imported greenhouse gas emissions and excludes emissions from exports (including Hong Kong Power through mid-2014). ExxonMobil reports greenhouse gas emissions on a net equity basis for all our business operations, reflecting our percent ownership in an asset.

²The addition of direct emissions and emissions associated with exported power and heat is equivalent to World Resources Institute (WRI) Scope 1.

³These emissions are equivalent to WRI, Scope 2.

Question-3: Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets

As we seek to increase production of oil and natural gas to meet growing global energy demand, we are committed to continuing to take actions to mitigate greenhouse gas emissions within our operations.

ExxonMobil has strong processes designed to improve efficiency, reduce emissions and contribute to effective long-term solutions to manage climate change risks. These processes include, where appropriate, setting tailored objectives at the business, site and equipment levels, and then stewarding progress toward meeting those objectives. Based on decades of experience, ExxonMobil believes this rigorous bottom-up approach is a more effective and meaningful way to drive efficiency improvement and greenhouse gas emissions reduction than through high-level corporate targets. We believe that continuing to use this approach will yield further improvements in all sectors of our business.

In the near term, we are working to increase energy efficiency while reducing flaring, venting and fugitive emissions in our operations. In the medium term, we are deploying proven technologies such as cogeneration and carbon capture and sequestration where technically and economically feasible. Longer term, we are conducting and supporting research to develop breakthrough, game-changing technologies.

Since 2000, ExxonMobil has spent approximately \$7 billion on technologies to reduce emissions and in the development of lower-emission energy solutions.

Question-4: Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions

A combined response to Questions 4 and 6 can be found under Question 6 below

Question-5: Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves

ExxonMobil does not estimate the potential quantity of carbon dioxide that may be created when our proved reserves are produced, converted to finished products and used by consumers. According to the International Energy Agency, approximately 90 percent of petroleum-related greenhouse gas emissions attributable to operations such as ours are generated when customers use our products (indirect emissions) and the remaining 10 percent are generated by industry operations (direct emissions).

Question-6: Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets

By 2040, the world's population is projected to reach 9 billion — up from about 7.2 billion today — and global GDP will have more than doubled. As a result, we see global energy demand rising by about 25 percent from 2014 to 2040. In order to meet this demand, we believe all economic energy sources, including our existing hydrocarbon reserves, will be needed. We also believe that the transition of the global energy system to lower-emissions sources will take many decades due to the system's enormous scale, capital intensity and complexity. As such, we believe that none of our proven hydrocarbon reserves are, or will become, stranded.

ExxonMobil's long-range annual forecast, *The Outlook for Energy*, examines energy supply and demand trends for approximately 100 countries, 15 demand sectors and 20 different energy types. The Outlook forms the foundation for the company's business strategies and helps guide our investment decisions. In response to projected increases in global fuel and electricity demand, our 2016 Outlook estimates that global energy-related CO₂ emissions will peak around 2030 and then begin to decline. A host of trends contribute to this downturn — including slowing population growth, maturing economies and a shift to cleaner fuels like natural gas and renewables — some voluntary and some the result of policy.

ExxonMobil believes the long-term objective of effective policy is to reduce the risks posed by climate change at minimum societal cost, in balance with other societal priorities such as poverty eradication, education, health, security and affordable energy.

We fundamentally believe that free markets, innovation and technology are essential to addressing the risks of climate change. Success in developing and deploying impactful technologies will highly depend on governments creating a policy landscape that enables innovation and competition. Policies need to be clear and guard against duplicative, overlapping and conflicting regulations, which send mixed signals to the market and impose unnecessary costs on consumers. We believe that effective policies are those that:

- Promote global participation;
- Let market prices drive the selection of solutions;
- Ensure a uniform and predictable cost of greenhouse gas emissions across the economy;
- Minimize complexity and administrative costs;
- Maximize transparency; and
- Provide flexibility for future adjustments to react to developments in climate science and the economic impacts of climate policies.

Policies based on these principles minimize overall costs to society and allow markets to help determine the most effective and commercially viable solutions.

Given the wide range of societal priorities and limited global resources, all policies, including climate change policy, must be as economically efficient as possible. ExxonMobil believes that market-based systems that impose a uniform, economy-wide cost on greenhouse gas emissions are more economically efficient policy options than mandates or standards. This is because market-based policies more effectively drive consumer behavior and technology innovation, while mandates and standards eliminate consumer choice and can perpetuate ineffective technologies.

Since 2009, ExxonMobil has advocated the view that a properly designed, revenue-neutral carbon tax is a more effective market-based option than a cap-and-trade approach. A carbon tax is more transparent, can be implemented in existing tax infrastructure, avoids the complexity of creating and regulating carbon markets where none exist and reduces greenhouse gas emissions price volatility, thus delivering a clearer, more consistent long-term market price signal.

Only through a sound global policy framework will the power of markets and innovation enable society to find cost-effective solutions to address the risks of climate change, while at the same time continuing to address the many other challenges the world faces.

ExxonMobil addresses the potential for future climate change policy, including the potential for restrictions on emissions, by estimating a proxy cost of carbon. This cost, which in some geographies may approach \$80 per ton by 2040, has been included in our Outlook for several years. This approach seeks to reflect potential policies governments may employ related to the exploration, development, production, transportation or use of carbon-based fuels. We believe our view on the potential for future policy action is realistic and by no means represents a "business-as-usual" case. We require all of our business lines to include, where appropriate, an estimate of greenhouse gas-related emissions costs in their economics when seeking funding for capital investments.

We evaluate potential investments and projects using a wide range of economic conditions and commodity prices. We apply prudent and substantial margins in our planning assumptions to help ensure competitive returns over a wide range of market conditions. We also financially stress test our investment opportunities, which provides an added margin against uncertainties, such as those related to technology development, costs, geopolitics, availability of required materials, services and labor. Stress testing further enables us to consider a wide range of market environments in our planning and investment process.

Question-7: Revenues from renewable and alternative energy, average annual during trailing three years ending June 30, 2016

Recognizing the limitations associated with most existing low greenhouse gas emissions energy technologies, particularly in delivering the necessary economy and scale, we are conducting fundamental research to develop low greenhouse gas emission energy solutions that have the potential to be economically feasible without subsidies, standards or mandates. As society transitions to lower greenhouse gas emission energy solutions, technological advancements that change the way we produce and use energy will be instrumental in providing the global economy with the energy it needs while reducing greenhouse gas emissions. ExxonMobil is pioneering scientific research to discover innovative approaches to enhance existing and develop next-generation energy sources.

Question-8: R&D spending on renewable, alternative and low-carbon energy and technologies (including natural gas, carbon capture technologies, and energy efficiency improvements, average annual during trailing three years ending June 30, 2016.

Since our merger with XTO Energy in 2010, ExxonMobil has been one of the largest natural gas producers in the world. Coupled with our leadership in the development and production of liquefied natural gas (LNG), ExxonMobil is well-positioned to meet growing demand for this clean energy source. We spend approximately a quarter of a billion dollars per year on research and development on technologies to enable the safe development of natural gas. In addition, since 2000, ExxonMobil has spent nearly \$7 billion on technology to reduce greenhouse gas emissions, including on energy efficiency, cogeneration, flare reduction, carbon capture and sequestration, and to research lower-emission energy solutions.

Question-9: R&D spending on renewable energy technologies, Average Annual during trailing three years ending June 30, 2016

ExxonMobil's Emerging Technologies program brings together executives, scientists and engineers from across ExxonMobil's businesses to identify and evaluate technology research opportunities with a long-term strategic focus. The Emerging Technologies team seeks to understand a wide range of technology options and how they may impact the global energy system in the near term and as far as 50 years into

the future. Our evaluation extends well beyond our base business and near-term focus. If a technology could have a material effect on the future of energy, we insist on knowing about it and understanding the related science. Understanding the fundamental science serves as a basis for our broader research efforts and may lead to further technology development aimed at practical application, such as our work on biofuels. Additionally, this awareness informs our internal analysis of the global energy landscape as reflected and encapsulated in our annual Outlook for Energy.

At the center of our research is ExxonMobil's Corporate Strategic Research laboratory, a fundamental research institution with approximately 150 Ph.D. scientists and engineers focused on addressing the company's long-range science needs. The laboratory's scientists are internationally recognized experts in their field. Our research portfolio includes a broad array of programs, including biofuels, carbon capture and sequestration, alternative energy and climate science.

In addition to in-house research, the Corporate Strategic Research laboratory conducts strategic research with approximately 80 universities around the world on next-generation technology. For example, in 2014, ExxonMobil signed an agreement to join the Massachusetts Institute of Technology Energy Initiative, a collaboration aimed at working to advance and explore the future of energy. ExxonMobil was also a founding member in 2002 of the Global Climate and Energy Project at Stanford University, which included a \$100 million commitment to develop fundamental, game-changing scientific breakthroughs that could lead to lower greenhouse gas emissions and a less carbon-intensive global energy system. Other university collaborations cover a wide range of scientific topics, from understanding the impacts of black carbon and aerosols at the University of California, Riverside to photovoltaics at Princeton University.

Advanced biofuels

ExxonMobil funds a broad portfolio of biofuels research programs including ongoing efforts to develop algae-based biofuels, as well as programs for converting non-food based feedstocks, such as whole cellulosic biomass, algae-based feedstocks and cellulose-derived sugars, into advanced biofuels. We believe that additional fundamental technology improvements and scientific breakthroughs are still necessary in both biomass optimization and the processing of biomass into fuels. Specifically, scientific breakthroughs are needed to ensure that advanced biofuels can be scaled up economically and produced with the desired environmental benefit of lower life cycle greenhouse gas emissions.

Our advanced biofuels research includes joint research collaborations with Synthetic Genomics Inc. (SGI), Renewable Energy Group, the Colorado School of Mines, Michigan State University, Northwestern University and the University of Wisconsin.

There are numerous benefits of using algae for biofuels production. Algae can be cultivated on land unsuitable for other purposes with water that cannot be used for food production. In addition to using non-arable land and not requiring the use of fresh water, algae could also potentially yield greater volumes of biofuels per acre than other sources. We also know that algae can be used to manufacture biofuels similar in composition to today's transportation fuels.

In addition, growing algae can provide an environmental benefit. Algae consume CO₂ and have the potential to provide greenhouse gas mitigation benefits versus conventional fuels. In 2012, researchers from MIT, ExxonMobil and SGI published an assessment of algal biofuels in the peer-reviewed journal *Environmental Science and Technology*, which concluded that if key research hurdles are overcome, algal biofuels will have about 50% lower life cycle greenhouse gas emissions than petroleum-derived fuel.

In contrast, there is a robust debate in the academic research community regarding the carbon footprint of first generation biofuels, which the EPA defines as those generated from edible crops (such

as corn). Many peer-reviewed papers in the scientific literature suggest that the direct life cycle greenhouse gas emissions are lower than fossil fuels, but that indirect consequences of first generation biofuel development, including changes in forest and agricultural land use change, may result in higher total greenhouse gas emissions than petroleum-derived fuels.

For these reasons, ExxonMobil is pursuing research into second generation biofuels to determine how they may best fit into our energy future. Second generation biofuels are defined as those produced from non-edible crops, crop residues, or biologically generated gas and therefore do not take away from the total food supply. Examples include algae, corn stover, switchgrass or methane emitted from microbial activity in landfills.

ExxonMobil and SGI are carrying out a basic research program to develop advanced biofuels from algae. Our objective is to develop advanced algae biofuels options and identify the best pathways to make these groundbreaking technologies available to consumers. We have been working with SGI since 2009.

We face some significant technical hurdles before biofuels production from algae will be possible at a significant commercial scale. To overcome these challenges, we are working to answer some basic questions such as:

- Why do algae utilize a relatively small amount of available light energy?
- What tools can be used to improve light utilization efficiency of algae and to improve production characteristics?
- How do you develop an organism that will produce significantly more bio oil?

The central challenge is that algae naturally harvest significantly more light than they can effectively convert to biofuels. Only a fixed amount of light hits the surface of a pond, and our goal is for the algae to use this light as efficiently as possible. The amount of wasted sunlight varies greatly depending on the algae species and growth conditions, but can be as high as 80 percent or more. ExxonMobil and SGI are conducting fundamental research to decrease the amount of wasted sunlight and increase biomass productivity by improving the photosynthetic efficiency of individual algae cells. To achieve this objective, the SGI team is working to engineer algae cells that will absorb only the amount of light that they can effectively use.

Carbon capture and sequestration

Carbon capture and sequestration (CCS) is the process by which CO₂ gas that would otherwise be released into the atmosphere is captured, compressed and injected into underground geologic formations for permanent storage. With a working interest in approximately one-third of the world's total CCS capacity, ExxonMobil is a leader in one of the most important next-generation low-carbon technologies. In 2015, we captured 6.9 million metric tons of CO₂ for sequestration.

Over the past 15 years, ExxonMobil has invested nearly \$400 million in researching, developing and applying carbon capture and storage technology in association with our projects, with significant additional investment expected at our Gorgon project in coming years.

ExxonMobil believes the greatest opportunity for future large-scale deployment of CCS will be in the natural gas-fired power generation sector. While CCS technology can be applied to coal-fired power generation, the cost to capture CO₂ from that source is about twice that of natural gas power generation. In addition, because coal-fired power generation creates about twice as much CO₂ per unit of electricity generated, the geological storage space required to sequester the CO₂ produced from coal-fired generation is about twice that associated with gas-fired generation.

ExxonMobil is conducting proprietary, fundamental research to develop breakthrough carbon capture technologies that have the potential to be economically feasible without government subsidies, standards or mandates.

As an example, ExxonMobil's scientists have been pursuing new technology that could reduce the costs associated with current CCS processes by increasing the amount of electricity a power plant produces while simultaneously delivering significant reductions in carbon dioxide emissions. At the center of ExxonMobil's technology application is a carbonate fuel cell.

Laboratory tests have demonstrated that the unique integration of carbonate fuel cells and natural gas power generation captures carbon dioxide more efficiently than current, conventional capture technology. During the conventional capture process, a chemical reacts with the carbon dioxide, extracting it from power plant exhaust. Steam is then used to release the carbon dioxide from the chemical – steam that would otherwise be used to move a turbine, thus decreasing the amount of power the turbine can generate.

Using fuel cells to capture carbon dioxide from power plants results in a more efficient separation of carbon dioxide from power plant exhaust and an increased output of electricity. Power plant exhaust is directed to the fuel cell, replacing air that is normally used in combination with natural gas during the fuel cell power generation process. As the fuel cell generates power, the carbon dioxide becomes more concentrated, allowing it to be more easily and affordably captured from the cell's exhaust and stored. ExxonMobil's research indicates that a typical 500 megawatt (MW) power plant using a carbonate fuel cell may be able to generate up to an additional 120 MW of power while current CCS technology consumes about 50 MW of power.

ExxonMobil's research indicates that by applying this technology, more than 90 percent of a natural gas power plant's carbon dioxide emissions could be captured. Natural gas is already the least carbon-intensive of the major hydrocarbon-based energy sources.

In addition, carbonate fuel cell technology has the potential to generate significant volumes of hydrogen. Simulations suggest that the new technology can produce up to 150 million cubic feet per day of hydrogen while capturing carbon dioxide from a 500 MW power plant. To put that in perspective, a world-scale steam methane reforming hydrogen plant produces around 125 million cubic feet per day. In addition, synthesis gas, or syngas, composed of hydrogen and carbon monoxide, can be produced that can be upgraded to other useful products such as methanol, olefins, or higher molecular weight hydrocarbons for transportation fuels or lubricants.

In May 2016, ExxonMobil and FuelCell Energy, Inc., announced an agreement to pursue this novel technology in power plant carbon dioxide capture through a new application of carbonate fuel cells, and in October of the same year, we jointly announced the selection of a location to test it at the James M. Barry Electric Generating Station in Alabama. This fuel cell carbon capture solution could substantially reduce costs and lead to a more economical pathway toward large-scale carbon capture and sequestration globally.

University Collaborations

ExxonMobil is working with approximately 80 universities around the world to explore next-generation energy technologies. Since 2002, we have supported long-term collaborative scientific research related to greenhouse gas emissions at Stanford University, and more recently, we have begun collaborations with Princeton University, Massachusetts Institute of Technology (MIT), the University of Texas at Austin, and Georgia Institute of Technology as part of our commitment to finding meaningful and scalable solutions to meet global energy demand.

Stanford University

In 2002, ExxonMobil made a \$100 million commitment to Stanford's Global Climate and Energy Project (GCEP), which is focused on identifying breakthrough energy technologies. GCEP's strategy is to take a long view by supporting game-changing research with a 10- to 50-year time horizon; its goal is to keep the innovation pipeline filled with new ideas and new approaches that will ultimately make efficient, environmentally sustainable, low-cost energy available worldwide. Since its launch, GCEP has built a diverse research portfolio of innovative technologies in areas such as solar power, biomass energy, advanced combustion, carbon capture and sequestration, transportation and the electrical grid. GCEP-supported research has led to significant advances in cutting-edge energy technologies ranging from improved light management techniques and nanoscale designs for increasing the efficiency of photovoltaic systems, to novel microbial bioreactors that use renewable energy to produce methane and other fuels. Overall, GCEP has supported 80 scientific programs led by 165 faculty members and 39 research institutions across the globe. GCEP researchers have also published more than 500 papers in leading journals and given more than 700 presentations at conferences.

Massachusetts Institute of Technology

In October 2014, ExxonMobil became a founding member of the MIT Energy Initiative and will contribute \$25 million over five years to support research and establish 10 graduate energy fellowship appointments each year. The MIT Energy Initiative is a unique collaboration aimed at working together to advance and explore the future of energy focused on new energy sources and more efficient use of conventional energy resources. Since launching the collaboration with MIT, the joint research program has made inroads into several areas, including bio-inspired catalysts for the petrochemical industry and computational modeling to better understand the properties of iron and iron-based alloys used in pipelines. The program has also enabled ExxonMobil to expand research efforts to emerging areas like photovoltaic and nuclear power, as well as enhance our understanding of energy options and the interactions between them.

ExxonMobil has also joined the MIT Energy Initiative's Carbon Capture, Utilization, and Storage (CCUS) Center, one of eight Low-Carbon Energy Centers first called for in MIT's Plan for Action on Climate Change in October 2015. It was established to advance research on specific, key technologies to address climate change such as electric power systems, energy bioscience, energy storage, materials for energy and extreme environments, advanced nuclear energy systems, nuclear fusion and solar energy, in addition to CCUS.

Princeton University

In September 2016, ExxonMobil and Princeton University announced the selection of five research projects associated with their partnership focused on energy technologies. The projects will center on solar and battery technologies, plasma physics, Arctic sea-ice modeling, and the impact of carbon dioxide absorption on the world's oceans. This announcement followed ExxonMobil's June 2015 commitment to contribute \$5 million to Princeton E-ffiliates Partnership, a program administered by Princeton University's Andlinger Center for Energy and the Environment that fosters research in sustainable energy and environmental solutions. E-ffiliates promotes collaboration between industry and academia to search for energy and environmental breakthroughs. ExxonMobil scientists collaborated with Princeton professors to identify areas with the most scientific potential, particularly ones that build on the university's existing strengths and interests in emerging energy.

The University of Texas at Austin

In July 2016, ExxonMobil announced a \$15 million investment as a leading member of the University of Texas at Austin Energy Institute to pursue technologies to help meet growing energy demand while reducing environmental impacts and the risk of climate change. The joint research initiative will study transformational energy innovations including integrating renewable energy sources into the current supply mix and advancing traditional energy sources in ways that improve efficiency and reduce impacts on water, air and climate. Research projects are expected to cover a range of emerging

technologies, and will take advantage of the university's capabilities in renewable energy, battery technologies, carbon capture and power grid modeling. Core strengths in advanced computing, environmental management and additive manufacturing may be applied to improve traditional energy sources.

Georgia Institute of Technology

Scientists from ExxonMobil and the Georgia Institute of Technology (GT) have developed a potentially revolutionary new technology that could significantly reduce the amount of energy and emissions associated with manufacturing plastics. Results of the research were published in the August 19, 2016, edition of the professional journal Science.

The new process uses a form of reverse osmosis to separate similarly sized organic molecules. It effectively relies on a molecular-level filter that separates chemical building blocks for plastics from complex hydrocarbons at low temperatures and pressures. Working with Dr. Ryan Lively, assistant professor in GT's School of Chemical & Biomolecular Engineering, and a GT post-doctoral researcher, the team successfully demonstrated that chemical compounds known as aromatics can be separated by pressing them through a synthetic membrane they developed that acts as a high-tech sieve.

The new process may enable chemical producers to separate aromatics without heating the chemical mixture, greatly reducing the amount of energy consumed and emissions generated during the current commercial manufacturing process. ExxonMobil believes the new membrane has potential for commercialization and integration into industrial chemical separation processes since it is made from common materials, known as polymer building blocks. The technology still faces a number of challenges before it can be considered for commercialization and use at an industrial scale. The membranes used in the process will need to be tested under more challenging conditions, as industrial mixtures normally contain multiple organic compounds and may include materials that can foul membrane systems. The researchers must also learn to make the material consistently and demonstrate that it can withstand long-term industrial use.

This breakthrough could reduce annual carbon dioxide emissions by 45 million tons, which is equivalent to the annual energy-related carbon dioxide emissions of about five million U.S. homes. It could also reduce global energy costs used to make plastics by up to \$2 billion a year. As our research into this specific chemical process advances, we hope to learn more about how this technology could be used in other applications to achieve the same type of efficiency and emissions-reductions results, and potentially reduce our manufacturing footprint even further.

For additional information, please see the following:

- Corporate Citizenship Report – Managing Climate Risks:
<http://corporate.exxonmobil.com/en/community/corporate-citizenship-report/managing-climate-change-risks>
- ExxonMobil's perspectives on climate change:
<http://corporate.exxonmobil.com/en/current-issues/climate-policy/climate-perspectives>
- ExxonMobil Outlook for Energy: A View to 2040
<http://corporate.exxonmobil.com/en/energy/energy-outlook>
- Credit natural gas for falling emissions, rising economy – ExxonMobil blog:
<https://energyfactor.exxonmobil.com/perspectives/natural-gas-falling-emissions/>
- ExxonMobil's Collegiate Collaboration – ExxonMobil blog:
<https://energyfactor.exxonmobil.com/perspectives/exxonmobil-collegiate-collaboration/>

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FT

More on Active v. Passive. Good Piece. Note this is large cap focused.

April 17, 2017

By John Authers

Asset Allocation: Active fund managers can add value but price is still too high

Clever handling of big market moments can help outpace passive investment rivals
“Smart Money”

What exactly are the arguments for active management? The debate is back in full force after the Standard & Poor’s SPIVA service showed last week that 92 per cent of US large-cap mutual funds had failed to match their benchmark over 15 years, and that only 34 per cent of funds on offer 15 years ago were still available.

That prompted Capital Group, the biggest active mutual fund manager, to claim that the survey was flawed and that “investors don’t need thousands of funds to build a bigger nest egg, just a few good ones”.

Indexing creates the potential for distortions and misallocated capital; it makes for weaker price discovery. But while indexing may create broader problems for markets, a paradox is at work. It is still in the interests of investors to gain the best expected return for their money, for a given level of risk, and that means indexing.

So what arguments are left? First, enough investors have beaten the market regularly to suggest it cannot be by chance. Those investors tend to have several facets in common, such as concentrated portfolios, a willingness to depart from the benchmark, and managers with a substantial stake in their own funds.

Second, there is the contention that index funds will plummet with the market in a downturn, while active funds can take evasive action. And there is a (reasonable) belief that index funds are dumb. Active funds can wisely avoid bubbles and hot stocks.

So, for an unscientific experiment, let us compare Capital Group's Growth Fund of America, the biggest active fund, with the SPY exchange traded fund, which tracks the S&P 500, and the Fidelity Magellan fund, which for decades was the world's biggest active fund.

Over five years, the Growth Fund of America has returned 88.1 per cent, slightly ahead of SPY and Magellan, on 84.8 and 80.2 per cent, respectively. There was no significant difference in volatility.

But over 24 years, Capital's advantage is impressive. It has compounded at 10.8 per cent per annum, against 9.2 per cent for SPY and 7.9 per cent for Magellan. That works out, with compound interest, at a 344 percentage point advantage over SPY.

All of this, however, is thanks to Capital's nimble handling of the late 1990s bull market and the burst dotcom bubble that followed it. For the five years from 1996 to the end of 2000, Growth Fund returned 194 per cent, far ahead of SPY's 128.4 percent.

It did this by loading up on growth stocks as the bubble came to a head, and then shifting into enough of the right stocks that its decline from there was no worse than that of the market. The hope of great timing like this is why people try an active manager rather than an index tracker. Good timing at critical junctures can lead to years of compounded outperformance.

The problem is that timing one market turn does not predict that it will handle the next market turn. For the five years starting with the S&P's top in October 2007, Growth Fund was flat, while SPY made 4.3 per cent (and Magellan dipped by almost 15 percent).

Since the top in 2007, indeed Growth Fund's performance is almost identical to SPY's. Effectively, they have both given their investors exactly the same thing (SPY is very slightly ahead). It is just that Capital went to much more trouble to come to the same result.

What of the argument that active funds can avoid downturns? There is no evidence for it. From top to bottom after 2000, Growth Fund dropped 46.15 per cent, against 47.5 per cent for SPY. From top to bottom after 2007, Growth Fund lost 51.7 per cent, versus 55.2 per cent for SPY. (Magellan did much worse both times). These are marginal outperformances, thanks to Growth Fund's small cash holdings. It offered no meaningful drawdown insurance; in both incidents, its investors suffered severe losses.

What of the argument that some managers are indeed skilled? It may well be true, but it is prohibitively hard to find them. Bear in mind that Magellan, an also-ran over the past two decades, had over the previous three decades earned a reputation as the best actively managed fund of all time. And it takes a very long time before we can be sure that outperformance is due to skill rather than randomness and luck.

Victor Haghani of Elm Group offers this illustration. You have two coins, one fair, and one 60 per cent weighted towards heads. To be 95 per cent sure you know which is the weighted coin, you would need to toss it 143 times. To spot an active manager who adds significant value on a risk-adjusted basis, compared with others who in the long run merely match the index, could take far longer than a manager's working lifetime.

What of the argument that active managers are smarter at managing risk? Growth Fund holds all the Fang stocks (Facebook, Amazon, Netflix and Google) among its 10 largest holdings. About 15.4 per cent of the fund is in the internet sector.

This shows good recent stock picking, but it is scarcely a recipe to survive the next downturn, unless it is prepared to sell very nimbly. As its stake in Amazon, about 6 per cent of its portfolio, is worth about \$8bn, it will be hard to sell in a hurry.

As for asset allocation, it has 93.6 per cent in stocks, 1.5 per cent in cash and a small holding of bonds. In another Lehman-type event, it should beat a tracker fund by a percentage point, but that is about it.

So, active managers can add value, particularly if they time market turns well. But they are prohibitively difficult to identify, and they do not provide drawdown insurance. The rise in indexing does indeed create many reasons for worry — but at present active funds are charging far too much for the public good of market discovery. It is hard to see why investors should be prepared to pay them that price.

C-13

Memorandum

DATE: May 15, 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 reconvened on January 4, 2017 to commence the first year of the 2017-2018 legislative session. 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.

SACRS Support Bills

SACRS is currently supporting two bills:

- **SB 671 (Moorlach)** would make technical amendments to clarify the section of the CERL that permits a county and district to make an advance payment of all or part of the county's or district's estimated annual contributions to the retirement fund (including OCERS); and
- **AB 526 (Cooper)** would make the Sacramento County Employees Retirement System a district under the CERL.

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.
- **AB 1310 (Travis Allen)** would require the retirement board of a public retirement system, including county systems under the CERL, to disclose the unfunded liability and healthcare debt of the system on each member statement provided to members of the system.
- **SCA 8 (Moorlach)** 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.
- **SCA 10 (Moorlach)** would prohibit a government employer from providing public employees any retirement benefit increase until that increase is approved by a $\frac{2}{3}$ vote of the electorate of the applicable jurisdiction and that vote is certified.

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.
- **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.
- **AB 1025 (Rubio)** would repeal Government Code section 1099 which currently prohibits a public officer, including an appointed or elected member of a governmental board, from simultaneously hold two public offices that are incompatible.
- **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.
- **SB 302 (Mendoza)** 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.

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% to secure CalPERS' securities lending agreements.
- **SB 32 (Moorlach)** would create the Citizens' Pension Oversight Committee to serve in an advisory role to the CalPERS and CalSTRS Boards of Administration, and would require the committee to annually review and report to the public the actual pension costs and obligations of CalPERS and CalSTRS.
- **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.
- **SB 560 (Allen)** would require CalPERS and CalSTRS to consider financial climate risk, as defined, in their management of any funds they administer, and to include in their CAFRs the financial climate risks of their investments.

Divestment Proposals (CalPERS and CalSTRS Only)

- **AB 20 (Kalra)** would prohibit CalPERS and CalSTRS from investing in companies constructing or funding the construction of the Dakota Access Pipeline.
- **AB 946 (Ting)** would prohibit new investments and require liquidation of existing investments of CalPERS and CalSTRS in border wall construction companies.
- **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.

Attachment

Submitted by:

A handwritten signature in blue ink that reads "Gina M. Ratto". The signature is written in a cursive style with a horizontal line underneath it.

Gina M. Ratto
General Counsel

**2017-2018 LEGISLATIVE SESSION BILLS OF INTEREST
LEGISLATIVE UPDATE (MAY 15, 2017) – ATTACHMENT**

AB 20 (Kalra): *This bill applies only to CalPERS and CalSTRS.* This bill would prohibit the boards of administration of CalPERS and CalSTRS on or after January 1, 2018, from making additional investments or renewing investments in a company constructing or funding the construction of the Dakota Access Pipeline, and would require the boards to liquidate their investments in these companies on or before July 1, 2018.

AB 168 (Eggman): Existing law imposes various restrictions on employers with respect to applicants for employment. This bill would prohibit an employer, including state and local government employers, from seeking salary history information about an applicant for employment, except as otherwise provided.

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.

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.

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.

AB 526 (Cooper). This bill would make the Sacramento County Employees Retirement System a district under the CERL.

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.

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.

AB 679 (Cooley). *This bill applies only to CalPERS.* Existing law authorizes CalPERS to enter into securities loan agreements whereby a legal owner (lender) agrees to lend specific marketable corporate or government securities for no more than one year, and the lender retains the right to collect from the borrower all dividends, interest, premiums, rights and other distributions. This bill would require a borrower with respect to any security loan agreement to provide CalPERS with collateral in the form of cash, US government debt securities, or other specified forms of collateral, and would require that the amount of the collateral be at least 102% of the market value of the loaned securities.

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.

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.

AB 1310 (Travis Allen). This bill would require the retirement board of a public retirement system, including county systems under the CERL, to disclose the unfunded liability and healthcare debt of the system on each member statement provided to members of the system.

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.

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.

SB 24 (Portantino). The Political Reform 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.

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.

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.

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.

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.

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.

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.

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.

SB 671 (Moorlach). SB 671 would clarify the section of the CERL that permits a county and district to make an advance payment of all or part of the county's or district's estimated annual contributions to the retirement fund. The bill would 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 contributions for an additional year or years if certain requirements are satisfied, and would make the prepayment option available to all districts that are members of any county retirement systems.

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.

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 $\frac{2}{3}$ 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.

I-2

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: Suzanne Jenike, Assistant CEO External Operations
SUBJECT: **AOCDS POST MANDATORY TRAINING BENEFIT CORRECTION**

Recommendation

Take appropriate action.

Background/Discussion

Certain employees of the OC Sheriff's Department in certain bargaining units are required to complete a minimum 24 hours of specified training every two years in order to remain POST certified with the State of California ("mandatory POST training"). 67% of employees in the Sheriff's Deputy bargaining unit who retired between 2006 and 2017 completed mandatory POST training outside of their normal work schedules and were paid overtime as a result.

Overtime associated with mandatory POST training is pensionable and OCERS has included it in the calculation of a retiring member's final average salary. Members with one-year measuring periods could potentially have up to 24 hours of salary added to their final average salary and members with three-year measuring periods could receive up to 48 hours added to their final average salary. The County's transmittal files to OCERS however do not distinguish between mandatory POST training, which is pensionable, and other types of mandatory training that is not pensionable; and employee and employer retirement contributions are not paid on the pensionable amounts. OCERS Member Services staff has access to the Sheriff's Department payroll system so that the hours can be verified manually, but this has resulted in an extremely burdensome task for OCERS.

In January 2017 it came to OCERS' attention that there was a discrepancy in the number of the mandatory POST training hours that Member Services staff were including in retiring members' final average salary. In response to this development, OCERS staff examined the accounts of every Sheriff's Department safety member who retired in the last 11 years, and found that 140 retired members had mandatory POST training hours in excess of the legally allowed amount included in their final average salary, resulting in overstated monthly benefits. In addition, we identified 70 members who did not have enough mandatory POST training hours included in their final average salary calculation, resulting in an underpayment of their monthly benefit.

We immediately corrected our procedures for new retirees so that all members retiring as of January 2017 are being properly credited with the appropriate amount of mandatory POST training hours.

For the 140 members that have been overpaid, the monthly benefit impact is summarized as follows:

- 92 members have been overpaid in the range of \$1 to \$50 per month
- 24 members have been overpaid in the range of \$51 to \$100 per month
- 23 members have been overpaid in the range of \$101 to \$250 per month
- 1 member has a monthly benefit overstated by \$376

Ten of the 140 members are subject to Domestic Relations Orders (DRO) and their ex-spouses' monthly benefits will also be impacted.

On Friday April 21, 2017, OCERS mailed letters to the 150 payees (140 members and ten former spouses) explaining that their benefits are overstated. Member Services staff also reached out to each individual via telephone. The letter included information as to the range in amount of the overpaid monthly allowance as well as details of the options being presented to the Board of Retirement for consideration at the May 15, 2017 meeting. Additionally, a letter was sent to the 70 members whose benefits are understated.

The total amount overpaid from 2006 to 2016 totals approximately \$300,000. OCERS is required to collect the overpayment from the members or their employer and restore the fund. Staff discussed the overpayment with Segal Consulting and Segal confirmed that if the full overpayment were collected from the County, the amount would likely have little to no impact on the County's unfunded actuarial accrued liability ("UAAL") or future contribution rates.

There are several decision points for the Board. Staff recommends that the Board considers all of the following and that it hears from members and other stakeholders at its meeting on May 15, 2017, but recommends that the Board postpones action until its June 12, 2017 meeting:

- A. Correction of Underpayments – Board decision points:
 - 1. Correct (increase) monthly benefit going forward
 - 2. Reimburse members the amount underpaid retroactive to effective date of retirement
 - i. With or without interest? At what rate?
 - 3. Collect underpayment either by:
 - i. Billing the County for entire amount of underpaid benefits; or
 - ii. Rolling the amount into the County's UAAL
- B. Correction of Overpayments – Board decision points:
 - 1. Correct (decrease) monthly benefit going forward
 - a. Establish the effective date for correction
 - 2. Collect interest on the overpayment (approximately \$300,000)?
 - a. With or without interest? At what rate?
 - 3. Determine from whom to collect:
 - a. Collect entire overpayment from the members; or
 - b. Collect overpayments for only the preceding 3 years (approximately \$222,000) from members, and roll residual amount into the County's UAAL; or

- c. Collect entire overpayment from the County either by:
 - i. Billing the County; or
 - ii. Rolling the amount into the County's UAAL.
- C. Direct staff to work with the County payroll department so that:
 - a. The employer properly reports pensionable pay items to OCERS in the future and employer; and
 - b. Employee and employer contributions are charged and collected on those pensionable pay items.

In the event a member disagrees with any part of the decision the Board ultimately makes on the above issues the member's recourse will be to file a Petition for Writ of Mandamus in Orange County Superior Court.

Submitted by:

Suzanne Jenike
Assistant CEO, External Operations



AOCDS POST Training Benefit Correction

Presented on May 15, 2017

by

Catherine Fairley, Member Services Director

- History
- Overview of Issue
- Members Impacted
- Options to Consider
- Corrective Action
- Moving Forward

- OC Sheriff's Department safety employees are required to complete a minimum of 24 hours of POST Training every two years
- Majority do the training outside normal work schedule
- Up to 24 hours for Tier 1 employees (12 month measuring period) and 48 hours for Tier 2 employees (36 month measuring period) is considered pensionable

These hours are not reported to OCERS biweekly by the Sheriff's Department. This results in:

- Manual, cumbersome process for OCERS at retirement
- No distinguishing between pensionable overtime and non-pensionable overtime
- No employee retirement contributions paid for pensionable overtime
- No employer retirement contributions paid on pensionable overtime amounts

- In early 2017, OCERS management discovered there were inconsistencies in the number of POST Training hours being manually added to Final Average Salary (FAS)
- Staff reviewed the FAS calculations of every Sheriff's Department safety member who retired from 2006 - 2016
- Out of 800+ retirees: 140 benefits overstated, 71 benefits understated

- 140 members are receiving overstated benefits
 - 92 members are in the \$1 - \$50 per month range
 - 24 members are in the \$51 - \$100 per month range
 - 23 members are in the \$101 - \$250/month range
 - 1 member has a monthly benefit overstated by \$376
- 10 ex-spouse benefits are also overstated

- 69 members and 2 surviving spouses are receiving understated benefits
 - 57 members and 2 surviving spouses are in the \$1 - \$50 per month range
 - 12 members are in the \$51 - \$100 per month range
- 4 ex-spouse benefits are also understated

Correction of Underpayments:

1. Correct (increase) monthly benefit going forward
2. Pay members the amount of the underpayment, retroactive to the effective date of retirement
 - *With or without interest? At what rate?*
3. Bill County for entire amount of underpaid benefits; or
4. Roll the cost into the County's UAAL

Options to Consider

Correction of Overpayments:

1. Correct (decrease) monthly benefit going forward; and
2. Collect entire overpayment from members – retroactive to retirement date (\$300,000 total); or
 - *With or without interest? At what rate?*
3. Collect overpayments from members for preceding 3 years (\$222,000) with remaining amount rolled into County's UAAL; or
 - *With or without interest? At what rate?*
4. Bill County for the entire amount of overpaid benefits; or
5. Roll the entire amount of overpaid benefits into County's UAAL

- V3 is configured to calculate final average salary based on information reported on the transmittal file
 - *Staff can manually add pensionable pay, i.e. annual leave pay outs that are both earned and cashable*
- As of January 2017, benefits have been calculated to include a maximum of 24 hours (Tier I) or 48 hours (Tier II) of POST Training
- OCERS' Employer Payroll team will educate all Plan Sponsors on proper reporting procedures so the need for manual calculations is reduced

Miscellaneous:

- Establish effective date for benefit correction – July 1, 2017
- Direct staff to work with the County payroll department to develop pay items so that the employer can properly report all pensionable pay to OCERS as of an effective date
- Return to Board on June 12, 2017 for a decision

Fairley, Catherine

From: Bill & Raylene Davis
Sent: Monday, May 15, 2017 7:04 AM
To: Fairley, Catherine
Subject: [EXTERNAL] P.O.S.T. Training Over Payment

Dear Ms. Fairley,

I am writing in response to your letter dated 4/20/17 regarding P.O.S.T. training over payment in my monthly retirement benefit.

The first thing that struck me was the description of the number of us affected was "several". That is a gross misrepresentation when you look at the actual number being over 140 members. "Several" to most people would mean three to five.

However to the main issue, when we (retirees) go to OCERS prior to our date of retirement we are given our paperwork showing what we will be receiving in retirement. For all practical purposes we do not have the ability or the expertise to check OCERS' calculations of our retirement payments. We rely on the expertise of OCERS to do so and it is OCERS' professional responsibility to correctly calculate the retirement payments. I have no problem that future payments do not include the amount you now say was overpayment. However, implementing any of the three "options" listed in your letter is completely unacceptable. The very proposal that OCERS might try to force repayment with interest is ridiculous. The only acceptable solution would be that you not pursue repayment of the overage and from this point on pay the retirees what you now say is the correct amount. I understand that people make mistakes however it is not appropriate for OCERS' mistake to be borne by the retirees.

Sincerely,
William Davis

May 2, 2017

To: Orange County Board of Directors

Re: My OCERS Monthly Benefit Amount

Dear Members of the Board,

It has been brought to my attention via phone call and written letter from OCERS that my monthly retirement benefit amount was not calculated properly. I understand, after the situation was explained to me by my retirement specialist that my monthly benefit is going to be reduced by \$3.20.

I do not want nor do I expect to get a benefit of more than what I have earned. The issue to me is the possible repayment of the \$3.20 over the past 52 months that I have been retired. This miscalculation was no fault of mine therefore I do not feel I should be responsible for the repayment of monies. I strongly feel the Board of Directors should consider waiving the repayment of the overpaid benefit of all retirees involved in this mishap.

Mistakes occur and this is exactly what it was. The impact of such miscalculations could have resulted in much more monetary loss for the county. The amounts are rectified and problem solved. As for the overpaid benefit to each of the retirees affected, the repercussions that could ensue from such action are not worth the time or money of all involved parties.

In conclusion, I am asking the Board of Directors to please do the right thing and waive the repayment of all overpaid monthly benefits of affected retirees.

Sincerely,

Denise D. Fairchild (Deputy Sheriff, Retired)

Fairley, Catherine

From: David Guest
Sent: Tuesday, May 09, 2017 9:25 AM
To: Fairley, Catherine
Subject: [EXTERNAL] OCERS Safety Member Monthly Benefit

Dear Ms. Fairley,


My name is David Guest and I retired from OCSD as a Sergeant with 22 years of service back in 2006. I moved with my family to Colorado to being a second career as an Investigator with a District Attorney's Office in Colorado Springs where I have worked for the past 11 years. I am also serving as an Associate Board Member with the El Paso County Retirement Board. I am proud of my time with OCSD and I have been very satisfied with my OCERS retirement.

I trust that the OCERS Board will vote to compensate its members fairly and to repay the underpaid benefits retroactively. As a board member of a retirement plan I know that this will help to maintain the confidence of the retirees and of the actively employed members of the plan. By doing the right thing now you avoid possible costly litigation and additional liability in the future.

Thank you,
David Guest

David Guest
Deputy Chief Investigator
Fourth Judicial District Attorney's Office
Colorado Springs, Colorado

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Kent L. McBride


May 10, 2017

To the Board of OCERS,

Thank you for the opportunity to address you by letter, unfortunately I cannot make an appearance in person at the monthly meeting.

In the late afternoon of April 24th, I received a phone call from Suzanne Jenike stating OCERS staff had made an error in the way training overtime was calculated for one hundred forty retired members dating back eleven years. She said my overpayment was three hundred seventy-six dollars a month, and my adjustment was the largest of all the retirees. It was quite a shock. It is still difficult to process.

I retired on January 1, 2016 with the knowledge of my benefit provided by OCERS staff. I retired with twenty-six years of service in law enforcement to move on to what I thought would be a better job. Since the job was not in law enforcement and did not encompass all of my specialized training, I took a greatly reduced salary knowing I had my monthly benefit from OCERS. Unfortunately, I left the job on March 5, 2017 after fourteen months due to the extreme time demands of the job. I thought I still had the full monthly benefit coming in. So, I made two life decisions based on the belief that I would be receiving the full monthly benefit.

When I left the Sheriff's Department, I had a rewarding job and I could have easily stayed another two to five years. In fact, I have an academy classmate, from 1989, working in the same field as I who continues in the same assignment. I would not have left the Sheriff's Department knowing that my benefit would have been this much less.

I am now faced with some decisions after being told of your intention to reduce my monthly benefit, but some of the outcomes are no longer available for me to make up for something that others did wrong. For example, if I could return to the Sheriff's Department to gain extra years of service to make-up for the loss, I believe I would now fall under a different retirement formula. Additionally, if allowed to return to service, what about the specialty pay I received prior to leaving and for a now retired police canine?

This is a mess and is not of my doing. It affects me for life. It is a much larger sum of money for me than it is for all of the other affected retirees. I fear you all may think that not making me pay back the so-called overpayment will ease that pain. I think not. How about allowing me to do the reverse – I will pay the so-called overpayment and keep the entirety of the benefit. That would ease my pain.

I ask you all to consider what it would be like to be in my shoes – three hundred seventy-six dollars a month less than expected, each and every month of my life, and a reduced benefit to my wife after I pass.

I implore you all to find a way to settle this correctly. I have spoken to some of the affected retirees and their minimal adjustment is of no consequence to them. I am not in that boat. It is worth my effort to resist your intention to reduce my benefit. And if you reduce my benefit now, what happens the next time you all find another error? Do you all send out another letter and make more cuts? And, think of the impact the COLA's will have on my intended reduction over the years - ten, twenty, or thirty years from now. This was money I was counting on based on information provided by your staff.

I faithfully worked and served for twenty-six years. This is a rotten welcome to retirement to say the least. The consequences are being borne fully by retirees who did not make the mistake and I have the most to lose.

Thank you for considering my letter. I am available to speak in person with anyone who is available. I regret I am unable to attend the May board meeting. Please feel free to call my cellphone, [REDACTED], if you would like to meet.

Sincerely,

Kent McBride
Retired Investigator

cc: AOCDS Board

Fairley, Catherine

From: Daniel & Gail Munoz
Sent: Wednesday, April 26, 2017 3:58 PM
To: Fairley, Catherine; tom@aocds.org; Jenike, Suzanne; paul@aocds.org
Subject: [EXTERNAL] Miscalculated retirement benefits

Allow me to introduce myself, my name is Daniel Munoz a retired Orange County Sheriff's Department safety member. I retired with 20 yrs. of service and have been retired for 8 yrs, 7 mos. now living in Oregon.

I was totally caught by surprise when I received a message last Friday (4/21/17) at approximately 4:20 P.M. advising me that my pension had been calculated incorrectly and I was overpaid. I was told I would receive more detailed information in the mail. Needless to say after a very stressful weekend I received "The letter". The letter was rather vague as to how far back the error went unnoticed and I was given a ballpark figure of between \$51 - \$100 per month of the overpayment. My initial reaction was schock then anger so I decided to give myself a cool down period before calling anyone about the issue. I was told they were working on the figures and it could be several weeks before I would have and exact amount and the possible resolution to the problem.

I find it hard to believe that the county and Sheriff's Department don't have a checks and balance system in place to prevent something like this from happening. I would hope there is some sort of annual audit in place to prevent this from occurring in the future.

My personal concerns are that My Social Security benefits were affected by the amount of funds I received from my OCERS retirement and the additional taxes I have paid to the State and Federal Government. Is the Retirement Board going to help me in recouping those funds? I worked in the private sector for 25 yrs.

What about the other members who might be paying child support, alimony and benefits going to survivor's of our deceased members?

In closing I hope someone will share my concerns with the Retirement Board prior to their decision being made, after all we didn't make the mistake.

Sincerely,

Daniel J Munoz (Retired Deputy Sheriff)

Fairley, Catherine

From:
Sent: Thursday, May 11, 2017 7:54 AM
To: Fairley, Catherine
Subject: [EXTERNAL] POST monthly benefit mistake

Catherine Fairley,

When I retired in October 2009, my retirement specialist said I had the best numbers she had seen as to my final payout. The only exception was the POST pay add-on which I wasn't familiar with. She stated a number of POST hours and I said then I couldn't reconcile with her number. How could this error go on this long and now your talking about repayment with the possibility of interest.

Here is something not stated in the correspondence OCERS sent me about the options being considered to resolve the issue.

What about the Federal and State income TAXES I have paid on this overpayment of benefits.

My opinion is to make the correct adjustment to my monthly benefit and move ahead.

Sincerely,
Dana Parrish, Tier 1 retiree

May 2, 2017

To: Orange County Board of Directors

Re: My OCERS Monthly Benefit Amount

Dear Members of the Board,

It has been brought to my attention via phone call and written letter from OCERS that my monthly retirement benefit amount was not calculated properly. I understand, after the situation was explained to me by my retirement specialist, that my monthly benefit is going to be reduced by \$21.

I do not want nor do I expect to get a benefit of more than what I have earned. The issue to me is the possible repayment of the \$21 over the past 52 months that I have been retired. This miscalculation was no fault of mine therefore I do not feel I should be responsible for the repayment of monies. I strongly feel the Board of Directors should consider waiving the repayment of the overpaid benefit of all retirees involved in this mishap.

Mistakes occur and this is exactly what it was. The impact of such miscalculations could have resulted in much more monetary loss for the county. The amounts are rectified and problem solved. As for the overpaid benefit to each of the retirees affected, the repercussions that could ensue from such action are not worth the time or money of all involved parties.

In conclusion, I am asking the Board of Directors to please do the right thing and waive the repayment of all overpaid monthly benefits of affected retirees.

Sincerely,

Kim E. Wright (Deputy Sheriff, Retired)

I-3

Memorandum

DATE: May 3, 2017
TO: Members of the Board of Retirement
FROM: Steve Delaney, Chief Executive Officer
SUBJECT: **PRELIMINARY DECEMBER 31, 2016 ACTUARIAL VALUATION**

Recommendation

Receive and file.

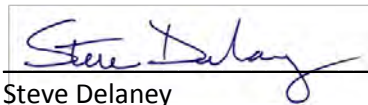
Background/Discussion

On May 15, Mr. Paul Angelo of Segal Consulting, will be reviewing the attached PowerPoint presentation which is the introduction to the December 31, 2016 Actuarial Valuation.

OCERS is nearly unique among Segal clients in that the Board receives this initial PowerPoint summary of valuation highlights a month prior to the full formal Actuarial Valuation. This informal approach allows OCERS' stakeholders time to review the data being used in the Actuarial Valuation and provide input prior to the OCERS Board giving final approval to the valuation.

This month's presentation does not require formal approval from the Board but instead, is a receive and file item. On June 12, Mr. Angelo, will return to present the formal valuation that includes contribution rates to be effective July 1, 2018 and at that time, OCERS' staff will request the OCERS Board approve and finalize the valuation for distribution to all stakeholders.

Submitted by:



Steve Delaney
Chief Executive Officer

**Orange County Employees
Retirement System**

December 31, 2016 Actuarial Valuation

May 15, 2017

*Prepared by: Paul Angelo and Andy Yeung
Segal Consulting
San Francisco*

Agenda

- Changes Since Last Valuation
- Plans of Benefit Offered at OCERS
- Summary of Employer Contribution Rates
- Calculation of Net Market, Actuarial and Valuation Value of Assets
- Unfunded Actuarial Accrued Liability and Funded Ratio
- Summary of Active and Retired Membership
- Contribution Rates for Employers and Members

Changes Since Last Valuation

- The Board approved a three-year phase-in of the employer cost impact due to assumption changes for the Safety Rate Groups starting with the December 31, 2014 valuation.
 - This is the third and final year of the phase-in, and so reflects the full cost impact of the assumption changes.
 - 1/3 of the cost impact was reflected in the rates based on the December 31, 2014 valuation and 2/3 of the cost impact was reflected in the rates based on the December 31, 2015 valuation.

- Sanitation District (Rate Group #3) paid off their Unfunded Actuarial Accrued Liability (UAAL), including both:
 - Existing UAAL determined using (smoothed) valuation assets in December 31, 2015 valuation.
 - Contingent UAAL determined using market assets in the December 31, 2015 valuation. Those additional contributions are maintained in a new OCSD UAAL deferred account.

Changes Since Last Valuation (Continued)

- Law Library was moved into their own Rate Group (Rate Group #12)
 - Outstanding balance of UAAL layers established prior to December 31, 2016 were combined and reamortized over a single equivalent period.
 - Law Library contributed an additional \$1.5 million to pay off part of their UAAL.
- OCFA contributed an additional \$5.1 million to pay off part of their UAAL
- Change in valuation data and process
 - OCERS Data
 - Leap year salary adjustment.
 - Revised benefit and eligibility service credits from V3 pension administration system.
 - Segal Process
 - Automatic continuance benefit for child beneficiary.

Plans of Benefit Offered at OCERS

➤ General Plans

- Plan A (§31676.12) – 2% @ 57
- Plan B (§31676.1) – 1.67% @ 57.5
- Plans G and H (§31676.18) – 2.5% @ 55
- Plans I and J (§31676.19) – 2.7% @ 55
- Plans M and N (§31676.16) – 2% @ 55
- Plans O and P (§31676.01) – 1.62% @ 65
- Plan S (§31676.12) – 2% @ 57
- Plan T (§31676.01) – 1.62% @ 65 CalPEPRA
- Plan U (§7522.20(a)) – 2.5% @ 67 CalPEPRA
- Plan W (§31676.01) – 1.62% @ 65 CalPEPRA

➤ Safety Plans

- Plans E and F (§31664.1) – 3% @ 50
- Plans Q and R (§31664.2) – 3% @ 55
- Plan V (§7522.25(d)) – 2.7% @ 57 CalPEPRA

Employer Contributions

- The sum of:
 - Normal Cost
 - Level percentage of payroll amortization of:
 - Balance of December 31, 2012 UAAL combined and re-amortized over 20 years as of December 31, 2013
 - New UAAL established after December 31, 2012 amortized over separate 20-year periods
 - Adjustment to reflect 18-month delay between date of valuation and date of rate implementation
- Expressed as percent of pay

Employer Contribution Rates – Fiscal Years Beginning July 1, 2017 and July 1, 2018 (% of payroll)

	FY 18-19	FY 17-18 ⁽¹⁾	Difference
Rate Group #1			
General Plans A, B and U (non-OCTA, non-OCSD)	16.37% ⁽²⁾	18.51% ⁽²⁾	-2.14%
Rate Group #2			
General Plans I, J, O, P, S, T, U and W (County et al.)	33.66%	34.38%	-0.72%
Rate Group #3			
General Plans B, G, H and U (OCSD)	11.61% ⁽³⁾	11.65% ⁽⁴⁾	-0.04%
Rate Group #5			
General Plans A, B and U (OCTA)	25.48%	26.18%	-0.70%
Rate Group #9			
General Plans M, N and U (TCA)	23.82%	26.30%	-2.48%
Rate Group #10			
General Plans I, J, M, N and U (OCFA)	30.54% ⁽³⁾	32.58%	-2.04%
Rate Group #11			
General Plans M and N, future service, and U (Cemetery)	10.88%	11.45%	-0.57%
Rate Group #12			
General Plans G, H and U (Law Library)	22.74% ⁽³⁾	22.11% ⁽⁴⁾	0.63%
Rate Group #6			
Safety Plans E, F and V (Probation)	47.79%	44.92% ⁽⁵⁾	2.87%
Rate Group #7			
Safety Plans E, F, Q, R and V (Law Enforcement)	62.81%	61.71% ⁽⁵⁾	1.10%
Rate Group #8			
Safety Plans E, F, Q, R and V (Fire Authority)	<u>47.81%</u> ⁽³⁾	<u>48.03%</u> ⁽⁵⁾	<u>-0.22%</u>
Aggregate Total	36.56%	36.97%	-0.41%

(1) The FY 17-18 composite rates for some Rate Groups have changed due to payroll shifting among plans within the Rate Groups.

(2) These rates are before adjustments to reflect the UAAL rates for employers with declining payroll.

(3) These rates are after adjustment to the contribution rates for FY 18-19 for additional UAAL contributions made during calendar year 2016.

(4) These rates are after adjustment to the contribution rates for FY 17-18 for additional UAAL contributions made during calendar year 2016.

(5) These rates reflect 2/3 phase-in of changes in actuarial assumptions starting with the December 31, 2014 valuation.

Reconciliation of Aggregate Employer Contributions (\$000)

	Contribution Rate	Estimated Amount ⁽¹⁾
1. Aggregate Recommended Contribution Rate as of December 31, 2015 (before adjustments to FY17-18 rates)	37.47%	\$659,275
2. Adjustment to FY17-18 rates for additional UAAL contributions from OCSD and Law Library	-0.06%	-\$1,069
3. Effect of 3-year phase-in of changes in actuarial assumptions for Safety Rate Groups	<u>-0.44%</u>	<u>-\$7,767</u>
4. Aggregate Recommended Contribution Rate as of December 31, 2015 (after adjustments to FY17-18 rates)	36.97%	\$650,439
5. Actuarial (gain)/loss items:		
a) Effect of recognizing one-third of 3-year phase-in of changes in actuarial assumptions for Safety rate groups	0.44%	\$7,767
b) Effect of investment loss (after smoothing)	0.46%	\$8,095
c) Effect of additional UAAL contributions from OCFA and scheduled payment for UCI	-0.03%	-\$528
d) Effect of difference in actual versus expected contributions	0.06%	\$1,056
e) Effect of difference in actual versus expected COLA increases	-0.75%	-\$13,199
f) Effect of difference in actual versus expected salary increases	0.83%	\$14,607
g) Effect of growth in total payroll greater than expected	-0.94%	-\$16,542
h) Effect of changes in data and process ⁽³⁾	-0.37%	-\$6,511
i) Effect of other experience (gain)/loss	<u>-0.11%</u> ⁽²⁾	<u>-\$1,726</u>
j) Subtotal	-0.41%	-\$6,981
6. Aggregate Recommended Contribution Rate as of December 31, 2016	36.56%	\$643,458

(1) Based on December 31, 2016 projected compensation of \$1,759,831,000.

(2) Net of an adjustment of -0.06% to reflect 18-month delay between date of valuation and date of rate implementation for all actuarial experience.

(3) Include leap year salary adjustment, revised benefit and eligibility service credits from V3 pension administration system and automatic continuance benefit for child beneficiary.

Reconciliation of Employer Contributions for General Members

	RG #1	RG #2	RG #3	RG #5	RG #9	RG #10	RG #11	RG #12
1. Aggregate Recommended Contribution Rate as of December 31, 2015 (before adjustments to FY17-18 rates)	18.51% ⁽¹⁾	34.38%	13.07%	26.18%	26.30%	32.58%	11.45%	31.00% ⁽²⁾
2. Adjustment to FY17-18 rates for additional UAAL contributions from OCSD and Law Library	0.00%	0.00%	-1.42%	0.00%	0.00%	0.00%	0.00%	-8.89%
3. Effect of 3-year phase-in of changes in actuarial assumptions for Safety Rate Groups	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
4. Aggregate Recommended Contribution Rate as of December 31, 2015 (after adjustments to FY17-18 rates)	18.51% ⁽¹⁾	34.38%	11.65%	26.18%	26.30%	32.58%	11.45%	22.11%
5. Actuarial (gain)/loss items:								
a) Effect of recognizing one-third of 3-year phase-in of changes in actuarial assumptions for Safety rate groups	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
b) Effect of investment loss (after smoothing)	0.27%	0.41%	N/A ⁽³⁾	0.38%	0.27%	0.33%	N/A ⁽³⁾	0.41%
c) Effect of additional UAAL contributions from OCFA and scheduled payment for UCI	-0.11%	0.00%	N/A ⁽³⁾	0.00%	0.00%	-0.15%	N/A ⁽³⁾	0.00%
d) Effect of difference in actual versus expected contributions	-0.12%	-0.02%	N/A ⁽³⁾	0.14%	-0.20%	-0.13%	N/A ⁽³⁾	0.19%
e) Effect of difference in actual versus expected COLA increases	-0.42%	-0.68%	N/A ⁽³⁾	-0.55%	-0.35%	-0.58%	N/A ⁽³⁾	-0.36%
f) Effect of difference in actual versus expected salary increases	-0.24%	0.87%	N/A ⁽³⁾	0.23%	-0.46%	0.08%	N/A ⁽³⁾	-0.99%
g) Effect of growth in total payroll (greater)/less than expected	-0.68%	-0.96%	N/A ⁽³⁾	-0.02%	-0.45%	-2.14%	N/A ⁽³⁾	0.60%
h) Effect of changes in data and process	-0.37%	-0.36%	N/A ⁽³⁾	-0.86%	-0.12%	-0.35%	N/A ⁽³⁾	-0.10%
i) Effect of other experience (gain)/loss ⁽⁴⁾⁽⁵⁾	<u>-0.47%</u>	<u>0.02%</u>	<u>-0.04%</u>	<u>-0.02%</u>	<u>-1.17%</u>	<u>0.90%</u>	<u>-0.57%</u>	<u>0.88%</u>
j) Subtotal	-2.14%	-0.72%	-0.04%	-0.70%	-2.48%	-2.04%	-0.57%	0.63%
6. Aggregate Recommended Contribution Rate as of December 31, 2016	16.37% ⁽⁶⁾	33.66%	11.61%	25.48%	23.82%	30.54%	10.88%	22.74%

⁽¹⁾ As of December 31, 2015, the net contribution rate for County and IHSS Public Authority after reflecting Board's UAAL contribution rate policy for employers with declining payroll (i.e., U.C.I. and DOE) is 14.86%.

⁽²⁾ After adjustments for future service improvements.

⁽³⁾ N/A because RG #3 and RG #11 have become overfunded and under CalPEPRA, the employer's contribution rate cannot be less than the Normal Cost unless the funded ratio is over 120% and other conditions in CalPEPRA are met. If that restriction did not apply, the UAAL rates would have been -0.21% for RG #3 and -1.15% for RG #11 if the overfunded amounts are amortized over 30 years.

⁽⁴⁾ Net of an adjustment to reflect 18-month delay between date of valuation and date of rate implementation for all actuarial experience.

⁽⁵⁾ Effect of other experience (gain)/loss includes:

	RG #9	RG #10	RG #11	RG #12
Effect of changes in demographics	-0.15%	0.14%	-0.57%	0.86%
Retirement experience (gain) /loss	-0.59%	0.54%	N/A	N/A

⁽⁶⁾ As of December 31, 2016, the net contribution rate for County and IHSS Public Authority after reflecting Board's UAAL contribution rate policy for employers with declining payroll (i.e., U.C.I. and DOE) is 13.30%.

2015/017

Reconciliation of Employer Contributions for Safety Members

	RG #6	RG #7	RG #8
1. Aggregate Recommended Contribution Rate as of December 31, 2015 (before adjustments to FY17-18 rates)	47.09%	63.83%	49.43%
2. Adjustment to FY17-18 rates for additional UAAL contributions from OCSD and Law Library	0.00%	0.00%	0.00%
3. Effect of 3-year phase-in of changes in actuarial assumptions for Safety Rate Groups	<u>-2.17%</u>	<u>-2.12%</u>	<u>-1.40%</u>
4. Aggregate Recommended Contribution Rate as of December 31, 2015 (after adjustments to FY17-18 rates)	44.92%	61.71%	48.03%
5. Actuarial (gain)/loss items:			
a) Effect of recognizing one-third of 3-year phase-in of changes in actuarial assumptions for Safety rate groups	2.17%	2.12%	1.40%
b) Effect of investment loss (after smoothing)	0.49%	0.69%	0.59%
c) Effect of additional UAAL contributions from OCFA and scheduled payment for UCI	0.00%	0.00%	-0.27%
d) Effect of difference in actual versus expected contributions	0.24%	0.20%	0.07%
e) Effect of difference in actual versus expected COLA increases	-0.64%	-1.28%	-1.05%
f) Effect of difference in actual versus expected salary increases	1.30%	2.16%	-0.07%
g) Effect of growth in total payroll (greater)/less than expected	-0.63%	-1.87%	-0.48%
h) Effect of changes in data and process	-0.27%	-0.50%	-0.08%
i) Effect of other experience (gain)/loss ⁽¹⁾	<u>0.21%</u>	<u>-0.42%</u>	<u>-0.33%</u>
j) Subtotal	2.87%	1.10%	-0.22%
6. Aggregate Recommended Contribution Rate as of December 31, 2016	47.79%	62.81%	47.81%

(1) Net of an adjustment to reflect 18-month delay between date of valuation and date of rate implementation for all actuarial experience.

Reconciliation of Aggregate Member Contributions (\$000)

	Contribution Rate	Estimated Amount ⁽¹⁾
Aggregate Recommended Contribution Rate as of December 31, 2015	12.01%	\$211,407
Effect of changes in demographics	<u>0.00%</u>	<u>\$9</u>
Subtotal	0.00%	\$9
Aggregate Recommended Contribution Rate as of December 31, 2016	12.01%	\$211,416

⁽¹⁾ Based on December 31, 2016 projected compensation of \$1,759,831,000.

Calculation of Net Market, Actuarial and Valuation Value of Assets

- Net market value of Pension Fund is total market value reduced by:
 - Obligations under securities lending program including securities purchased
 - Unearned contributions, retiree payroll payable and other liabilities
 - County investment account and OCSD UAAL deferred account
 - Amount held in Health Care Fund

- Actuarial value is a “smoothed” value to dampen effect of market volatility
 - Based on spreading any difference between actual market return and expected market return (7.25% starting in 2013) over 5 years
 - Return for 2016 on market value was 8.72%.
 - Return for 2016 on actuarial value was 6.33%.
 - As of December 31, 2016, there were \$445.6 million in net deferred investment losses or about 4% of the net market value.
 - Prior year: \$679.6 million in net deferred investment losses or about 6% of net market value

- Valuation value is actuarial value reduced by non-valuation reserves:
 - Medicare medical insurance reserve (only \$88,000 as of December 31, 2016)

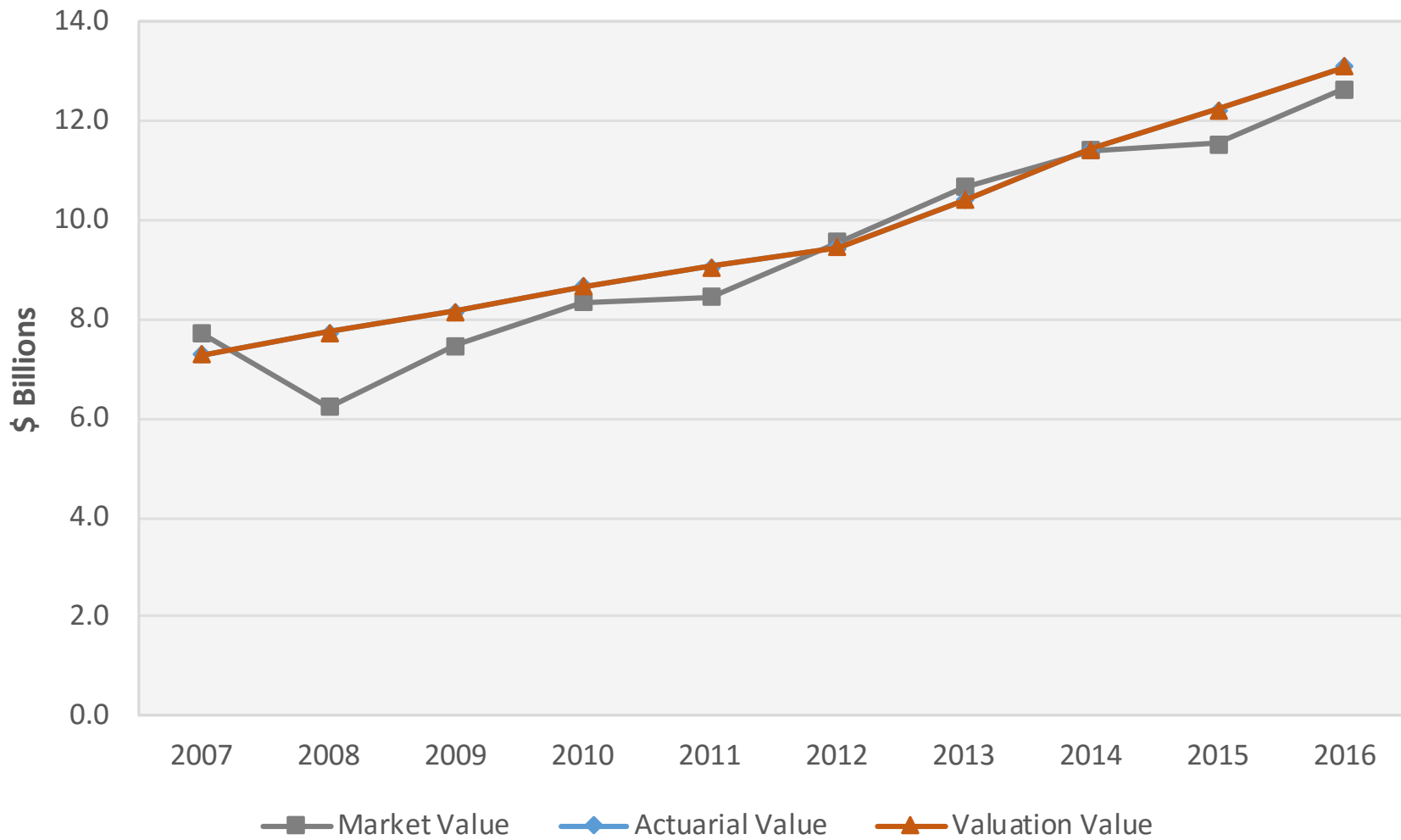
Market, Actuarial and Valuation Value of Assets (\$000)

Valuation Date	Net Market Value of Assets⁽¹⁾⁽²⁾	Actuarial Value of Assets⁽²⁾	Valuation Value of Assets
December 31, 2007	\$7,719,690	\$7,292,205	\$7,288,900
December 31, 2008	\$6,248,558	\$7,750,751	\$7,748,380
December 31, 2009	\$7,464,761	\$8,155,654	\$8,154,687
December 31, 2010	\$8,357,835	\$8,673,473	\$8,672,592
December 31, 2011	\$8,465,593	\$9,064,580	\$9,064,355
December 31, 2012	\$9,566,874	\$9,469,423	\$9,469,208
December 31, 2013	\$10,679,507	\$10,417,340	\$10,417,125
December 31, 2014	\$11,428,223	\$11,450,001	\$11,449,911
December 31, 2015	\$11,548,529	\$12,228,098	\$12,228,009
December 31, 2016	\$12,657,418	\$13,103,066	\$13,102,978

(1) Net of amounts in County investment account, prepaid employer contributions and OCSD UAAL deferred account, if any.

(2) Includes amounts in unclaimed member reserve and Medicare medical insurance reserve.

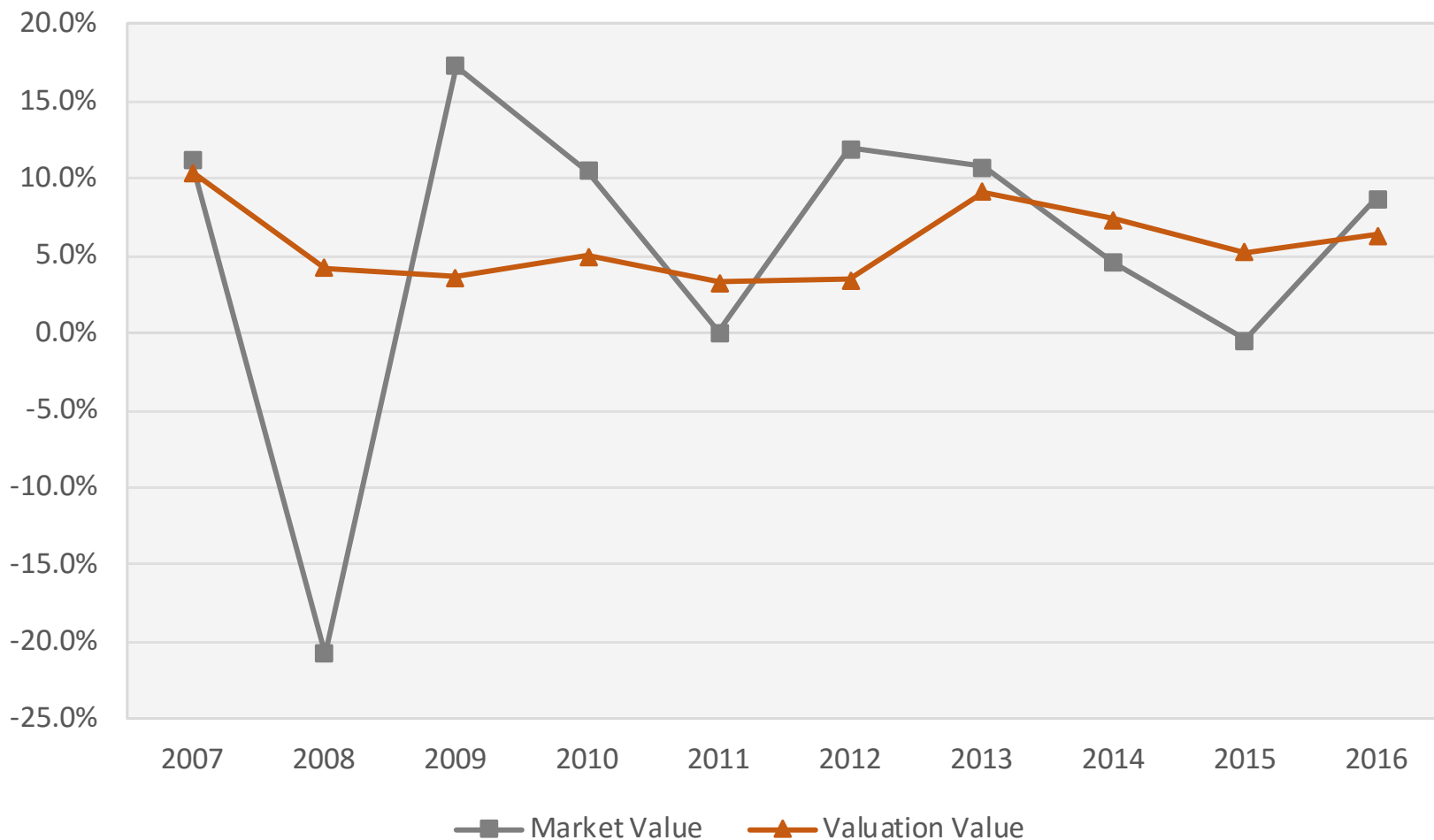
Market Value of Assets, Actuarial Value of Assets and Valuation Value of Assets as of December 31, 2007 - 2016



History of Return on Assets

	Market	Valuation	Expected
December 31, 2007	11.18%	10.45%	7.75%
December 31, 2008	-20.76%	4.25%	7.75%
December 31, 2009	17.32%	3.62%	7.75%
December 31, 2010	10.47%	5.02%	7.75%
December 31, 2011	0.04%	3.29%	7.75%
December 31, 2012	11.92%	3.49%	7.75%
December 31, 2013	10.73%	9.11%	7.25%
December 31, 2014	4.52%	7.34%	7.25%
December 31, 2015	-0.45%	5.26%	7.25%
December 31, 2016	8.72%	6.33%	7.25%
Annualized 5-Year Average	6.99%	6.29%	
Annualized 10-Year Average	4.82%	5.79%	

Market Value and Valuation Value Rates of Return for Years Ended December 31, 2007 - 2016



242/317

Unfunded Actuarial Accrued Liability (\$000) and Funded Ratio

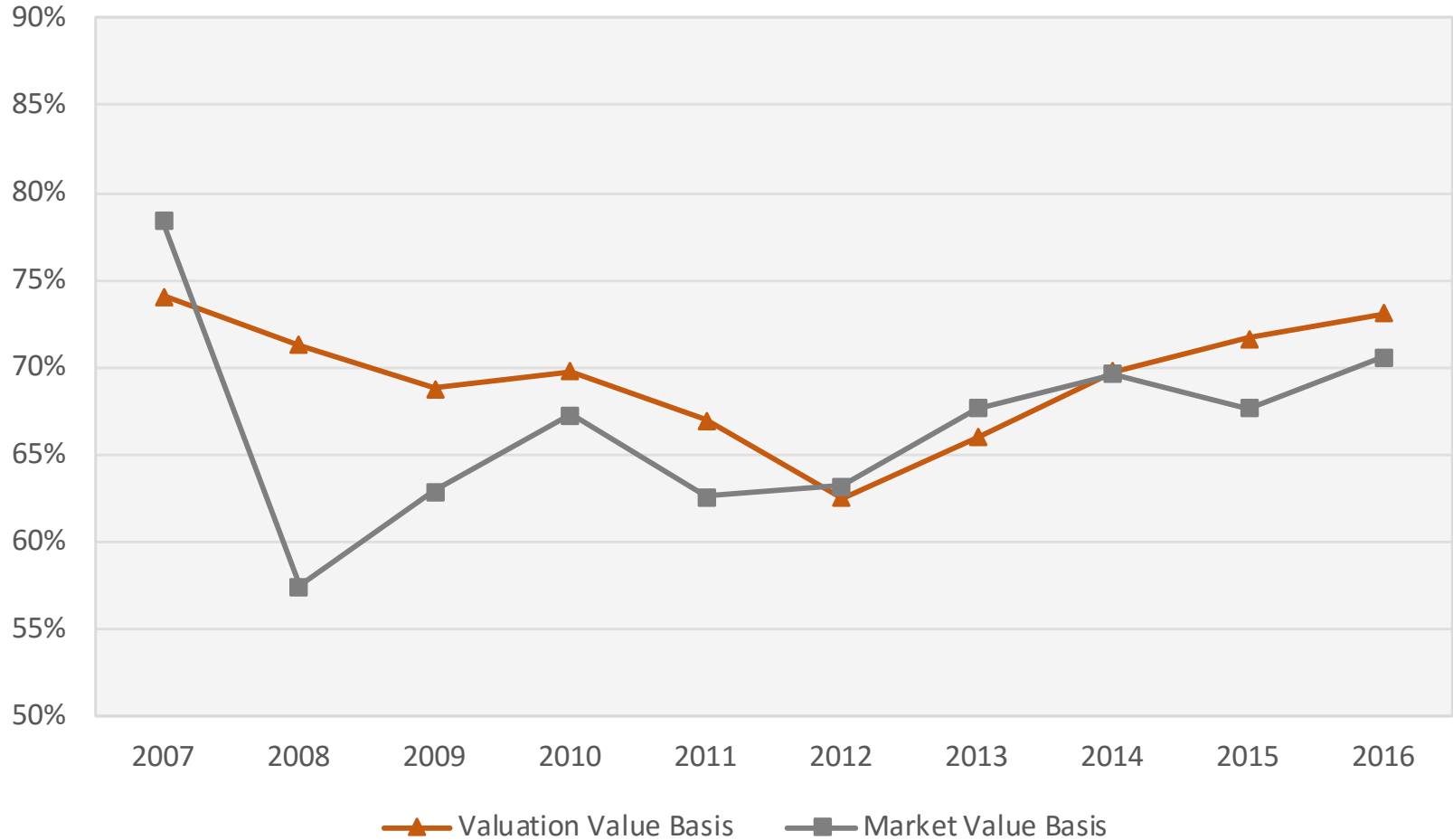
	December 31, 2016	December 31, 2015
Actuarial Accrued Liability	\$17,933,461	\$17,050,357
Valuation Value of Assets ⁽¹⁾	13,102,978	12,228,009
Unfunded Actuarial Accrued Liability	4,830,483	4,822,348
Percent Funded on Valuation Value	73.06%	71.72%
Market Value of Assets ⁽¹⁾	\$12,657,330	\$11,548,440
Percent Funded on Market Value	70.58%	67.73%

⁽¹⁾ Excludes County investment account, prepaid employer contributions, Medicare medical insurance reserve and OCSD UAAL deferred account, if any.

Unfunded Actuarial Accrued Liability (\$000) and Funded Ratio

Valuation Date	UAAL	Valuation Value Funded Ratio	Market Value Funded Ratio
December 31, 2007	\$2,549,786	74.1%	78.4%
December 31, 2008	\$3,112,335	71.3%	57.5%
December 31, 2009	\$3,703,891	68.8%	62.9%
December 31, 2010	\$3,753,281	69.8%	67.3%
December 31, 2011	\$4,458,623	67.0%	62.6%
December 31, 2012	\$5,675,680	62.5%	63.2%
December 31, 2013	\$5,367,917	66.0%	67.7%
December 31, 2014	\$4,963,213	69.8%	69.6%
December 31, 2015	\$4,822,348	71.7%	67.7%
December 31, 2016	\$4,830,483	73.1%	70.6%

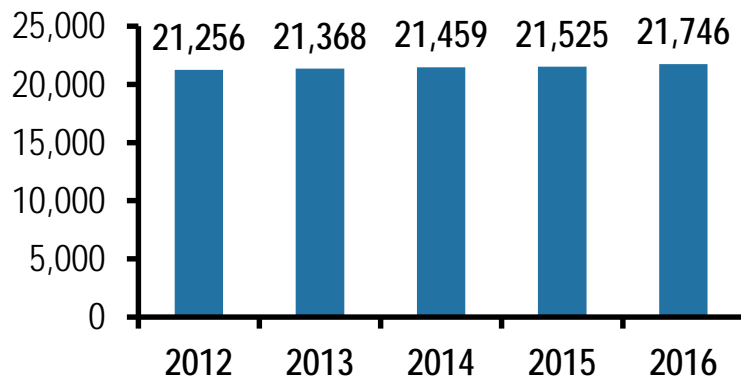
Market Value and Valuation Value Funded Ratios for Years Ended December 31, 2007 - 2016



Changes in UAAL since December 31, 2015 Valuation

➤ December 31, 2015 valuation	
• Total UAAL	\$4,822 million
➤ Changes during calendar year 2016	
• Interest minus expected payments to UAAL	-\$35 million
• Difference in actual versus expected contributions	\$5 million
• Additional UAAL payments from OCSD, Library and OCFA	-\$14 million
• Investment loss (on smoothed value of assets)	\$113 million
• Difference in actual versus expected salary increases	\$205 million
• Difference in actual versus expected COLA increases	-\$186 million
• Change in data and process	-\$93 million
• Other losses	\$13 million
➤ December 31, 2016 valuation	
• Total UAAL	\$4,830 million

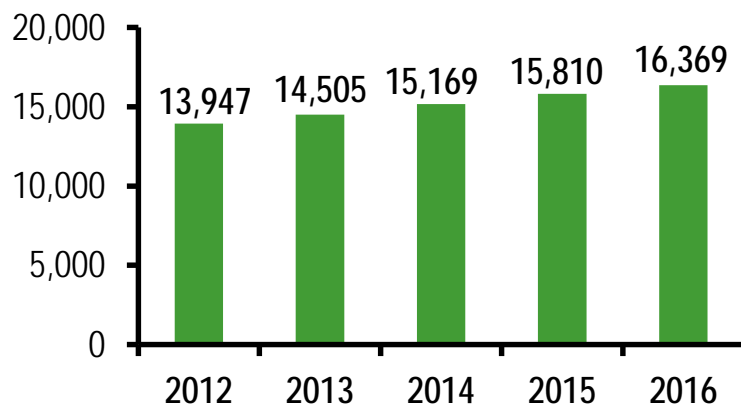
Entire OCERS Membership Demographics (as of December 31)



Active Members

- Average Age
- Average Service
- Average Compensation

	2016	2015
Active Members	21,746	21,525
Average Age	45.4	45.5
Average Service	12.9	13.1
Average Compensation	\$80,927	\$75,870



Retired Members and Beneficiaries

- Average Age
- Average Annual Benefit

	2016	2015
Retired Members and Beneficiaries	16,369	15,810
Average Age	69.7	69.5
Average Annual Benefit	\$43,641	\$42,726

Terminated Vested Members

Terminated Vested Members	5,370	5,091
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Questions and Discussion



Summary of Active Membership

Rate Group #1 General – non-OCTA, non-OCSD	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	1,640	1,535	6.8%
Average age	42.0	42.9	N/A
Average service	8.9	9.3	N/A
Projected total compensation	\$83,218,758	\$74,473,543	11.7%
Projected average compensation	\$50,743	\$48,517	4.6%

Summary of Active Membership

Rate Group #2 General Plans I, J, O, P, S, T, U and W	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	14,075	13,957	0.8%
Average age	45.9	46.0	N/A
Average service	13.0	13.1	N/A
Projected total compensation	\$1,064,427,772	\$984,353,085	8.1%
Projected average compensation	\$75,625	\$70,528	7.2%

Summary of Active Membership

Rate Group #3 General – OCSD	Year Ended December 31		Change from Prior Year
	2016	2015 ⁽¹⁾	
Number	578	572	1.0%
Average age	48.0	48.2	N/A
Average service	13.2	13.6	N/A
Projected total compensation	\$65,370,761	\$63,106,185	3.6%
Projected average compensation	\$113,098	\$110,325	2.5%

(1) Excludes 16 active members from Law Library who are now reported under Rate Group #12.

Summary of Active Membership

Rate Group #5 General – OCTA	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	1,372	1,413	-2.9%
Average age	50.0	50.0	N/A
Average service	13.3	13.5	N/A
Projected total compensation	\$104,111,593	\$100,471,246	3.6%
Projected average compensation	\$75,883	\$71,105	6.7%

Summary of Active Membership

Rate Group #9 General – TCA	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	68	63	7.9%
Average age	49.3	49.3	N/A
Average service	10.0	9.9	N/A
Projected total compensation	\$6,835,138	\$6,389,323	7.0%
Projected average compensation	\$100,517	\$101,418	-0.9%

Summary of Active Membership

Rate Group #10 General – OCFA	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	302	262	15.3%
Average age	44.1	45.4	N/A
Average service ⁽¹⁾	10.0	11.9	N/A
Projected total compensation	\$26,836,736	\$23,245,637	15.4%
Projected average compensation	\$88,863	\$88,724	0.2%

(1) For some former Santa Ana Members, service used in calculating the average above is only used for vesting purposes. Benefit service starts to accrue only effective April 2012.

Summary of Active Membership

Rate Group #11 General – Cemetery District	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	22	21	4.8%
Average age	48.1	49.0	N/A
Average service	16.8	17.4	N/A
Projected total compensation	\$1,397,215	\$1,289,124	8.4%
Projected average compensation	\$63,510	\$61,387	3.5%

Summary of Active Membership

Rate Group #12 General – Law Library	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	15	16	-6.3%
Average age	57.1	56.7	N/A
Average service	16.5	14.6	N/A
Projected total compensation	\$1,164,792	\$1,192,704	-2.3%
Projected average compensation	\$77,653	\$74,544	4.2%

Summary of Active Membership

Rate Group #6 Safety – Probation Officers	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	806	821	-1.8%
Average age	43.8	43.2	N/A
Average service	16.2	15.7	N/A
Projected total compensation	\$65,135,279	\$61,360,251	6.2%
Projected average compensation	\$80,813	\$74,738	8.1%

Summary of Active Membership

Rate Group #7 Safety – Law Enforcement	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	1,907	1,902	0.3%
Average age	41.7	41.6	N/A
Average service	14.1	14.2	N/A
Projected total compensation	\$219,505,701	\$201,875,372	8.7%
Projected average compensation	\$115,105	\$106,138	8.4%

Summary of Active Membership

Rate Group #8 Safety – Fire Authority	Year Ended December 31		Change from Prior Year
	2016	2015	
Number	961	963	-0.2%
Average age	44.1	44.0	N/A
Average service	14.3	14.2	N/A
Projected total compensation	\$121,829,553	\$115,354,130	5.6%
Projected average compensation	\$126,774	\$119,786	5.8%

(1) For some former Santa Ana Members, service used in calculating the average above is only used for vesting purposes. Benefit service starts to accrue only effective April 2012.

Summary of Retired Members and Beneficiaries

Rate Group #1 General – non-OCTA, non-OCSD	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	617	604	2.2%
Average monthly benefit ⁽¹⁾	\$2,626	\$2,611	0.6%
Disabled members			
Number in pay status	38	38	0.0%
Average monthly benefit ⁽¹⁾	\$2,290	\$2,203	3.9%
Beneficiaries			
Number in pay status	93	90	3.3%
Average monthly benefit ⁽¹⁾	\$1,324	\$1,365	-3.0%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #2 General Plans I, J, O, P, S, T, U and W	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	8,772	8,475	3.5%
Average monthly benefit ⁽¹⁾	\$3,513	\$3,445	2.0%
Disabled members			
Number in pay status	569	572	-0.5%
Average monthly benefit ⁽¹⁾	\$2,438	\$2,391	2.0%
Beneficiaries			
Number in pay status	1,397	1,395	0.1%
Average monthly benefit ⁽¹⁾	\$1,765	\$1,743	1.3%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #3 General – OCSD	Year Ended December 31		Change from Prior Year
	2016	2015 ⁽¹⁾	
Retired members			
Number in pay status	355	334	6.3%
Average monthly benefit ⁽²⁾	\$5,075	\$4,935	2.8%
Disabled members			
Number in pay status	13	12	8.3%
Average monthly benefit ⁽²⁾	\$3,259	\$3,126	4.3%
Beneficiaries			
Number in pay status	71	63	12.7%
Average monthly benefit ⁽²⁾	\$2,154	\$2,127	1.3%

⁽¹⁾ Excludes 10 retired members from Law Library who are now reported under Rate Group #12.

⁽²⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #5 General – OCTA	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	863	818	5.5%
Average monthly benefit ⁽¹⁾	\$2,402	\$2,343	2.5%
Disabled members			
Number in pay status	256	254	0.8%
Average monthly benefit ⁽¹⁾	\$2,254	\$2,220	1.5%
Beneficiaries			
Number in pay status	166	158	5.1%
Average monthly benefit ⁽¹⁾	\$1,294	\$1,298	-0.3%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #9 General – TCA	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	40	39	2.6%
Average monthly benefit ⁽¹⁾	\$2,768	\$2,786	-0.6%
Disabled members			
Number in pay status	0	0	N/A
Average monthly benefit ⁽¹⁾	N/A	N/A	N/A
Beneficiaries			
Number in pay status	3	2	50.0%
Average monthly benefit ⁽¹⁾	\$427	\$322	32.6%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #10 General – OCFA	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	141	131	7.6%
Average monthly benefit ⁽¹⁾	\$4,446	\$4,220	5.4%
Disabled members			
Number in pay status	10	10	0.0%
Average monthly benefit ⁽¹⁾	\$2,473	\$2,448	1.0%
Beneficiaries			
Number in pay status	10	8	25.0%
Average monthly benefit ⁽¹⁾	\$1,419	\$1,419	0.0%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #11 General – Cemetery District	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	5	5	0.0%
Average monthly benefit ⁽¹⁾	\$2,406	\$2,383	1.0%
Disabled members			
Number in pay status	0	0	N/A
Average monthly benefit ⁽¹⁾	N/A	N/A	N/A
Beneficiaries			
Number in pay status	4	4	0.0%
Average monthly benefit ⁽¹⁾	\$1,567	\$1,552	1.0%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #12 General – Law Library	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	10	10	0.0%
Average monthly benefit ⁽¹⁾	\$2,165	\$2,143	1.0%
Disabled members			
Number in pay status	0	0	N/A
Average monthly benefit ⁽¹⁾	N/A	N/A	N/A
Beneficiaries			
Number in pay status	0	0	N/A
Average monthly benefit ⁽¹⁾	N/A	N/A	N/A

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #6 Safety – Probation Officers	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	283	262	8.0%
Average monthly benefit ⁽¹⁾	\$5,429	\$5,499	-1.3%
Disabled members			
Number in pay status	28	25	12.0%
Average monthly benefit ⁽¹⁾	\$2,821	\$2,778	1.5%
Beneficiaries			
Number in pay status	26	24	8.3%
Average monthly benefit ⁽¹⁾	\$2,387	\$2,407	-0.8%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #7 Safety – Law Enforcement	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	1,283	1,216	5.5%
Average monthly benefit ⁽¹⁾	\$6,756	\$6,652	1.6%
Disabled members			
Number in pay status	350	343	2.0%
Average monthly benefit ⁽¹⁾	\$4,817	\$4,711	2.3%
Beneficiaries			
Number in pay status	320	305	4.9%
Average monthly benefit ⁽¹⁾	\$2,886	\$2,827	2.1%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Summary of Retired Members and Beneficiaries

Rate Group #8 Safety – Fire Authority	Year Ended December 31		Change from Prior Year
	2016	2015	
Retired members			
Number in pay status	397	377	5.3%
Average monthly benefit ⁽¹⁾	\$7,788	\$7,694	1.2%
Disabled members			
Number in pay status	155	150	3.3%
Average monthly benefit ⁽¹⁾	\$6,602	\$6,531	1.1%
Beneficiaries			
Number in pay status	93	86	8.1%
Average monthly benefit ⁽¹⁾	\$3,025	\$2,949	2.6%

⁽¹⁾ Excludes monthly benefits payable from the STAR COLA.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #1	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans A and B</i>		
Normal Cost	9.51%	9.58%
UAAL	<u>7.25%</u> ⁽¹⁾	<u>9.22%</u> ⁽²⁾
Total	16.76%	18.80%
<i>Plan U</i>		
Normal Cost	8.63%	8.92%
UAAL	<u>7.25%</u> ⁽¹⁾	<u>9.22%</u> ⁽²⁾
Total	15.88%	18.14%
<i>Rate Group 1 combined</i>		
Normal Cost	9.12%	9.29%
UAAL	<u>7.25%</u> ⁽¹⁾	<u>9.22%</u> ⁽²⁾
Total	16.37%	18.51%

- (1) For FY 18-19, the net UAAL contribution rate for County and IHSS Public Authority after reflecting Board's UAAL contribution rate policy for employers with declining payroll (i.e., U.C.I. and DOE) is 4.18%.
- (2) For FY 17-18, the net UAAL contribution rate for County and IHSS Public Authority after reflecting Board's UAAL contribution rate policy for employers with declining payroll (i.e., U.C.I. and DOE) is 5.57%.

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Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #1 (Continued)	Sample Member Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans A and B</i>		
<u>TIER 1</u>		
Entry Age: 30	6.13%	6.13%
Entry Age: 35	6.70%	6.70%
Entry Age: 40	7.34%	7.33%
<u>TIER 2</u>		
Entry Age: 30	8.28%	8.27%
Entry Age: 35	9.03%	9.03%
Entry Age: 40	9.89%	9.89%
<i>Plan U</i>		
Entry Age: 30	8.16%	8.22%
Entry Age: 35	8.90%	8.97%
Entry Age: 40	9.72%	9.80%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #2	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans I and J</i>		
Normal Cost	13.19%	13.19%
UAAL ⁽¹⁾	<u>21.72%</u>	<u>22.45%</u>
Total	34.91%	35.64%
<i>Plans O and P</i>		
Normal Cost	5.53%	5.46%
UAAL ⁽¹⁾	<u>21.72%</u>	<u>22.45%</u>
Total	27.25%	27.91%
<i>Plan S</i>		
Normal Cost	10.35%	11.40%
UAAL	<u>21.72%</u>	<u>22.45%</u>
Total	32.07%	33.85%

⁽¹⁾ Before adjustments for future service benefit improvements.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #2 (continued)	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plan T</i>		
Normal Cost	6.58%	6.56%
UAAL ⁽¹⁾	<u>21.72%</u>	<u>22.45%</u>
Total	28.30%	29.01%
<i>Plan U</i>		
Normal Cost	8.28%	8.35%
UAAL ⁽¹⁾	<u>21.72%</u>	<u>22.45%</u>
Total	30.00%	30.80%
<i>Plan W⁽²⁾</i>		
Normal Cost	6.68%	6.68%
UAAL	<u>21.72%</u>	<u>22.45%</u>
Total	28.40%	29.13%
<i>Rate Group 2 combined</i>		
Normal Cost	11.94%	11.93%
UAAL	<u>21.72%</u>	<u>22.45%</u>
Total	33.66%	34.38%

(1) Before adjustments for future service benefit improvements.

(2) No active members yet for Plan W as of December 31, 2016.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #2 (Continued)	Sample Member Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans I and J</i>		
<u>TIER 1</u>		
Entry Age: 30	12.35%	12.35%
Entry Age: 35	13.53%	13.52%
Entry Age: 40	14.78%	14.77%
<u>TIER 2</u>		
Entry Age: 30	11.76%	11.75%
Entry Age: 35	12.87%	12.86%
Entry Age: 40	13.98%	13.97%
<i>Plan P</i>		
<u>TIER 2</u>		
Entry Age: 30	7.62%	7.62%
Entry Age: 35	8.32%	8.32%
Entry Age: 40	9.10%	9.10%
<i>Plan S</i>		
<u>TIER 2</u>		
Entry Age: 30	9.94%	9.99%
Entry Age: 35	10.85%	10.91%
Entry Age: 40	11.87%	11.94%

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Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #2 (Continued)	Sample Member Rate	
	FY 18 – 19	FY 17 – 18
<i>Plan T</i>		
Entry Age: 30	5.94%	5.93%
Entry Age: 35	6.48%	6.48%
Entry Age: 40	7.10%	7.10%
<i>Plan U</i>		
Entry Age: 30	7.59%	7.68%
Entry Age: 35	8.29%	8.38%
Entry Age: 40	9.05%	9.15%
<i>Plan W</i>⁽¹⁾		
Entry Age: 30	6.00%	6.00%
Entry Age: 35	6.55%	6.55%
Entry Age: 40	7.18%	7.18%

(1) No active members yet for Plan W as of December 31, 2016.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #3	Employer Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans G and H</i>		
Normal Cost	12.28%	12.33%
UAAL	<u>0.00%</u> ⁽¹⁾	<u>0.00%</u> ⁽²⁾
Total	12.28%	12.33%
<i>Plan B</i>		
Normal Cost	10.21%	10.30%
UAAL	<u>0.00%</u> ⁽¹⁾	<u>0.00%</u> ⁽²⁾
Total	10.21%	10.30%
<i>Plan U</i>		
Normal Cost	9.27%	9.25%
UAAL	<u>0.00%</u> ⁽¹⁾	<u>0.00%</u> ⁽²⁾
Total	9.27%	9.25%
<i>Rate Group 3 combined</i>		
Normal Cost	11.61%	11.65%
UAAL	<u>0.00%</u> ⁽¹⁾	<u>0.00%</u> ⁽²⁾
Total	11.61%	11.65%

(1) These rates are after adjustment to the contribution rates for FY 18-19 for additional UAAL contributions made during calendar year 2016.

(2) These rates are after adjustment to the contribution rates for FY 17-18 for additional UAAL contributions made during calendar year 2016.

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Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #3 (Continued)	Sample Member Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans G and H</i>		
<u>TIER 1</u>		
Entry Age: 30	12.16%	12.16%
Entry Age: 35	13.31%	13.31%
Entry Age: 40	14.54%	14.54%
<u>TIER 2</u>		
Entry Age: 30	11.57%	11.57%
Entry Age: 35	12.66%	12.66%
Entry Age: 40	13.76%	13.76%
<i>Plan B</i>		
<u>TIER 2</u>		
Entry Age: 30	8.34%	8.35%
Entry Age: 35	9.10%	9.12%
Entry Age: 40	9.96%	9.98%
<i>Plan U</i>		
Entry Age: 30	7.94%	7.95%
Entry Age: 35	8.66%	8.68%
Entry Age: 40	9.46%	9.47%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #5	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans A and B</i>		
Normal Cost	10.76%	10.70%
UAAL	<u>14.76%</u>	<u>15.52%</u>
Total	25.52%	26.22%
<i>Plan U</i>		
Normal Cost	10.25%	10.12%
UAAL	<u>14.76%</u>	<u>15.52%</u>
Total	25.01%	25.64%
<i>Rate Group 5 combined</i>		
Normal Cost	10.72%	10.66%
UAAL	<u>14.76%</u>	<u>15.52%</u>
Total	25.48%	26.18%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #5 (Continued)	Sample Member Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans A and B</i>		
<u>TIER 1</u>		
Entry Age: 30	6.26%	6.25%
Entry Age: 35	6.84%	6.82%
Entry Age: 40	7.49%	7.47%
<u>TIER 2</u>		
Entry Age: 30	8.40%	8.39%
Entry Age: 35	9.17%	9.15%
Entry Age: 40	10.03%	10.02%
<i>Plan U</i>		
Entry Age: 30	8.74%	8.70%
Entry Age: 35	9.54%	9.49%
Entry Age: 40	10.42%	10.37%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #9	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans M and N</i>		
Normal Cost	13.30%	13.44%
UAAL	<u>11.46%</u>	<u>13.79%</u>
Total	24.76%	27.23%
<i>Plan U</i>		
Normal Cost	10.40%	10.57%
UAAL	<u>11.46%</u>	<u>13.79%</u>
Total	21.86%	24.36%
<i>Rate Group 9 combined</i>		
Normal Cost	12.36%	12.51%
UAAL	<u>11.46%</u>	<u>13.79%</u>
Total	23.82%	26.30%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #9 (Continued)	Sample Member Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans M and N</i>		
<u>TIER 1</u>		
Entry Age: 30	9.23%	9.19%
Entry Age: 35	10.08%	10.03%
Entry Age: 40	11.04%	10.99%
<u>TIER 2</u>		
Entry Age: 30	8.79%	8.75%
Entry Age: 35	9.60%	9.55%
Entry Age: 40	10.50%	10.45%
<i>Plan U</i>		
Entry Age: 30	7.95%	7.87%
Entry Age: 35	8.68%	8.59%
Entry Age: 40	9.47%	9.37%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #10	Employer Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans I and J</i>		
Normal Cost	13.61%	13.44%
UAAL	<u>18.35%</u> ⁽¹⁾	<u>20.53%</u>
Total	31.96%	33.97%
<i>Plans M and N</i>		
Normal Cost	12.64%	12.72%
UAAL	<u>18.35%</u> ⁽¹⁾	<u>20.53%</u>
Total	30.99%	33.25%
<i>Plan U</i>		
Normal Cost	8.99%	8.81%
UAAL	<u>18.35%</u> ⁽¹⁾	<u>20.53%</u>
Total	27.34%	29.34%
<i>Rate Group 10 combined</i>		
Normal Cost	12.19%	12.05%
UAAL	<u>18.35%</u> ⁽¹⁾	<u>20.53%</u>
Total	30.54%	32.58%

⁽¹⁾ These rates are after adjustment to the contribution rates for FY 18-19 for additional UAAL contributions made during calendar year 2016.

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Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #10 (Continued)	Sample Member Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans I and J</i>		
<u>TIER 1</u>		
Entry Age: 30	12.38%	12.36%
Entry Age: 35	13.55%	13.53%
Entry Age: 40	14.80%	14.78%
<u>TIER 2</u>		
Entry Age: 30	11.78%	11.76%
Entry Age: 35	12.89%	12.87%
Entry Age: 40	14.00%	13.98%
<i>Plan N</i>		
<u>TIER 2</u>		
Entry Age: 30	8.81%	8.74%
Entry Age: 35	9.62%	9.54%
Entry Age: 40	10.52%	10.45%
<i>Plan U</i>		
Entry Age: 30	8.05%	8.04%
Entry Age: 35	8.79%	8.77%
Entry Age: 40	9.59%	9.58%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #11	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans M and N</i>		
Normal Cost	11.09%	11.33%
UAAL	<u>0.00%</u>	<u>0.00%</u>
Total	11.09%	11.33%
<i>Plan U</i>		
Normal Cost	9.98% ⁽¹⁾	12.23%
UAAL	<u>0.00%</u>	<u>0.00%</u>
Total	9.98%	12.23%
<i>Rate Group 11 combined</i>		
Normal Cost	10.88%	11.45%
UAAL	<u>0.00%</u>	<u>0.00%</u>
Total	10.88%	11.45%

⁽¹⁾ The reduction in the Normal Cost is caused by a reduction in the average entry age from 47.8 to 38.3.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #11 (Continued)	Sample Member Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans M and N</i>		
<u>TIER 1</u>		
Entry Age: 30	9.23%	9.19%
Entry Age: 35	10.08%	10.03%
Entry Age: 40	11.04%	10.99%
<u>TIER 2</u>		
Entry Age: 30	8.79%	8.75%
Entry Age: 35	9.60%	9.55%
Entry Age: 40	10.50%	10.45%
<i>Plan U</i>		
Entry Age: 30	8.26%	8.57%
Entry Age: 35	9.01%	9.35%
Entry Age: 40	9.84%	10.21%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #12	Employer Rates	
	FY 18 – 19	FY 17 – 18
<i>Plans G and H</i>		
Normal Cost	13.32%	12.33%
UAAL	<u>9.69%</u> ⁽¹⁾	<u>9.92%</u> ⁽²⁾
Total	23.01%	22.25%
<i>Plan U</i>		
Normal Cost	7.59% ⁽³⁾	9.25%
UAAL	<u>9.69%</u> ⁽¹⁾	<u>9.92%</u> ⁽²⁾
Total	17.28%	19.17%
<i>Rate Group 12 combined</i>		
Normal Cost	13.05%	12.19%
UAAL	<u>9.69%</u> ⁽¹⁾	<u>9.92%</u> ⁽²⁾
Total	22.74%	22.11%

(1) These rates are after adjustment to the contribution rates for FY 18-19 for additional UAAL contributions made during calendar year 2016.

(2) These rates are after adjustment to the contribution rates for FY 17-18 for additional UAAL contributions made during calendar year 2016.

(3) The reduction in the Normal Cost is caused by a reduction in the average entry age (including all members in Law Library and OCSD when both employers were included in 2017/2018 (the December 31, 2015 valuation) from 37.6 to 32.5.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #12 (Continued)	Sample Member Rates	
	FY 18 – 19	FY 17 – 18
<i>Plan H</i>		
<u>TIER 2</u>		
Entry Age: 30	11.60%	11.57%
Entry Age: 35	12.70%	12.66%
Entry Age: 40	13.79%	13.76%
<i>Plan U</i>		
Entry Age: 30	7.81%	7.95%
Entry Age: 35	8.52%	8.68%
Entry Age: 40	9.30%	9.47%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #6	Employer Rates	
	FY 18 – 19	FY 17 – 18 ⁽¹⁾
<i>Plans E and F</i>		
Normal Cost	21.87%	21.92%
UAAL	<u>26.06%</u>	<u>23.15%</u>
Total	47.93%	45.07%
<i>Plan V</i>		
Normal Cost	15.24%	15.00%
UAAL	<u>26.06%</u>	<u>23.20%</u>
Total	41.30%	38.20%
<i>Rate Group 6 combined</i>		
Normal Cost	21.73%	21.77%
UAAL	<u>26.06%</u>	<u>23.15%</u>
Total	47.79%	44.92%

⁽¹⁾ These rates reflect 2/3 phase-in of changes in actuarial assumptions starting with the December 31, 2014 valuation.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #6 (Continued)	Sample Member Rates	
	FY 17 – 18	FY 17 – 18
<i>Plans E and F</i>		
<u>TIER 1</u>		
Entry Age: 30	12.34%	12.30%
Entry Age: 35	13.30%	13.26%
Entry Age: 40	14.44%	14.40%
<u>TIER 2</u>		
Entry Age: 30	16.89%	16.86%
Entry Age: 35	18.14%	18.10%
Entry Age: 40	19.52%	19.48%
<i>Plan V</i>		
Entry Age: 30	15.60%	15.58%
Entry Age: 35	16.71%	16.70%
Entry Age: 40	17.99%	17.97%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #7	Employer Rate	
	FY 18 – 19	FY 17 – 18 ⁽¹⁾
<i>Plans E and F</i>		
Normal Cost	25.63%	25.56%
UAAL	<u>38.19%</u>	<u>36.99%</u>
Total	63.82%	62.55%
<i>Plans Q and R</i>		
Normal Cost	23.00%	23.24%
UAAL	<u>38.19%</u>	<u>37.10%</u>
Total	61.19%	60.34%
<i>Plan V</i>		
Normal Cost	19.39%	20.04%
UAAL	<u>38.19%</u>	<u>37.38%</u>
Total	57.58%	57.42%
<i>Rate Group 7 combined</i>		
Normal Cost	24.62%	24.67%
UAAL	<u>38.19%</u>	<u>37.04%</u>
Total	62.81%	61.71%

⁽¹⁾ These rates reflect 2/3 phase-in of changes in actuarial assumptions starting with the December 31, 2014 valuation.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #7 (Continued)	Sample Member Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans E and F</i>		
<u>TIER 1</u>		
Entry Age: 30	13.32%	13.31%
Entry Age: 35	14.35%	14.34%
Entry Age: 40	15.58%	15.56%
<u>TIER 2</u>		
Entry Age: 30	17.94%	17.92%
Entry Age: 35	19.24%	19.23%
Entry Age: 40	20.66%	20.64%
<i>Plan R</i>		
<u>TIER 2</u>		
Entry Age: 30	16.82%	16.82%
Entry Age: 35	18.04%	18.04%
Entry Age: 40	19.36%	19.37%
<i>Plan V</i>		
Entry Age: 30	18.13%	18.57%
Entry Age: 35	19.43%	19.91%
Entry Age: 40	20.91%	21.42%

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #8	Employer Rate	
	FY 18 – 19	FY 17 – 18 ⁽¹⁾
<i>Plans E and F</i>		
Normal Cost	26.84%	26.87%
UAAL	<u>22.27%</u> ⁽²⁾	<u>22.37%</u>
Total	49.11%	49.24%
<i>Plans Q and R</i>		
Normal Cost	21.86%	22.10%
UAAL	<u>22.27%</u> ⁽²⁾	<u>22.37%</u>
Total	44.13%	44.47%
<i>Plan V</i>		
Normal Cost	14.84%	15.30%
UAAL	<u>22.27%</u> ⁽²⁾	<u>22.79%</u>
Total	37.11%	38.09%
<i>Rate Group 8 combined</i>		
Normal Cost	22.54%	25.62%
UAAL	<u>22.27%</u> ⁽²⁾	<u>22.41%</u>
Total	47.81%	48.03%

⁽¹⁾ These rates reflect 2/3 phase-in of changes in actuarial assumptions starting with the December 31, 2014 valuation.

⁽²⁾ These rates are after adjustment to the contribution rates for FY 18-19 for additional UAAL contributions made during calendar year 2016.

Contribution Rates - Fiscal Years Beginning July 1, 2017 and July 1, 2018

Rate Group #8 (Continued)	Sample Member Rate	
	FY 18 – 19	FY 17 – 18
<i>Plans E and F</i>		
<u>TIER 1</u>		
Entry Age: 30	12.74%	12.70%
Entry Age: 35	13.73%	13.69%
Entry Age: 40	14.92%	14.88%
<u>TIER 2</u>		
Entry Age: 30	17.35%	17.32%
Entry Age: 35	18.64%	18.61%
Entry Age: 40	20.07%	20.04%
<i>Plan R</i>		
<u>TIER 2</u>		
Entry Age: 30	16.50%	16.52%
Entry Age: 35	17.73%	17.75%
Entry Age: 40	19.09%	19.11%
<i>Plan V</i>		
Entry Age: 30	14.92%	15.39%
Entry Age: 35	15.99%	16.49%
Entry Age: 40	17.20%	17.74%

I-4

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: Steve Delaney, Chief Executive Officer
SUBJECT: **THE TRIENNIAL REVIEW OF ACTUARIAL ASSUMPTIONS – AN OVERVIEW**

Recommendation

Receive and file.

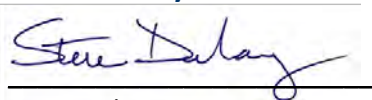
Background/Discussion

Every three years the OCERS Board works with our actuary to review the systems actuarial assumptions, and modify those if experience shows they are no longer reflective of what we should anticipate.

The next triennial study will begin in July of this year.

To help Trustees, staff, and stakeholders better understand what is to take place and why, on May 15 we are fortunate to have Mr. Alan Milligan, Former CalPERS Chief Actuary with us to lead that discussion.

Submitted by:



Steve Delaney
Chief Executive Officer

I-5

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: Gina M. Ratto, Chief Legal Officer
SUBJECT: ROLE OF AUDIT COMMITTEE IN SELECTING EXTERNAL AUDITORS AND PROPOSED REVISIONS TO AUDIT COMMITTEE CHARTER

Recommendation

Staff recommends that the Board of Retirement adopt revisions to the Audit Committee Charter to clarify the role of the Audit Committee in the selection and appointment of the actuarial auditor and financial auditor.

Background/Discussion

At the April 5, 2017 Governance Committee meeting, the Governance Committee reviewed and approved revisions to the Board of Retirement Charter. During the course of that review, the Governance Committee discussed the role of the Board and of the Audit Committee in the process of selecting and retaining the actuarial auditor and financial auditor.

The actuarial auditor and financial auditor are “Named Service Providers” under the Board’s Procurement and Contracting Policy, and the Board of Retirement has retained the authority to approve the appointment of all Named Service Providers. The Governance Committee recommends that the role of the Audit Committee should be to participate in the solicitation process for the actuarial auditor and financial auditor, including approving the Request for Proposals; review candidate qualifications; participate in the interview process; and recommend the best candidates to the Board for final selection and appointment.

Staff proposes revisions to Section 5.c. of the Audit Committee Charter to clarify the role of the Audit Committee with respect to external auditors as follows:

1. The Audit Committee will conduct the solicitation for the actuarial auditor, including without limitation approving the Request for Proposals or other solicitation vehicle, reviewing candidate qualifications and conducting interviews, and will recommend one or more finalists to the Board for appointment.
2. The Audit Committee will conduct the solicitation for the financial auditor, including without limitation approving the Request for Proposals or other solicitation vehicle, reviewing candidate qualifications and conducting interviews, and will recommend one or more finalists to the Board for appointment.
3. The Audit Committee will solicit for, select, and appoint all external auditors (other than the actuarial auditor and financial auditor) engaged for the purpose of issuing an independent audit report or

performing other independent audits, reviews or attest services, except that contracts valued at more than \$100,000 require Board approval pursuant to the Board's Procurement and Contracting Policy.

4. The Audit Committee will oversee the work of all external auditors, including the actuarial auditor and the financial auditor.

Under the Board's Procurement and Contracting Policy, Named Service Providers are subject to regular monitoring and performance reviews by the Board or a committee of the Board at least biennially. The Audit Committee will be responsible for performing this monitoring and performance review of all external auditors including the actuarial auditor and the financial auditor.

5. The Audit Committee will approve other audits, agreed upon procedures, and non-audit work to be conducted by external auditors.

The Audit Committee Charter with revisions in redlined/strikeout text is attached. A copy of the Board's Procurement and Contracting Policy is also attached for the Board's ease in reference.

Attachments

Submitted by:



Gina M. Ratto
Chief Legal Officer

Introduction

1. The Board of Retirement has established an Audit Committee to assist it in overseeing the audit function within OCERS. The Audit Committee is an advisory committee to the Board of Retirement, and its recommendations are subject to final approval by the Board. Notwithstanding the preceding sentence, with respect to those matters expressly assigned to it in this Audit Committee Charter, the Audit Committee has final authority.

Purpose

2. The Audit Committee provides oversight of OCERS' internal and external audit activities. The Audit Committee assists the Board in ensuring the independence of the internal audit functions and ensuring that appropriate action is taken on audit recommendations. The Audit Committee helps promote and enhance effective internal controls for OCERS operations, and oversees communication between external auditors, internal auditors, and management.

Membership

3. The Audit Committee will consist of four members of the Board of Retirement. The Board Chair will appoint members of the Audit Committee as provided in the OCERS By-Laws and designate one member to serve as the Committee Chair.

Ideally, members should have expertise in accounting, auditing, financial reporting, and internal control. Although these desired traits are not mandatory, members should be sufficiently knowledgeable about these topics to make informed decisions with the assistance of a financial expert.

Meetings

4. The Audit Committee will meet at least quarterly, with authority to convene additional meetings as circumstances require. All Audit Committee members are expected to attend each meeting. The Director of Internal Audit will attend all Audit Committee meetings. Meeting notices will be provided to interested parties in conformance with applicable laws, regulations, customs, and practices. All meetings are subject to the Brown Act. Meeting agendas will be prepared and provided in advance to members, along with appropriate briefing materials. Minutes of meetings will be prepared. Minutes of the meeting will contain a record of persons present, decisions taken, and a high-level summary of the discussion.

Responsibilities and Duties

5. The Audit Committee's key areas of responsibility are:
 - a. *Law and Ethics*: The Audit Committee will provide the policy and framework for compliance with laws and regulations, mechanisms for assessment of compliance, and communication with the Board on OCERS policies.
 - b. *Financial Reporting Process*: The Audit Committee will:

Audit Committee Charter

1. Oversee the reporting of all financial information, including reviewing with the external auditor their scope, plan, duties, responsibilities, and the timing and engagement fee of the annual financial audit;
 2. Resolve disagreements between the internal auditor, external auditor, and /or management regarding financial reporting and internal control risks identified in the audit;
 3. Review the audited financial statements with the external auditor and senior management;
 4. Review management letters with management;
 5. Review the findings or comments of regulatory agencies concerning financial statements or other information regarding OCERS;
 6. Review the external auditor's assessments of the appropriate application of accounting principles by OCERS management;
 7. Review all matters required to be disclosed by accounting standards, including significant changes in those standards; and
 8. Meet with senior management, at least annually, to discuss the effectiveness of the internal financial and operational control policies.
- c. *Oversight of the External Auditors:* The Audit Committee will:
- ~~1. Appoint, compensate, retain, and oversee the work of external auditors engaged for the purpose of issuing an independent audit report or performing other independent audits, reviews, or attest services;~~
 1. Conduct the solicitation for the financial auditor, including without limitation, approving the Request for Proposals or other solicitation vehicle, reviewing candidate qualifications and conducting interviews, and recommend one or more finalists to the Board for appointment; Select external audit services for the Comprehensive Annual Financial Report;
 2. Conduct the solicitation for the actuarial auditor, including without limitation, approving the Request for Proposals or other solicitation vehicle, reviewing candidate qualifications and conducting interviews, and recommend one or more finalists to the Board for appointment;
 3. Conduct the solicitation for, select, and appoint all external auditors (other than the financial auditor and the actuarial auditor) engaged for the purpose of issuing an independent audit report or performing other independent audits, reviews, or attest services;
 4. Oversee the work of all external auditors; and conduct regular monitoring and performance reviews of the actuarial auditor and the financial auditor at least biennially in accordance with the Board's Procurement and Contracting Policy at least every three years for performance, independence, and the impact of non-audit services; and

OCERS Board Charter

Audit Committee Charter

5. Approve other audits, agreed upon procedures, and non-audit work to be conducted by ~~the~~ external auditors.
- d. *Oversight of Internal Audit*: The Audit Committee will:
 1. Approve all decisions regarding the performance evaluation, appointment, or removal of the Director of Internal Audit;
 2. Approve the compensation and salary adjustments of the Director of Internal Audit;
 3. Review the charters and policies assigned to Audit Committee at least once every three years in accordance with the schedule set forth in the OCERS Charters and Policies Review Schedule and recommend the same for approval by the Board of Retirement;
 4. Review and approve the risk assessment and annual Internal Audit Plan prepared by the Director of Internal Audit;
 5. Receive and review internal and external audit reports and management responses;
 6. Review significant recommendations from audits during the year and management's responses, and make appropriate recommendations to the Board; and
 7. Make appropriate inquiries of the Director of Internal Audit to determine whether there is audit scope or budgetary limitations that impede the ability of the internal audit activity to carry out its responsibilities.
- e. *Internal Control and Risk Management*: The Audit Committee will review management responsibilities for:
 1. The adequacy of OCERS' internal controls, including information systems;
 2. Material risks facing OCERS and management's actions to minimize risk;
 3. Risks from external organizations such as service providers, vendors, investment managers, consultants, and plan sponsors; and
 4. Special investigations and whistleblower mechanisms. The Audit Committee can retain independent counsel, accountants, or other specialists to assist in the conduct of an investigation.

Reporting

6. The Audit Committee will:
 - a. Report to the Board of Retirement its activities and the results of its reviews; and
 - b. Review significant changes in accounting standards, policies, or practices that may impact OCERS and report the results of that review to the Board of Retirement.

Charter Review

7. The Audit Committee will review this Charter at least once every three (3) years and recommend any amendments to the Board for approval as necessary to ensure that the Charter remains relevant and appropriate.



OCERS Board Charter Audit Committee Charter

Charter History

8. The Audit Committee Charter was adopted by the Board of Retirement on November 18, 2002, and amended on January 17, 2012, ~~and~~ July 20, 2015, and May 15, 2017.

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.

A handwritten signature in blue ink that reads "Steve Delaney". The signature is written in a cursive style and is contained within a thin blue rectangular border.

~~7/20/15~~/15/17

Steve Delaney, Secretary of the Board

Date

Introduction

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Ideally, members should have expertise in accounting, auditing, financial reporting, and internal control. Although these desired traits are not mandatory, members should be sufficiently knowledgeable about these topics to make informed decisions with the assistance of a financial expert.

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Audit Committee Charter

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 3. Review the audited financial statements with the external auditor and senior management;
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 5. Review the findings or comments of regulatory agencies concerning financial statements or other information regarding OCERS;
 6. Review the external auditor's assessments of the appropriate application of accounting principles by OCERS management;
 7. Review all matters required to be disclosed by accounting standards, including significant changes in those standards; and
 8. Meet with senior management, at least annually, to discuss the effectiveness of the internal financial and operational control policies.
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 3. Conduct the solicitation for, select, and appoint all external auditors (other than the financial auditor and the actuarial auditor) engaged for the purpose of issuing an independent audit report or performing other independent audits, reviews, or attest services;
 4. Oversee the work of all external auditors; and conduct regular monitoring and performance reviews of the actuarial auditor and the financial auditor at least biennially in accordance with the Board's Procurement and Contracting Policy; and
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OCERS Board Charter

Audit Committee Charter

2. Approve the compensation and salary adjustments of the Director of Internal Audit;
 3. Review the charters and policies assigned to Audit Committee at least once every three years in accordance with the schedule set forth in the OCERS Charters and Policies Review Schedule and recommend the same for approval by the Board of Retirement;
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Charter Review

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OCERS Board Charter Audit Committee Charter

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.

A handwritten signature in blue ink that reads "Steve Delaney".

5/15/17

Steve Delaney, Secretary of the Board

Date

Purpose and Background

1. The Procurement and Contracting Policy is intended to establish guidelines by which OCERS will procure goods and services.

Objectives

2. The objectives of this policy are to ensure that:
 - a. Contractual arrangements and the purchase of goods are made in the best interests of the members and beneficiaries of the OCERS;
 - b. The procurement of goods and services is efficient, diligent, transparent, economical and fair;
 - c. A system of internal controls related to the procurement of goods and services is supported by a requirement to contract for or purchase goods and services being developed by the user Department, authorized by appropriate OCERS staff, and paid for by the Finance Department;
 - d. All contracting activities are performed by qualified individuals specifically delegated the authority, responsibility and accountability for said activities using sound business practices in an ethical manner, taking into consideration applicable law and regulations; and
 - e. Contracts for the provision of goods and services are procured from qualified sources that provide maximum value for each expenditure, taking into consideration the nature of the goods and services and, as appropriate, quality and reliability, competitive price and delivery schedule.

Policy Guidelines

3. The CEO or his designee will be responsible for authorizing the purchase of goods and the execution of contracts for OCERS and for keeping the Board of Retirement apprised of such actions, where they are material.
4. Only the CEO or his delegate may bind or commit the Agency for the purchase of goods or services based upon the provisions of this policy, except in emergencies and as may be otherwise authorized by the Board of Retirement.
5. OCERS staff and Members of the Board shall not be directly or indirectly involved in a governmental decision if the decision will have a material financial effect on an economic interest of the staff person, Board Member, or the immediate family of a staff person or Board Member. Material financial effect and economic interest are defined in the California Code of Regulations, 2 Cal. Code Regs. Sections 18703 through 18705.6.
6. The role of the Board of Retirement is to:
 - a. Establish appropriate policies to ensure selection decisions are prudent and sound;
 - b. To monitor compliance with such policies; and

Procurement and Contracting

- c. To approve, upon the recommendation of the CEO, the appointment of Named Service Providers, where such providers are retained primarily to fulfill an independent audit or advisory role for the Board of Retirement. Named Service Providers include:
 - i. Consulting actuary;
 - ii. Actuarial auditor;
 - iii. General investment consultant;
 - iv. Alternative investments consultant;
 - v. Real estate investment consultant;
 - vi. Fiduciary counsel;
 - vii. Custodian;
 - viii. Securities lending manager; and
 - ix. Financial auditor.

The Search Process

General Guidelines

- 7. The selection of all service providers and vendors will be made in the best interests of the members and beneficiaries of OCERS, in keeping with the fiduciary responsibilities of the Board of Retirement and staff.
- 8. The selection of service providers and vendors will reflect a level of rigor that is commensurate with the importance and materiality of the service or purchase of goods in question. Procurements will be performed with one of the following methods:
 - a. Invitation for Bid (IFB):
 - i. This method will be used when multiple bidders are available and willing to bid, and procurement needs can be stated in detail, with precision, or where services or products are standardized,
 - ii. Competitive bidding will be used to procure these goods and services with the lowest responsive and responsible bidder being selected.
 - b. Request for Proposal (RFP)
 - i. This method will be used where the product or service to be acquired cannot be stated with specificity, such as consulting services.
 - ii. The RFP process includes technical and price competition between vendors and service providers. The proposal that best meets OCERS needs, with consideration for price, qualifications and other relevant and objective factors set forth in the RFP, will be selected.
 - c. Small Purchase Procedures:

Procurement and Contracting

- i. The procurement of goods and services requiring an expenditure of less than \$50,000 can qualify for a simplified acquisition process that is informal.
 - ii. The simplified process must include documentation that the procurement was fair, ethical and transparent.
 - iii. A minimum of three oral or written price or rate quotes from qualified sources must be obtained. Documentation of all quotes received will be retained.
 - d. Sole Source:
 - i. In cases when the CEO believes that a competitive alternative to a particular service provider does not exist, the CEO will provide the Board of Retirement with a report describing the unique characteristics of the service provider and supporting the need for a *sole source* approach.
9. The CEO or his designee will consider as broad a universe of qualified service providers and vendors that is practical and reasonable given budgetary, staffing, time and other relevant constraints.
10. The Board of Retirement authorizes the CEO to take advantage of available tools, technology or other resources that will allow for efficient screening of the universe of potential service providers and/or vendors so as to arrive at a qualified pool of candidates that warrant detailed examination, provided such tools, technology, or resources are consistent with sound and prudent industry practice.

Named Service Providers

11. For Named Service Providers, the CEO, or his or her designee, will conduct an RFP at the expiration of a six year term from the effective date of the contract, or more often as necessary.
12. Prior to conducting a search for a Named Service Provider, the CEO or his designee will present a written summary information to the Board, which shall include:
 - a. The type of service provider being sought and the supporting rationale;
 - b. The objectives and selection criteria to be met and their relative importance;
 - c. An estimated timeline for completion of the search process; and
 - d. A description of the search methodology that is deemed most appropriate and cost effective in the particular circumstances, and that addresses such issues as:
 - i. Whether a consultant is to be used in the search process;
 - ii. The due diligence efforts to be undertaken, including such efforts as site visits, and reference checks. A copy of any criteria and weights to be used will be attached for information purposes;
 - iii. Whether a Request for Proposal (RFP), or a variation thereof, is to be used with supporting rationale, and if so; a copy of the proposed RFP will be attached for information purposes;
 - iv. The screening or selection criteria expected to be employed; and

Procurement and Contracting

- v. Such other information that the CEO believes may assist the Board of Retirement in better understanding the search process.
13. The Board of Retirement, or a committee of the Board, will interview the candidate or candidates recommended for appointment as Named Service Providers.
 14. The CEO will provide the Board of Retirement or a designated committee of the Board of Retirement with periodic reports on the status of all search processes involving Named Service Providers.
 15. Upon completion of the analysis and due diligence involved in a search process for a Named Service Provider, the CEO will provide the Board of Retirement or a designated committee of the Board of Retirement with a report containing, at a minimum:
 - a. A description of the due diligence activities undertaken;
 - b. The recommended finalist or a list of finalist candidates and analysis concerning the candidates;
 - c. Confirmation of compliance with the objectives, selection criteria and search methodology presented to the Board of Retirement prior to the commencement of the search, or an explanation of any deviations that occurred;
 - d. A description of performance expectations and the proper time horizon for evaluation of results;
 - e. A Bid (pricing) summary with annotations regarding differentiability features; and
 - f. A description of the expected performance monitoring and reporting efforts to be carried out with respect to the service provider throughout the term of the contract, including the reporting to be provided to the Board of Retirement.

Contracts

16. The CEO or his designee will, with the assistance of legal counsel as appropriate, negotiate and execute all agreements, contracts, and purchase orders with service providers and vendors.
17. All contracts with Named Service Providers will include a provision that the contract is subject to renewal at least every three years, for a total term of no more than six years, at which time the CEO and pertinent committees of the Board will assess the continued appropriateness and cost-effectiveness of the Named Service Provider in question. At the expiration of a six year term, the CEO, or his or her designee, will conduct a RFP.
18. Annually, the CEO will provide the Board of Retirement a schedule of the contracts with Named Service Providers due for renewal in the coming year.

Monitoring and Reporting

19. The following Named Service Providers will be subject to regular monitoring and also undergo performance reviews by the full Board or a committee of the Board at least biennially: consulting actuary; investment-related consultants; fiduciary counsel; and the financial auditor. Criteria for

Procurement and Contracting

review may include, without limitation, performance, staff satisfaction, competitiveness of fees, quality of reporting, and accuracy of assumptions and forecasts.

20. The CEO will report regularly and in a timely fashion to the Board of Retirement on all monitoring efforts involving Named Service Providers, identifying any material issues or actions taken.
21. All monitoring and reporting provisions contained in this policy serve as minimum requirements. If more stringent requirements are established within other policies of the OCERS, such other policies will control.
22. The CEO will report promptly to the Board any failures by Named Service Providers (other than investment managers which are covered under the Monitoring and Reporting Policy) to comply with the terms of their contract.

Authority to Execute Contracts for Goods and Services

23. The authority to execute contracts for goods or services, change orders and amendments to such contracts and purchase requisitions on behalf of OCERS shall be as follows:
 - a. Named Service Provider Contracts:
 - i. Board approval required prior to execution.
 - ii. Must have available funds in the current year approved budget, including any Board approved amendments to the budget, to fund the current year's expense/cost.
 - iii. Valued at less than \$100,000 can be executed by the Executive responsible for the budget in which the contract is to be paid from.
 - iv. Valued at \$100,000 or more must be executed by the CEO.
 - b. Contracts and Agreements:
 - i. Must have available funds in the current year's approved budget, including any Board approved amendments to the budget, to fund the current year's expense/cost.
 - ii. Valued at less than \$100,000 can be executed by the Executive responsible for the budget in which the contract/agreement is to be paid from.
 - iii. Valued at \$100,000 or more must be executed by the CEO.
 - iv. Valued at more than \$100,000 require Board approval prior to execution.
 - c. Purchase of Goods:
 - i. Must have available funds in the approved budget, including any Board approved amendments to the budget.
 - ii. Non-routine expenses or items valued at less than \$100,000 can be purchased with the approval of the Executive responsible for the budget in which the goods are to be paid from.
 - iii. Non-routine expenses or items valued at \$100,000 or more must be approved by the CEO.
 - iv. Non-routine expenses or items valued at more than \$100,000 must be approved by the Board either as part of their approval of the annual budget by it being identified specifically in

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the annual budget or by a separate item approved by the Board at a Regular or Special Board of Retirement meeting.

- d. Routine Operating Expenses (see definition in Section 24 below):
 - i. Must have available funds in the approved budget, including any Board approved amendments to the budget.
 - ii. Can be approved by the Executive responsible for the budget in which the items or services will be provided from.

24. Routine Operating Expenses

- a. Include items such as:
 - i. Office supplies, postage, furniture, and office equipment,
 - ii. General services contracts and agreements such as hearing officers, medical panel reviewers, property management, maintenance and repair of landscaping, building and equipment, printing, board of retirement member elections, computer consulting, software licenses, messenger services, catering etc., and
 - iii. Temporary services, professional and consulting services engaged to supplement or support staff in the continued efforts of administering the pension plan to OCERS members.
- b. Suppliers of Routine Operating Expenses will be reviewed routinely, not less than every three years, to ensure that prices remain competitive.

25. The CEO may delegate his authority to execute documents to an Executive. The Executive may delegate his/her authority to approve check requests and/or purchase requisitions. All such delegations will be documented in writing, identifying the individual to whom the authority is delegated and any dollar restriction or budget account restrictions associated therewith.

Policy Review

26. The Board of Retirement will review this policy at least every three (3) years to ensure that it remains relevant and appropriate.

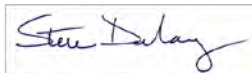
Policy History

27. The Board of Retirement adopted this policy on Monday, November 18, 2002.

28. The policy was revised May 19, 2008, March 22, 2010, May 20, 2013, and January 20, 2015.

Secretary's Certificate

I, the undersigned, the duly appointed Secretary of the Orange County Employees Retirement System, hereby certify the adoption of this policy.



Steve Delaney
Secretary of the Board

1/20/15

Date

I-6

Memorandum

DATE: May 15, 2017
TO: Members of the Board of Retirement
FROM: Gina M. Ratto, Chief Legal Officer
SUBJECT: SACRS PROPOSED BY-LAWS AMENDMENT TO ADD MEMBERSHIP CODE OF CONDUCT AND DIRECTION TO VOTING DELEGATE

Recommendation

On the SACRS Bylaws Committee's proposed amendment to the SACRS By-Laws, which would add a Membership Code of Conduct, and which will be presented to the SACRS membership for a vote at the SACRS business meeting on May 19, 2017, direct the OCERS voting delegate and alternate delegates to vote "no unless amended."

Background/Discussion

At the SACRS Annual Business meeting to be held on May 19, 2017, the SACRS Bylaws Committee will propose an amendment to the SACRS By-Laws that would add Section 7 – "Membership Code of Conduct" to Article III of the SACRS By-Laws. A copy of the proposed amendment is attached.

Paragraph 2 of the proposed Membership Code of Conduct states:

2. Standard of Decorum and Professionalism. SACRS members, representatives, family members, and guests are expected to maintain appropriate decorum and professionalism to improve the deliberative process and foster the integrity of the SACRS community. Verbal or non-verbal conduct which has the purpose or effect of affecting a person's dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment will not be tolerated, regardless of whether such behavior amounts to unlawful conduct. Such inappropriate behavior includes, but is not limited to, the use of profanity, threats, offensive gestures, racial slurs, ethnic jokes, posting of offensive statements or pictures, derogatory remarks, insults, epithets, verbal or physical conduct that a reasonable person would find threatening, intimidating, or humiliating, assault or other unwelcome physical conduct, or other similar conduct.

Paragraph 2 of the proposed Membership Code of Conduct is overly broad and vague in its application "to improve the deliberative process and foster the integrity of the SACRS community." In addition, the provision uses terms such as "conduct which has the purpose or effect of affecting a person's dignity," "derogatory remarks," "insults" and "humiliating," that are not defined, vague and subjective.

Paragraph 3 of the proposed Membership Code of Conduct sets forth penalties for violations of the Code of Conduct, including suspension or termination of membership in SACRS. Penalties may be assessed in the discretion of the SACRS Board of Directors. The Membership Code of Conduct does not, however, set forth a

process for investigating alleged violations nor a process for the Board of Directors to determine whether there has been a violation. In addition, it does not provide any due process to the SACRS member who has allegedly violated the Code.

Staff recommends that the Board direct the OCERS voting delegate to vote “no” on the proposed amendment to the SACRS By-Laws to add the Membership Code of Conduct unless the Membership Code of Conduct is amended to:

- Clarify its application;
- Delete or define undefined, vague and subjective terms;
- Set forth processes for investigating alleged violations and making a determination of whether there has been a violation; and
- Include due process for the SACRS member who is alleged to have violated the Membership Code of Conduct.

Attachment

Submitted by:



Gina M. Ratto
Chief Legal Officer

SACRS By-Laws

... Article III – Membership

... Section 7 – Membership Code of Conduct

1. Policy Against Harassment, Discrimination, and Retaliation. SACRS is committed to providing an environment free from harassment and maintains a strict policy that forbids sexual harassment and other harassment, discrimination and retaliation based on race, color, national origin, ancestry, religion and religious creed, political affiliation, citizenship, sex, gender, gender identity, sexual orientation, age, pregnancy or breastfeeding, medical conditions, marital status, medical condition, physical or mental disability, or any other protected classification under federal, state or local law.

2. Standard of Decorum and Professionalism. SACRS members, representatives, family members, and guests are expected to maintain appropriate decorum and professionalism to improve the deliberative process and foster the integrity of the SACRS community. Verbal or non-verbal conduct which has the purpose or effect of affecting a person's dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment will not be tolerated, regardless of whether such behavior amounts to unlawful conduct. Such inappropriate behavior includes, but is not limited to, the use of profanity, threats, offensive gestures, racial slurs, ethnic jokes, posting of offensive statements or pictures, derogatory remarks, insults, epithets, verbal or physical conduct that a reasonable person would find threatening, intimidating, or humiliating, assault or other unwelcome physical conduct, or other similar conduct.

3. Penalties for Violation. Any person found in violation of the SACRS Code of Conduct by the Board of Directors may, within the discretion of Board of Directors and as permitted by law, be temporarily or permanently barred from attending or participating in any SACRS conference, meeting, function, or event. Any member found in violation of the SACRS Code of Conduct by the Board of Directors may be subject to penalty within the discretion of Board of Directors and as permitted by law, including but not limited to:

- (a) Warning and/or Censure;
- (b) Suspension or revocation of the privileges of any member or their designated representatives;
- (c) Suspension of membership; and,
- (d) Termination of membership.

4. Affiliate Guidelines. Affiliate Members are and remain subject to additional guidelines as have been or may be approved by the Board of Directors.

5. No Duty. Although SACRS endeavors to create to create a respectful and welcoming environment for its membership, representatives, and other guests, it does not by this Code of Conduct or any other act, voluntarily assume a duty to do so, except as otherwise required by federal, state, or local law.